BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

In the Matter of the Application of Southern California Gas Company (U 904 G) for Approval of Program Year 2003 Low-Income Assistance Programs and Funding.	Application 02-07-001 (Filed July 1, 2002)
Application of San Diego Gas & Electric Company (U 902 E) for Approval of Program Year 2003 Low-Income Assistance Programs and Funding.	Application 02-07-002 (Filed July 1, 2002)
Application Of Pacific Gas And Electric Company (U 39 M) For Approval Of The 2003 California Alternate Rates For Energy and Low-Income Energy Efficiency Programs and Budget.	Application 02-07-003 (Filed July 1, 2002)
Southern California Edison Company's (U 338-E) Application Regarding Low-Income Assistance Programs for Program Year 2003.	Application 02-07-004 (Filed July 1, 2002)
Order Instituting Rulemaking on the Commission's Proposed Policies and Programs Governing Low-Income Assistance Programs.	Rulemaking 01-08-027 (Filed August 23, 2001)

ASSIGNED COMMISSIONER'S RULING SEEKING COMMENTS ON THE ATTACHED REPORT ENTITLED "ENERGY DIVISION EVALUATES & RECOMMENDS IMPROVEMENTS TO THE LOW-INCOME ENERGY EFFICIENCY PROGRAMS"

During the months of September through November 2002, Energy Division staff inspected both Low Income Energy Efficiency (LIEE) and Natural Gas Appliance Testing (NGAT) sites of the four major Investor Owned Utilities (IOUs); Southern California Edison Company (SCE), Pacific Gas and Electric Company (PG&E), San Diego Gas and Electric Company (SDG&E) and Southern California Gas Company (So Cal Gas). Over the last several years, the Commission adopted many major changes to the LIEE program and ordered the joint utilities to conduct a NGAT Study. For the study, homes were selected throughout the service territories of all the above named utility companies.[1]

The purpose of the site visits by the Energy Division was to determine if the weatherization measures installed were in compliance with the new procedures described in the statewide Installation Standards Manual and the statewide Policy and Procedures Manual.[2] In addition, Energy Division verified that NGAT testers followed the NGAT study data template and recorded the data properly. The purpose of these site visits was not so much as to change the method of operation of these utilities in the application of their respective LIEE programs, but to see if there were some areas where improvements could be made to make the LIEE program more effective. Based on its observations of a limited number of its site visits, the Energy Division developed recommendations for improvements to the LIEE program.

Attached to this ruling is the Energy Division's report, entitled "Energy Division Evaluates & Recommends Improvements To The Low-Income Energy Efficiency Programs," dated September 2, 2003. I have considered Energy Division's concerns and request that the utilities should work with the Energy

[1] D.01-03-028, ACR November 13, 2001, and ACR February 19, 2002.

[2] WIS Manual June 1, 2001 and P&P Manual December 27, 2001

Division and submit comments within 20 days from the date of this ruling. Comments from other parties are also due within 20 days from the date of this ruling. Reply comments are due within 10 days after the end of initial comments date.

All comments required by this ruling shall be filed at the Commission's Docket Office and served electronically on all appearances and the state service list in the above Applications and Proceedings. Service by U.S. mail is optional, except that one hard copy shall be mailed to Judge Meg Gottstein at P.O.Box 210, Volcano, CA 95689. In addition, if there is no electronic mail address available, the electronic mail is returned to the sender, or the recipient informs the sender of an inability to open the document, the sender shall immediately arrange for alternate service (regular U.S. mail shall be the default, unless another means--such as overnight delivery—is mutually agreed upon). The current service list for this proceeding is available on the Commission's web page, www.cpuc.ca.gov.

IT IS SO RULED.

Dated October 2, 2003, at San Francisco, California.

/s/ CARL WOOD
Carl Wood
Assigned Commissioner

PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

ENERGY DIVISION EVALUATES & RECOMMENDS IMPROVEMENTS TO THE LOW-INCOME ENERGY EFFICIENCY PROGRAMS

Sarv Randhawa

ENERGY DIVISION
California Public Utilities Commission
505 Van Ness Avenue
San Francisco, Ca. 94102

Dated: September 2, 2003

TABLE OF CONTENTS

SUMMARY OF STAFF FINDINGS

Energy Division finds LIEE program and NGAT survey to be effective and in general compliance with the statewide Installation Standards and Policy and Procedures manuals. However, there are considerable differences among the IOU's in quality of workmanship. Additionally, there are areas where improvements can be made and new weatherization measures added to improve the program outreach and effectiveness. Energy Division offers this additional information and recommendations in light of the recent joint utilities' filings on measure assessment and the NGAT Study.

