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SOUTHWEST GAS CORPORATION RECEIVED

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Arizona Corporation Commission  
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Docket Control Office  
Arizona Corporation Commission  
1200 West Washington Street  
Phoenix, AZ 85007

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Re: Docket No. G-01551A-04-0876 -  
In the Matter of the Application of Southwest Gas Corporation -  
Filing for Approval of Its Multi-Family New Construction Program

Please accept the enclosed original and thirteen (13) copies of the Exceptions of Southwest Gas Corporation to the Recommended Opinion and Order in the above referenced proceeding.

Should you have any questions regarding this matter, please do not hesitate to contact me. You may reach me directly at (702) 876-7163.

Thank you for your assistance in this matter.

Respectfully,

*Debra Jacobson by Jon Egan*

Debra Jacobson  
Director/Government and State Regulatory Affairs

Enclosures

**BEFORE THE ARIZONA CORPORATION COMMISSION**

**MIKE GLEASON**

**Chairman**

**WILLIAM A. MUNDELL**

**Commissioner**

**JEFF HATCH-MILLER**

**Commissioner**

**KRISTEN K. MAYES**

**Commissioner**

**GARY PIERCE**

**Commissioner**

**IN THE MATTER OF THE APPLICATION OF  
SOUTHWEST GAS CORPORATION FOR  
APPROVAL OF ITS MULTI-FAMILY NEW  
CONSTRUCTION PROGRAM**

**DOCKET NO. G-01551A-04-0876**

**EXCEPTIONS OF SOUTHWEST GAS CORPORATION  
TO THE RECOMMENDED OPINION AND ORDER**

Pursuant to A.A.C. R14-3-110.B, Decision No. 69918 in Docket No. G-01551A-04-0876, by the Arizona Corporation Commission (Commission or ACC), dated September 27, 2007, and the notice of proposed Order (Order) of the Commission Staff (Staff) filed by the Director, Utilities Division on April 22, 2008, Southwest Gas Corporation (Southwest or the Company) respectfully submits to the Commission for consideration the following exceptions to the Staff's recommended Order regarding Southwest's request to establish a Multi-Family Demand Side Management (DSM) program (Program):

**I.**

**INTRODUCTION**

The overarching goal set forth in Southwest's Multi-Family DSM application is to establish a cost-effective DSM program that promotes energy conservation regardless of energy

source, as well as to provide energy efficiency benefits to Southwest's customers in multi-family housing; a significant segment of the population. Southwest respectfully requests the Commission consider the merits and overall benefits attendant to the Multi-Family program and find that it is in the public interest to adopt the Program as proposed by Southwest.

The Appendix attached hereto contains proposed amendments that modify the applicable portions of the recommended opinion and order with respect to each item that Southwest addresses below.

## II.

### FUEL-SWITCHING

Southwest believes Staff has taken an unnecessarily narrow view in reviewing the Program by concluding that it will encourage fuel-switching. Fuel-switching is not the intent of the Program; rather, the goal is to provide increased energy efficiency benefits to the multi-family population of consumers in Arizona, and to make better use of Arizona's energy and associated resources. The participating projects already take natural gas service for common areas (such as a pool/spa and/or a laundry). As such, prospective Program participants are already Southwest customers.

The use of the term "fuel switching" by Staff is a misnomer. The Multi-Family program proposed by Southwest is only for new construction. There will be no fuel switched, as there will be no pre-existing energy source, such as electricity, to convert to use another energy source.

Program participation would include envelope improvements which save energy year-round, regardless of energy source. Southwest's proposed hydronic system measure is more efficient and conserves energy overall when compared to other common installations, such as a

separate gas water heater paired with a gas furnace, or an electric water heater with electric resistance heating.

The total benefits of Southwest's proposed Program are significant. Specifically, the Program will reduce overall energy consumption, decrease emissions, and increase water savings for Arizona, in addition to the cost (bill) savings to apartment dwellers. Staff's review of the Program appears to focus on a small increase in natural gas therms potentially accruing from the Program.

A comparison of what may have been new all-electric apartments in Southwest's Program, yields in a net increase of approximately 64,000 therms annually, which is less than one percent (1%) of the total annual therms currently used in multi-family dwellings according to Southwest's multi-family rate schedule. In addition, this increase represents only 1/100 of a percent (0.01%) of the Company's total therm sales in its Arizona service territories. This is an immaterial and insignificant increase in natural gas usage.

