2006-8 Energy Efficiency Portfolio
Quarterly Report Narrative

Program Name: Advanced Home Program
Program Number: SCG3502
Quarter: First Quarter 2006

1. Program Description

The *Advanced Home Program***,** offered by Southern California Gas Company, promotes a comprehensive residential new construction concept with a cross-cutting focus to sustainable design and construction, green building practices, energy efficiency and emerging technologies. Through a combination of education, design assistance and financial support, the *Program* works with the building and related industries to exceed compliance with the California *Code of Regulations, Title 24, Part 6, 2005 Building Energy Efficiency Standards for Residential and Nonresidential Buildings (Standards),* to prepare builders for changes to the *Standards* and to create future pathways beyond compliance and traditional energy savings objectives. Participation is open to single family and low and high rise multiple family residential new construction.

The *Program* offers two methods of participation, a performance based approach and a prescriptive based approach. The performance approach increases the overall energy efficiency of the project to 15% or greater than compliance with the *Standards* as detailed in the compliance models.

The prescriptive approach addresses specific individual elements that support changes in the *Standards,* improve the construction and comfort of residential dwelling units and increase energy efficiency in new construction.

Residential new construction has been recognized as a rich ground for the promotion of new technologies, experimentation and analysis and has been the spawning ground for numerous technologies now considered mainstream such as high performance windows, high performance water heaters and heating, ventilation and air conditioning systems. Many designers would like to explore further these and other technologies and innovations in their designs. For effective use and maximum performance of many of these technologies, such as photovoltaic and alternative water and space heating applications, building design and construction must be taken to a new level.

The *Advanced Home Demonstration Projects Program* addresses these needs through training and design assistance. Further, through the use of financial support, the architect and builder will be able to explore technologies often avoided due to cost barriers. By incorporating products and practices not often seen as mainstream, such as photovoltaic, into residential design, opportunities for product suppliers, architects, designers, builders, contractors and others will surface to increase product awareness, utilization and as a result, lower costs. This more targeted approach to specific design solutions offers an opportunity to focus on technological solutions that are often ignored in performance based programs.

The program will target multifamily projects in a demonstration project venue that explore the evaluation and incorporation of many of the following elements.

- Sustainable project sites
- Increased levels of energy performance incorporating renewable technology
- Water efficiency
- Materials and resource, waste reduction and efficient use of materials
- Indoor environmental quality

2. Administrative Activities

   Administrative activities include general program management, reporting, budget planning and program tracking.

   During the first quarter of 2006, Southern California Gas program administration developed and refined the program database to address the new program elements and changes to the program.

3. Marketing Activities

   Marketing activities include direct and indirect program promotion that includes developing of program collateral materials and delivery, program presentation at training classes and conference presentations.

   During the first quarter of 2006 the program's Agreement, information sheets and participant handbook were developed and made available to customers through direct contact or through the company internet site.

   Training classes offered during the first quarter included:

   - **Residential Load Calculations and Equipment Selection**
     This class reviews residential load calculation methods. Participants learn how to use the load worksheets, how to use reference tables and how to calculate the infiltration load

   - **Introduction to ACCA Manual J: Residential Load Calculation and Equipment Selection**
     This class instructs in methods to calculate the residential load and the infiltration load utilizing the ACCA Manual J. Instruction is given in the use of the Manual J workbook and worksheets as well as using manufacturer's cooling capacity sheets to select equipment. Instruction is also given in calculating the required CFM based on cooling load. This class is required before attending the **Introduction to ACCA Manual D: Residential Duct Design** course.

   - **Introduction to ACCA Manual D: Residential Duct Design**
     This class focuses on designing residential duct systems according to ACCA Manual D specifications using the ACCA Manual D and duct calculator. The course covers determining the system static pressure and available static pressure, calculating the total equivalent length of duct runs and friction rate

and the sizing of ducts. The course also demonstrates the Wrightsoft Manual D software program

- **High-Efficiency HVAC Troubleshooting**
  This course reviews basic terminology of HVAC systems and discusses the theory of heating efficiency and combustion, cooling efficiency, electrical and air movement. The sessions examines the importance of proper installation of HVAC equipment and minor troubleshooting techniques.

- **2005 Building Energy Efficiency Standards Update**
  This course is oriented toward builders, HVAC contractors and engineers and reviews current changes to the Residential Energy Efficiency Standards. Class topics include: high performance glazing and radiant barrier roof sheathing, duct testing and the Home Energy Rating System (HERS) verification process.

- **Uniform Mechanical Code (UMC)**
  This course reviews changes to the Uniform Mechanical Code as they relate to the basic requirements for installation of central heating and air conditioning systems in residential applications. Topics covered include combustion air, venting, closet installations and attic installations of HVAC equipment.

Total class attendance was 109.

Presentations were made at contractor meetings held at the Energy Resource Center that reviewed insulation installation methodologies and heat/cooling system design.

4. Direct Implementation Activities
   Direct implementation activities include presentations to potential program participants, program enrollment, qualification, verification and incentive processing.

   Southern California Gas Company's program is principally promoted to the building industry through direct contact by a team of account executives. During the first quarter, significant activity occurred to determine potential program participants. During December 2005 a number of projects were qualified for program participants and during the first quarter of 2006 these projects were qualified for participation.

5. Program Performance/Program Status
   Program is on target to achieve energy savings goals.

6. Program Achievements
   During the first quarter of 2006 22 projects were enrolled in the program representing 4758 units.

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7. Changes in program emphasis, if any, from previous quarter (new program elements, less or more emphasis on a particular delivery strategy, program elements discontinued, measure discontinued, budget changes, etc.).

   None

8. Discussion of near-term plans for program over the coming months (e.g., marketing and outreach efforts that are expected to significantly increase program participation, etc.)
   During the first quarter of 2006 development of the Advanced Home Demonstration Projects elements were refined. Contact with the design community has produced some potential candidates. During the second quarter further contact will be undertaken to develop the pool of potential projects.

9. Changes to staffing and staff responsibilities, if any

   None

10. Changes to Contacts

    None

11. Changes to Contractors and Contractor Responsibilities

    None

12. Number of Customer Complaints Received

    None.

13. Revisions to Program Theory and Logic Model
    Provided in February 1, 2006 concept paper.

    None