During the months of September through November 2002, the Energy Division Staff undertook to inspect both Low Income Energy Efficiency (LIEE) and Natural Gas Appliance Testing (NGAT) sites of the four major Investor Owned Utilities (IOUs); Southern California Edison Company (SCE), Pacific Gas and Electric Company (PG&E), San Diego Gas and Electric Company (SDG&E) and Southern California Gas Company (So Cal Gas). Over the last several years, the Commission adopted many major changes to the

LIEE program and ordered the joint utilities to conduct a Natural Gas Appliance Testing (NGAT) Study. For the study, homes were selected throughout the service territories of all the above named utility companies.[3]

The purpose of the site visits to these homes by the Energy Division was to determine if the weatherization measures installed were in compliance with the new procedures described in the statewide Installation Standards Manual and the statewide Policy and Procedures Manual.[4] In addition, Energy Division verified that NGAT testers followed the NGAT study data template and recorded the data properly. Based on its observations, Energy Division developed recommendations for improvements. The following are the findings based on twenty-one site visits:

- In general, the overall installation of the measures appeared to be satisfactory and in conformance with the current statewide weatherization standards and the policy and procedures manual. However, there were considerable differences among IOUs as to the number of post-weatherization inspections and the quality of workmanship.

- NGAT testing by Richard Heath and Associates, in all IOUs service territories for the Phase IV NGAT study was comprehensive and the technicians appeared to be following the NGAT protocol, which included collecting the correct data and conducting the appropriate tests. The NGAT technicians were also responsible for conducting blower door tests in a percentage of the selected homes, and the results seem to indicate that there was a considerable reduction in infiltration after the installation of properly installed measures. All household gas appliances were tested as part of the NGAT surveys, and when required, adjustments and\or repairs were made to the appliances to ensure proper and safe functioning. In some cases the appliance required replacement.

- In PG&E's service territory, there were considerable numbers of installed weatherization measures that failed and required correction in order to meet the statewide standards requirements. Some of the measures that failed were: CVA (combustion ventilation air) requirements, backward installation of filters, door threshold installation failures and unplugged holes in the pipe penetrations. These defects were discovered through post-installation inspections. There appeared to be a lack of training and significant workmanship issues affecting the quality of work being performed by several crews.

- In all service areas, many of the older dwellings visited by Energy Division were constructed with an older type of wiring, which is referred to as knob and tube wiring. A considerable number of these older housing units could not be insulated due to one or more of the following factors: the low income of the occupant and lack of resources, or landlord refusal to hire qualified contractors to replace this type of electric wiring.

- In SCE's service territory, all-electric homes in the high desert area of Hesperia and Victorville were good candidates for the installation of evaporative cooling systems either singly or to complement the existing air-conditioning units. Even though these systems are not most effective above 100-degree temperatures, they can generate savings during all other periods when the temperatures are not so extreme. Due to lack of funding resources, the full potential of energy savings is not being realized. The energy savings potential should be further explored in this high desert area and other similar areas of all IOU's.

---

[3] D.01-03-028, ACR November 13, 2001, and ACR February 19, 2002.

[4] WIS Manual June 1, 2001 and P&P Manual December 27, 2001

- In SCE's service territory, a large number of older homes that were inspected in the Seal Beach area were equipped with electric resistance ceiling strip heating systems. These systems are highly in-efficient and are not best suited for cycling. These systems are old and there is a potential for energy savings if these are replaced with new high-efficiency heat pumps and this potential should be explored. Both the unitary and split systems show promise as a replacement unit for the resistance strip heating systems.

- Some of the non-English speaking homeowners indicated that they did not use the home's heating systems due to unfamiliarity with their home heating controls and technology.

- In So Cal Gas service area, due to the neglect of the exterior of some homes by the homeowner associations, some of the weatherization measures could not be installed.

- Some landlords poorly maintained some of the rental units such as, an exhaust of clothes dryer vented into conditioned space rather than to the outside through a wall or a ceiling opening. Weatherization efforts prior to solving such problems could possibly have created an unhealthy and harmful condition for the tenants. In other instances some of the houses had termite infested outside walls and roof rafters and could have endangered the tenants and the installers in the process of installing the measures.

- The current practice in SDG&E service territory has been that the cooking gas ovens and burners, and water heater burners are inspected only if the owner of the house asks for it or if the CO level observed be the contractor is considered to be high. Inspections of these appliances may improve safety to the LIEE participants. However, if the appliance cannot be adjusted by the technician, the utility will cap off the gas line and red-tag the appliance. The customer will not be able to use that appliance until it is repaired or replaced.

RECOMMENDATIONS

Based on the results of the twenty one site visits, even though limited in number, the Energy Division recommends that additional technical training be provided to crews in an effort to improve the quality of work and language training to augment contractors energy efficiency efforts. Consideration should also be given to 1) safety issues including NGAT testing and thorough assessment of knob and tube wiring, 2) adoption of new measures including solar screens and advanced evaporative cooling, and 3) an increase in the frequency of inspections.