### III.

#### **OVERALL DECREASED ENERGY CONSUMPTION**

Comparing electricity to natural gas for direct use, such as water and space heating, natural gas installations reduce overall energy consumption, which ultimately eclipses the de minimus increase in total annual therms that Southwest could theoretically experience under the Program.

In a briefing paper, *Natural Gas in a Carbon-Constrained World*, prepared by Ken Costello, Chief, Natural Gas Section, National Regulatory Research Institute in March 2008, the author states on page 7:

*Another issue at hand is the question of the benefits of relying on natural gas for tasks other than power generation to achieve a carbon-constrained world. At*

*least three speakers at the 2008 NARUC (National Association of Regulatory Utility Commissions) Winter Committee Meetings advocated switching away from electricity to natural gas for direct use applications. They asserted that converting from electricity to natural gas for water and space heating, for example, could produce substantial benefits to society. A major reason for these reductions is **the much higher loss of energy in the production-delivery cycle for electricity than for natural gas.** One presenter pointed out that direct use of natural gas delivers 90 percent energy efficiency to end users, compared with a 27 percent end-use efficiency when natural gas is used to generate electricity. The same presenter also showed that **the direct use of natural gas in home space and water heating results in 40 percent less CO2 emissions than electricity.** (Emphasis added).*

Further, on page 9, Mr. Costello states:

*A third issue is whether a state commission should encourage fuel switching from electricity to natural gas for direct applications. If the evidence presented by the natural gas industry is credible, national and state policy goals of higher energy efficiency and a less-carbon environment would seem more achievable with a shifting of residential and commercial customers to natural gas for meeting their space and water heating needs. Should state commissions approve incentives or utility promotional activities to elicit customer fuel switching to natural gas from electricity?*

*....presumably it [fuel-switching] could have effects similar to energy efficiency initiatives (emphasis Southwest's). Should a state commission, as part of a GHG strategy, actually prohibit the use of electricity for direct applications in new structures where natural gas would be preferable from both an economic and environmental perspective? Are there barriers to fuel-switching that state commissions need to address? (Emphasis added)*

Staff's recommendation does not adequately consider the loss of energy in the production-delivery cycle for electricity. Southwest suggests that the real total MMBtu (millions British thermal units) saved annually is a much better measurement of the potential impact of the Company's Program on Arizona's energy consumption. Real total MMBtu is based on an average thirty percent (30%) power plant efficiency. Because electricity requires an energy source for production and has significant line losses, every kWh saved by the Program results in much higher (real total) MMBtu savings.

Thus, all units participating in the Program will save energy and these savings accrue annually. Even if one were to add in the approximately 64,000 additional annual therms used by 560 participating multi-family units that may have otherwise have been all-electric, the total MMBtu saved over the 28 year life of the Program is significant (approximately 800,000 MMBtu over the Program life) when considered in the larger picture. Southwest requests the Commission consider the total impact of the Program on Arizona's resources, rather than focusing on a small increase in the amount of annual therms consumed by end-users. Southwest believes that a small net increase in the number of annual therms is of minor import when compared to the overall real total MMBtu energy savings, emissions savings, and water savings that would result from the Program if approved by the Commission.

#### IV.

#### CUSTOMER SAVINGS

Apartment dwellers would save energy and therefore, see a decrease in their energy bills. Customers would experience savings of approximately \$78 to \$112 annually, regardless of whether the apartment would have been dual-energy or traditionally all-electric prior to participation.

#### V.

#### ENVIRONMENTAL BENEFITS

Southwest does not dispute Staff's calculations of CO2 savings; however, Staff's numbers differ from those estimated by Southwest in its Program application. Southwest calculated lifetime CO2 savings of approximately 70.4 million pounds. If valued very conservatively at \$30/ton, this savings would equate to lifetime savings of over \$1.05 million.

Southwest believes the full societal benefits of the Program, such as the lifetime savings for other emissions, including water savings of nearly 18 million gallons, would have an important, positive impact on overall air quality and water resources in Arizona and, as such, should be approved.

## VI.

### COST EFFECTIVENESS

Southwest agrees with Staff that cost-effectiveness of the Program is achieved primarily from kWh savings; however, this is typical for natural gas DSM programs. Given the arid and hot desert climate in Southwest's Arizona service areas, as well as other factors, there are limited measures that would pass the cost-effectiveness test on the basis of natural gas therm savings alone.

## VII.

### MISCELLANEOUS

Southwest would like to clarify that the duct measure in the proposed Order is not limited to testing for leakage; it requires actual sealing of the ducts to reduce leakage followed by testing to verify sealing.