Based on the findings of these sites visits, the Energy Division makes the following preliminary recommendations:

- Of the 21 homes visited by Energy Division, 18 contained combustion appliances including aging and un-maintained furnaces requiring repair. The utilities and the Commission should review the results of the NGAT study and some type of combustion appliance check program should be implemented.

- An additional effort should be made in the LIEE program to fully assess the issue of unsafe knob and tube wiring in those homes that are eligible for weatherization measures under the LIEE program. There appears to be a considerable potential for energy savings if these houses could be safely insulated. One possibility could be to explore the availability of other funds or programs that could be used to assist the LIEE participants in hiring qualified contractors to address this issue.

- Prior to conducting any whole-house infiltration tests, the weatherization contractors should conduct a thorough inspection of heating and cooling system ducts. Any openings in the duct

systems will adversely affect the outcome of the infiltration tests and will provide erroneous results. Inspection of ducts in homes with forced air systems should become a routine component of each utility pre-weatherization assessment protocol.

- The number of post-weatherization inspections in the PG&E service territory should be increased due to a considerable number of post-weatherization inspection failures.

- The workmanship of most of the crews should be improved, and may be accomplished through the thorough training of weatherizaion measures installers. This remediation action should be closely scrutinized in all IOU service territories and particularly in the PG&E service area, which had a large number of inspection failures. The education and training of these installers should be more detailed and comprehensive.

- As a new measure, retractable Solar Screens should be explored as a measure to offer to homeowners in cooling-load dominated climates to reduce solar gain during the summer months as the houses heat up rapidly from the sunlight coming through the windows.

- The final decision about natural gas appliance testing in the LIEE program should include checks for proper operation and safety as a standard practice for all gas appliances in the conditioned space, including gas-stove ovens, cook top burners, and water heater burners.

- An increase in the installation of evaporative cooling systems should be explored for use in high desert areas such as Hesperia and Victorville. These areas have all electric homes with air conditioning systems that use considerable amounts of electrical energy. While these coolers are generally not too effective when temperatures exceed 100 degrees, LIEE participants could possibly benefit from using these coolers and reduce their electric bills during times when temperatures do not exceed 100 degrees. (Note; since the initial draft of this document advanced evaporative cooler units which are much more efficient, have been introduced to the weatherization programs. These units might serve the needs of clients in areas where the temperatures exceed 100 degrees and should be given consideration.)

- The ceiling electrical strip-heating systems as installed in the older homes in Seal Beach complex appear to be highly inefficient. High efficiency heat pumps should be explored for addition as a standard measure for homes with ceiling electric strip heating systems.

- The energy education component of the LIEE program should include proper operation and safety of all appliances, especially combustion appliances in the native tongue of the LIEE participant.

- An extra effort should be made in the outreach program to fully educate and inform recent non-English speaking immigrants as well as seniors about the home technologies in order for them to feel comfortable in the use of those technologies, and thus to enhance their quality of life.

- A conversational Spanish course should be given on an urgent basis to those involved in LIEE program that are frequently in contact with the Spanish-speaking communities to improve communication and to enhance the effectiveness of the LIEE program.

DISCUSSION

Energy Division Staff site visits included varied geographic regions, varied demographic areas as well as different types of housing, such as single family, multi-family, and farm housing.

In order to investigate compliance of LIEE installation measures and the application of the NGAT study in the Phase IV Standardization Project, the Energy Division staff commenced ride-alongs with the IOUs inspectors and third party weatherization measure installers. The site visits were conducted throughout the

state in different regions taking into account as much as possible the diversity in climate, population and housing. A total of twenty-one site visits were conducted. For each of the utilities serving gas and electric, three sites visit for NGAT and three regular LIEE weatherization installation visits were conducted. For the all-electric utility SCE, only three visits for regular LIEE installation of measures were conducted.

For the statewide NGAT study, Regional Economic Research (RER) is the prime contractor and Richard Heath and Associates (RHA) is the subcontractor responsible for conducting the pre- and post weatherization NGAT tests. Each utility is responsible for the installation of measures, and subcontractors performed the actual work. For regular LIEE weatherization work, each utility subcontracts the installation of measures to third party contractors.

Each utility is unique in its approach in the administration and inspection of LIEE programs. Some IOU's such as SDG&E and So Cal Gas have subcontracted out the administration while others including PG&E and SCE have subcontracted out the inspection portion of the program. Some of the IOUs perform a hundred percent of the post-installation inspections such as SDG&E, while others such as PG&E performs post-installation inspections on only twenty percent of the participating homes. There is no standardized method for inspections consistent for all IOUs and each utility has its own unique method of operation rooted in its own experiences and history. However, standardization of these methodologies will be revisited during Phase 1V of the LIEE standardization project. Specifically, the NGAT study, which is in its final stages and is designed to assist the Commission to establish a standardized method.

The purpose of these site visits was not so much as to change the method of operation of these utilities in the application of their respective LIEE programs, but to see if there were some areas where improvements could be made to make the LIEE program more effective.