The proposed Order also uses the misnomer "hydronic heater" which does not adequately address the integrated nature of the hydronic system. The hydronic system is not simply a heater, but integrates water heating and space heating, producing an inherently more efficient combination than either natural gas water heating and a furnace, or electric water heating and electric resistance heating.

Further, Southwest maintains ongoing communication with community action agencies participating in its LIEC program and is willing to reallocate any unallocated DSM budget

dollars to its LIEC or other DSM programs, should such reallocation be feasible. The Order should reflect this position.

**VIII.**

**CONCLUSION**

Southwest respectfully requests the Commission approve Southwest's proposed DSM program relating to Multi-Family housing, along with the proposed budget. Southwest's Program demonstrates the potential for significant energy and associated resource savings and it should not be disapproved based on a narrow concern regarding fuel-switching. Such a perspective would unduly penalize a segment of Arizona consumers who stand to benefit not just from energy cost savings, but also from the greater good gained from conserving Arizona's energy resources, air quality, and water resources.

DATED this 1st day of May, 2008.

Respectfully submitted by  
SOUTHWEST GAS CORPORATION

  
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# APPENDIX

SOUTHWEST GAS CORPORATION  
PROPOSED AMENDMENTS TO PROPOSED ORDER

DOCKET NO: G-01551A-04-0876

Program Description

**Page 2, Findings of Fact No. 6 at Lines 19:**

**Strike:** "Hydronic heating combines water and space heating in a single unit."

**Replace with:** "A hydronic heating system combines water and space heating in a single integrated system and is more energy-efficient than a separate gas water heater paired with a gas furnace or electric water heater with electric resistance heating."

**Page 2, Findings of Fact No. 7 at Lines 22-25:**

**Strike:** "...hydronic heaters..." on Lines 22 and 24

**Replace with:** "...hydronic systems..."

**Strike:** "...normally..." on Lines 23 and 24

**Replace with:** "...traditionally..."

**Strike:** "...electric water heaters, those units..." on Line 25

**Replace with:** "...electric water heaters and electric resistance heating, those units..."

Participation

**Page 4, Findings of Fact No. 13 at Lines 9-12:**

**Strike:** "Should the program be approved and continue beyond 2009, Southwest anticipates that dual-energy apartment participation would continue at the 2008-2009 level, while otherwise all-electric participation would gradually increase."

**Replace with:** "It is anticipated that should the program be approved and continue beyond 2009, dual-energy apartment participation may gradually increase, and as market conditions improve, otherwise all-electric participation may also increase and the requested program budget may need to be adjusted accordingly."

Staff Analysis – Cost Effectiveness

**Page 5, Findings of Fact No. 17 at Lines 25-26:**

**Strike:** "...hydronic heaters..." on Line 25

**Replace with:** "...hydronic systems..."

**Strike:** "...electric water heaters." on Line 25  
**Replace with:** "...electric water heaters and electric resistance heating."

**Strike:** "...kWh savings..." on Line 26  
**Replace with:** "kWh and therm savings..."

#### Fuel Switching

#### **Page 7, Findings of Fact No. 22 at Lines 11-12:**

**Strike:** "...a majority..." on Line 11  
**Replace with:** "...about half..."

**Strike:** "...significant..." on Line 12  
**Replace with:** "...small..."

#### **Page 7, Findings of Fact No. 23 at Lines 14, 22:**

**Strike:** "...a significant issue with respect to..." on Line 14  
**Replace with:** "...not the intent of..."

**Add:** "Staff suggests that..." before "Fuel switching is a significant issue with respect to the Multi-Family program." on Line 22

#### Reporting Requirements

#### **Page 8, Findings of Fact No. 27 at Lines 13-15:**

**Strike:** Entire paragraph and renumber Findings of Fact Nos. 28- 31 to 27-30.

#### Conclusions of Law

#### **Page 9, CONCLUSIONS OF LAW at third Conclusion, Line 7**

**Strike:** "...not..."

#### Order

#### **Page 9, ORDER at First Ordering Paragraph, Lines 10-11**

**Strike:** "...not be and hereby is not approved."  
**Replace with:** "...be and hereby is approved."

#### **ORDER at Second Ordering Paragraph, Lines 12, 15**

**Strike:** "...renew..." on Line 12  
**Replace with:** "...continue..."

**Strike:** "...shift in..." on Line 15  
**Replace with:** "...reallocation of unallocated..."

**ORDER at Third Ordering Paragraph, Line 18**  
**Strike:** "...shifting..." on Line 18  
**Replace with:** "...reallocating of unallocated..."