Among a variety of sites visited, there were single-family homes, multi-family homes, and agricultural migrant farm workers homes. Owners occupied some homes, while others were renters. Most of the single-family homeowners were older people on fixed income and qualified under the LIEE program. There were some homes where the English language was not the primary language of the household. Due to the diverse nature of our citizens in the state, different sets of problems were identified for each segment. In one instance the homeowner spoke Spanish only and was afraid to use the heating system thermostat due to his unfamiliarity with the technology. An outreach and education in Spanish language could have helped this household develop confidence in technology and its use.

Overall, the LIEE program appeared to be fairly effective and in general the contractors installing the weatherization measures were following the installation standards and policy and procedures established. However, in some cases the quality of the installed measures was not consistent and needs to be improved. This report has identified some of the problems and has made some preliminary recommendations to enhance the effectiveness and quality of the program. The customer education aspect of the LIEE program was not addressed in this report since it is covered in the pre-installation section of the measures. The Energy Division primarily focused its attention on the post-installation inspections of measures. Following is a brief description of each of the site visits.

SITES VISIT SUMMARY

SITES: The site visits were conducted on two consecutive days on September 26 and 27, 2002.

1. Maywood, Ca. (SCG / SCE)
2. Downey, Ca. (SCG / SCE)
3. San Diego, Ca. (SDG&E)
4. San Diego, Ca. (SDG&E)

DESCRIPTION:

1. This house was approximately 1200 sq.ft. Stucco house. Both inside and outside appeared to be well kept. A single mother with 3 childern occupies the house and qualifies under the current LIEE program. The attic of the house is not insulated and old Knob and Tube wiring crisscrosses the attic. A wall-gas furnace heats the home and the water heater is outside the

house in a very small closet. The front door and the back door were hollow core and there was no weather-stripping to prevent air infiltration into the house. The water faucets were not fitted with aerators. The Maravilla Foundation is the prime contractor to Southern California Gas Company and Southern California Edison Company for installing the weatherization and energy efficiency measures. The contractor installed two solid core doors, two weather-stripping kits, caulked two doors, and installed two water faucet aerators and two electrical switch gaskets. An insulating water heater blanket could not be installed in the outside water closet due to lack of adequate space. The refrigerator was less than ten years old and was not replaced. The overall installation of the measures appeared to be satisfactory and in conformance with the weatherization standards. The weatherization installation standard requires that in the case of knob-and-tube wiring, insulation which encapsulates knob and tube wiring shall not be installed when prohibited by local code. Also, attics with knob-and-tube wiring shall not be insulated unless the wiring has been surveyed by an electrical contractor and certified by a C-10 electrical contractor licensed by the State of California. It appears to me that a resident under LIEE program would not have the economic means to hire an independent electrical contractor and as a result would loose potential gains to be achieved in energy efficiency through attic insulation.

2. This was approximately 1150 sq. ft. Stucco house occupied by a family that was renting this house. Both the inside and outside were well kept. The house was conventionally wired. The attic was not insulated. The contractor (Maravilla Foundation) assessed the house and required weatherization measures that included loose fill R-19 insulation in the attic, two doors one front and one back, one refrigerator replacement, two door weather-stripping kits, two water faucet aerators, two electrical switch gaskets. The loose fill insulation was blown in and the overall installation of all the measures looked satisfactory and in conformance with the installation standards. The existing water heater was new and did not require any insulation blankets.

3. Site 3 was undergoing NGAT testing in addition to the installation of LIEE measures. A senior lady in her 80's occupies site 3 and the house looked well kept. The contractor RHA (Richard Heath and Associates) identified the following measures: two weather-stripping, one caulking, one water heater blanket, one low flow showerhead, ten ft. of water heater pipe wrap, twenty five electrical outlet gaskets, two faucet aerators. The refrigerator was fairly new and was not replaced. The house was cooled with an air-conditioning unit. The attic was approximately 900 sq.ft. and already had R-17 insulation. The overall installation of the measures installed looked satisfactory and in conformance with the installation standards. NGAT measurements were recorded properly on the study forms. All gas appliances were functioning properly and readings were within the safe operating limits.

4. Site 4 was also undergoing NGAT testing in addition to the installation of weatherization measures. The occupant of this house is an older lady in her 80's. The house looked well kept inside and outside. RHA identified the following measures: two weather-stripping kits, one caulking, one water heater blanket, ten ft of water heater pipe wrap, twenty five electrical outlet gaskets, and two water aerators. The house had existing R-19 insulation. The refrigerator was fairly new and did not need replacement. An air conditioning unit cooled the house. The old gas burning space wall-heater appeared be in-adequate and in- efficient for the house. All gas appliances were operating properly and safely after some adjustments by RHA technician. All NGAT measurements seemed properly recorded on the study forms. The overall installation of the measures installed looked satisfactory. It appears that the replacement of existing wall heater could add to the comfort and safety of the homeowner as well as bring about some savings to the owner with the installation of a high efficiency gas heater. Current standards permit repair or replacement only if furnace is malfunctioning.

SITES: The site visits were conducted in September and October 8th and 9th, 2002.

1. Corning, Ca. (PG&E)
2. Corning, Ca. (PG&E)
3. Chico, Ca. (PG&E)
4. Yuba City, Ca. (PG&E)

5. Yuba City, Ca. (PG&E)
6. Vallejo, Ca. (PG&E)

DESCRIPTION:

1. This house was a small wood frame ranch style home approximately 1500 sq.ft. Both inside and outside appeared to be fairly well kept given the age of the occupants. An older Spanish-speaking couple in their early eighties occupies the house and qualifies under the current LIEE program. PG&E had a Spanish-speaking inspector accompanying us. The house once had a flat roof that has been converted to a pitched roof with a small attic. A wall-gas furnace heats the home and the gas water heater is inside the house in an enclosed porch next to the kitchen. RHA (Richard Heath and Associates) is the prime contractor for NGAT and Western Insulation is the prime contractor for installing the weatherization measures. The water heater area had a high concentration of leaking natural gas that was identified by RHA and was due to leaking shut-off valve to the heater. A new shut-off valve was installed to rectify the problem. The contractor installed the following measures: ninety feet of caulking, three doors weather stripping, one Evaporative Cooler cover, three wall repairs, six Foam wall patches, one CVA register, fifteen utility gaskets, one faucet aerator, one shower head, two CFL's, and 765 sq. ft. of attic insulation. An insulating water heater blanket was not needed because the existing water heater was already an energy efficient unit and was fairly new. The homeowner applied for but did not qualify to receive a new refrigerator because the existing refrigerator was not older than ten years. RHA tested all gas appliances and took measurements for NGAT Survey and recorded them properly in the forms. The stove oven reading of CO was reduced from 48 ppm to 18 ppm after adjustment of the burner and was thus in the acceptable limits. All gas systems seemed to be functioning properly. All CO and natural gas measurements were within the acceptable levels. Since the water heater was within the enclosed porch of the living space and it did not meet the CVA requirements, a new register was installed in the ceiling in accordance with the standards. RHA tested for the whole house infiltration level before and after the installation of the weatherization measures. There was a considerable reduction in the infiltration from 3350 cfm to 2100 cfm. The overall installation of the measures appeared to be satisfactory.

2. This house was also a small wood frame ranch style home approximately 1500 sq.ft. Both inside and outside appeared to be fairly well kept. An older English speaking couple in their early seventies occupies the house and qualifies under the current LIEE program. RHA (Richard Heath and Associates) is the prime contractor for NGAT and the Western Insulation is the prime contractor for installing the weatherization measures. There were no gas leaks identified in this house. The contractor installed the following measures: approximately 50 feet of caulking, three door weather stripping, one attic access hatch weather stripping, two wall repair patches, eighteen utility gaskets, three faucet aerators, one evaporative cooler cover, one furnace filter, and four CFLs were installed. An insulating water heater blanket was not needed because the existing water heater was already an energy efficient unit and was fairly new. The homeowner applied for but did not qualify to receive a new refrigerator because the existing refrigerator was not older than ten years. RHA tested all gas appliances and took measurements for NGAT Survey and recorded properly in the required study forms. All gas systems seemed to be functioning properly. All measurements were within the acceptable levels. RHA discovered that there was considerable infiltration through an approximately two-inch opening in the air conditioning box located outside the house. For the whole house infiltration measurement, hole was plugged with tape and infiltration was measured. There was a considerable reduction in the infiltration from 2610 cfm to 2475 cfm. The overall installation of the measures appeared to be satisfactory. It is recommended that a thorough inspection of heating and cooling system ducts be conducted for leaks prior to conducting any system tests.

3. This house in Chico was a single-family wood-frame house rented to a disabled single English-speaking mother in her fifties with two children. This house was not under NGAT program and standard measures were installed. The following measures were installed: one attic access hatch weather stripping; eight caulking; four CFL's; two CVA vents; three door weather-stripping; two faucet aerators; one furnace filter; one shower head; three utility gaskets; nine window sashes;

and one Evaporative Cooler cover. The installation of the following measures failed the inspection: attic access weather stripping; caulking; CFL's and utility gaskets. The CVA vents requirements were not met and as a result it was noted as a hazardous failure. The utility gaskets were not installed and the CFL's were not provided. The CVA required hundred sq.in. of vent space instead of the seventy-eight inches installed. The refrigerator was relatively new and was not replaced. The Energy Partners installed the weatherization measures, and PG&E inspected the post-installation. The overall installation of the measures installed was unsatisfactory. PG&E will request the contractor to complete the deficiencies to their satisfaction. Since PG&E inspects only twenty percent of the sites, it is recommended that the number of inspections of sites be increased considerably and PG&E's training of the installers is more thorough and comprehensive.

4. This site was a townhouse in a housing complex in Yuba City. The complex is owned and operated by Sutter County as housing for migrant workers. This townhouse was not under NGAT program and standard measures were installed. A Spanish speaking family lived in this unit. The following measures were installed: one attic access hatch weather stripping; thirty two linear feet of caulking; five CFL's; one CVA vent; two door weather-stripping; one faucet aerator; one furnace filter; one shower head; one door threshold; and twenty utility gaskets. The refrigerator was fairly new and was not replaced. A wall- mounted unit cooled the house. This was a post-installation inspection. The water heater was located in a small closet on the upper floor. The upper vent to the closet water heater was totally blocked and was not cleaned thus creating a hazardous condition. The PG&E inspector noted this as a failure. In addition, the door weather strippings, caulking around the pipe, threshold installation and the installation of utility gaskets all failed inspection and were also noted as hazardous failures. The furnace filter was installed backwards and failed the inspection. I recommend that the training for weatherization measure installers should be more thorough and the inspection frequency by PG&E should be increased.

5. This site was in the same complex as number four above. This townhouse was also not under NGAT program and standard measures were installed. A Punjabi speaking family lived in this unit. The refrigerator was not older than ten years and was not replaced. A wall mounted air conditioning unit cooled the house. The following measures were installed by the Energy Partners: one kitchen sink drain line caulking, five CFL's, two door weather-strippings, two faucet aerators, one furnace filter, one shower head, and twenty utility gaskets. A post-installation inspection was also performed on this unit. On inspection, the kitchen drain line fell through and was declared as caulking failure. The door weather strippings and threshold installations were also noted as failed measures. PG&E will notify the Energy Partners to correct the failures. PG&E also checked all gas appliances for operation and noted that the oven was operating at 198 PPM. After adjustments to the gas burners in the oven, the CO level was reduced to 95 PPM and was approved for operation. After adjustments, there were no hazardous failures noted at this site. Given the number of failures in the installation of weatherization measures installed by contractors, it is recommended that PG&E inspection program level be increased and thorough training of the installers be undertaken.

6. This house was a two story wood frame of approximately 1000 sq. ft. area. An older woman in her late 70's and her granddaughter occupy the house. This house was not well taken care of. The house was undergoing the NGAT survey. The parties involved in the installation of measures and testing were PG&E, Richard Heath and Associates (RHA) and the Energy Partners. The weatherization measures installed were: door and weather-stripping installation, low flow showerhead installation, faucet aerator installation, window caulking and CVA vent installation. The NGAT survey revealed that the gas-stove vent was not operational. All gas appliances were tested for proper operation and were adjusted to reduce the CO readings to acceptable levels for safety. However, there is a concern that if for some reason in the winter time the gas heater of the house becomes inoperable, there is the possibility that the owner who is an older person, might turn the stove on to heat the house thus creating a dangerous situation because of combustion air requirements.

SITES: The site visits were conducted on two consecutive days on October 22nd and 23rd, 2002.

1. San Diego, Ca. (SDG&E)
2. El Cajon, Ca. (SDG&E)
3. El Cajon, Ca. (SDG&E)
4. San Ysidro, Ca. (SDG&E)

DESCRIPTION:

1. This house is a single story with four bedrooms and two baths wood-frame structure with outside Stucco walls and is approximately 1300 sq.ft. A middle- aged single mother occupies the house with her child and qualifies under the current LIEE program. The house is undergoing a basic NGAT survey exclusive of data logger and CO alarm installation. The house is heated by one floor furnace and one wall furnace. Both of these furnace heaters are controlled from a single thermostat. The wood-burning fireplace had no damper and no gas supply and was only ornamental and was not vented. RHA (Richard Heath and Associates) is the prime contractor for NGAT and MAAC (Metropolitan Area Advisory Committee) is the prime contractor for installing the weatherization measures. In its Initial Client Interviews, RHA was informed that there was gas odor present in the house. RHA technician opened up both of the furnaces and discovered that the old floor-furnace had a completely rusted exhaust hood. RHA ordered a new exhaust hood manufactured and will continue with its NGAT study after the installation of the exhaust hood and adjustment of the floor furnace. RHA also cleaned and adjusted the wall furnace heater prior to testing. RHA also discovered that the stove vent was partially blocked but the stove was still operable and safety was not compromised. The water heater for this house was located outside the house and was fairly new with an R-value of 19 and did not require an insulating water heater blanket. This house is wired with knob and tube wiring and cannot be insulated because of the city of San Diego building code requirements. The value of the existing insulation in the attic is R-8. The contractor installed the following measures: twenty ft. of caulking, one new door and weather stripping, two broken window glasses were replaced, six utility gaskets, three faucet aerators, and two shower heads. The existing refrigerator was not older than ten years and did not need replacement. RHA tested all gas appliances and took measurements for the NGAT Survey and recorded them properly in the study forms. All gas systems seemed to be functioning properly and the CO levels recorded were within the acceptable limits. The overall installation of the measures appeared to be satisfactory and in conformance with the statewide installation standards and the NGAT protocol.

2. This house in El Cajon was a small cinder-block home approximately 1000 sq.ft. Both inside and outside did not appear to be well kept. A middle-aged Spanish-speaking renter occupies the house and qualifies under the current LIEE program. A post-installation inspection of the site was performed. Western Insulation is the prime contractor for installing the measures. The contractor installed the following measures: thirty-two feet of caulking, two solid core new doors and two door weather strippings, four CFL's, two new door locks, one shower head, one faucet aerator, one door threshold. The installation of insulating water heater blanket was not feasible because of the space limitation around the water heater. The 576 sq.ft. of attic space of this house is insulated with an R-value of 7. The ceiling of the house is supported by a thin plywood material and thus might not be able to support an additional weight of the new insulation if installed. Thus the house was not provided with new insulation. The homeowner applied for and received a new refrigerator replacing an older inefficient unit. The gas stove was not vented. All gas systems seemed to be functioning properly. The renter complained that the contractor had missed his appointments three or four times and was creating a hardship for him because he is employed and can't afford to be at home all the time. This was brought to SDG&E's attention and the IOU will look into the matter.

3. This house in El Cajon was a single-family wood-frame house owned by an older woman in her mid 70's. This house was not under the NGAT program and standard measures were installed. The following measures were installed: two new solid-core doors with weather stripping and locks, two door shoes, ten-feet of caulking, two CFL's, one water heater insulating blanket and

six outlet gaskets. The customer refused installation of new water aerators. The house attic-space is unfeasible to insulate because of low clearance. The existing insulation value in this 720 sq.ft. attic space is R-15. A post-installation inspection was performed by SDG&E. The overall installation of the measures was satisfactory and the owner of the house was very satisfied.

4. This site was a relatively new three bedrooms and two bathrooms townhouse with tiled roof in a housing complex in San Ysidro. The house was only two years old. This townhouse was not under NGAT program and standard measures were installed. A Spanish speaking older woman in her 70's rented this house. The following measures were installed: one set of weather stripping, three linear feet of caulking, two shower heads, nine outlet gaskets, four faucet aerators, nine outlet gaskets, and four faucet aerators. A post-installation inspection was performed by SDG&E. The SDG&E inspector noted that because the house was only two-years old, it did not require new weather stripping and therefore SDG&E shall ask the contractor to refund the cost of installation of this measure. The remaining measures were satisfactory and all the gas appliances were relatively new and in proper working order.

SITES: The site visits were conducted on four consecutive days on November 19th thru 22nd, 2002.

1. Hesperia, Ca. (SCE)
2. Seal Beach, Ca. (SCE)
3. Seal Beach, Ca. (SCE)
4. San Juan Capistrano, Ca. (SC Gas)
5. San Juan Capistrano, Ca. (SC Gas)
6. Riverside, Ca. (SC Gas)
7. Riverside, Ca. (SC Gas)

DESCRIPTION:

1. This house was a 3 bedroom, 2-bath ranch style all electric stucco house with approximately 1000 sq.ft. and is located in a high desert area with extreme temperatures. An older disabled person lived with his daughter and qualified under the current LIEE program. The attic of the house is insulated, however, the attic hatch was not insulated. The Tri State Home Improvement Co. is the contractor that installs the measures for SCE in this area. The following measures were installed: one threshold and shoe, two broken window glasses replaced, attic hatch insulated and sealed, three sliding glass doors sealed, one Evaporative Cooler installed to augment the central air conditioning unit in order to save energy and reduce the homeowner's electric bill, one electric water heater blanket and pipe wrap, all windows and doors were caulked and low flow shower heads and faucet aerators were installed. Due to dry heat with low humidity during summer months, this area is ideally suited for providing evaporative cooling systems in order to reduce energy usage and it is recommended that this measure be expanded. In addition, if retractable solar screens are provided, there could be considerable gains achieved in energy conservation. The overall installation of the measures appeared to be satisfactory and in conformance with the weatherization standards.

2. This was approximately 750 sq. ft. one bedroom and one bath wood frame all electric house located in a senior housing complex in Seal Beach in SCE territory. The owner is an elderly lady on fixed income and qualified for the LIEE program. Both inside and outside were well kept. The house was conventionally wired and there is a strip-electric heating system in the attic. The attic was insulated with R-19 insulation. The contractor (Reliability Energy Management, Inc.) installed the measures that included one electric water heater, two switch and outlet gaskets, one handheld showerhead, one water heater wrap, two water faucet aerators, one threshold and shoe, four relampings, and one hardwired fixture. The overall installation of all the measures looked satisfactory and in conformance with the statewide installation standards. A wall air-conditioner cooled this house. The ceiling strip-heating system seems to be highly inefficient and its replacement with a mini heating and cooling system could result in considerable energy savings. According to Reliability Energy Management Inc. approximately twenty percent of the housing in this very large complex has already been converted to such systems, however eighty percent of the homes still have ceiling strip-heating systems.

3. This was an approximately 850 sq.ft. one-bedroom, one-bath, wood-frame, all- electric house located in the same senior housing complex in Seal Beach in SCE territory as number 2 above. The owner is an elderly woman in her late 70's on fixed-income and qualified for the LIEE program. Both inside and outside were well kept. The house was conventionally wired and there is a strip-heating system in the attic. The contractor (Reliability Energy Management, Inc.) installed the measures that included one electric water-heater, two switch and outlet gaskets, one handheld showerhead, one aerator, one water-heater wrap, one door weather-stripping, one hard-wired fixture installed, four relampings and all doors and windows were caulked to reduce infiltration. The overall installation of all the measures looked satisfactory and in conformance with the statewide installation standards. This house had no air conditioning system. As in the item 2 above, the ceiling strip-heating system seems to be highly inefficient and its replacement with a mini heating and cooling system could save considerable energy. Approximately twenty-percent of the housing in this complex has already been converted to such systems; however, eighty-percent of the homes have a considerable potential for energy savings through such a

conversion. I recommend that a study be undertaken to assess the feasibility of converting strip-heating systems to an alternative heating and cooling system and increase the energy savings.

4. Sites 4, 5 and 6 were undergoing NGAT testing in addition to the installation of measures. RHA is the prime contractor for the NGAT program and Maravilla Foundation is the prime contractor to SC Gas Company for the measures installation. A Spanish-speaking single mother with 3 childern is the owner of this approximately 1000 sq.ft. 3-bedrooms, 2-bath, two-story condominium unit in a large complex of condominiums. The water heater is located in the garage downstairs. The kitchen is equipped with a gas stove with oven and a second gas oven above with an exhaust hood with an electric fan. Both of these gas ovens recorded very high levels of CO in its pre- and post- weatherization tests. These units are approximately forty years old and RHA recommended that they be replaced. The water heater was older than ten years and was recommended by RHA to be replaced. The forced-air furnace was thermostatically controlled and was not functioning properly due to a defective transformer. The motor for the exhaust hood fan was not working and if turned on there was fire hazard due to accumulated grease and other combustibles. SC Gas Company informed the occupants that they would either repair the fan or replace it. In addition to the NGAT findings, the following measures were installed: pipe insulation; low- flow showerheads, switch/outlet gaskets and faucet aerators. The overall installation of all the measures looked satisfactory and in conformance with the statewide installation standards. The threshold and the part of the front-door jamb were very seriously eaten away by the termites and there was a possibility that there was a structural damage to the outside wall interior. Due to additional risk to the front door area no weatherization measures were installed to the front door. The owner of the house indicated that the Home Owners Association had known about this termite problem since 1999. It appeared from the inspection that the termite damage had been painted over. The homeowner indicated that they did not use the heating systems due to unfamiliarity with the technology. I recommend that an extra effort be undertaken to educate and inform non-English speaking recent immigrants and some seniors and others, about the home technologies in order to enhance their comfort and quality of life

5. This condominium is about the same size and located in the same large complex of condominiums as 4 above. The homeowner of this house is a Spanish-speaking single mom with four children. RHA is the prime contractor for the NGAT program and Maravilla Foundation is the prime contractor to SC Gas Company for the weatherization measures installation. The NGAT survey discovered the following defects; the stove oven was not operational, the kitchen exhaust hood fan was not operational, and the oven was not marked as to how to operate the oven. The range was to be repaired and if it were not possible to repair, the range would be replaced. The water heater was older than ten years and will be replaced. The exhaust hood motor will be replaced. There was termite damage to the doorjamb and the threshold, which the homeowner would have to request the Home Owners Association to correct prior to any weatherization measures installation. In addition to the NGAT measures the conventional weatherization measures included low flow showerheads, switch/outlet gaskets, and faucet aerators. The infiltration measures were not installed due to termite damage and the possibility that the damage was extensive and could involve structural outside walls. This homeowner also did not know how to use the thermostatically controlled forced-air heating unit due to her unfamiliarity with the home heating controls and technology.

6. The occupant of this house is a renter living with six other family members. This is an approximately 500 sq.ft. two bedrooms and one bath wood-frame stucco house with an adjacent porch with water heater and laundry facilities. The house is heated with an old gas wall furnace. The gas furnace was beyond repair and needed replacement. The clothes dryer was vented inside the enclosed porch creating an unhealthy and possibly harmful situation. SC Gas Company will either repair or replace the wall heating furnace, will vent the laundry dryer to the outside through the outside wall, and provide a ceiling vent to the attic to meet the combustion vent air requirements. The water heater located inside the enclosed porch had insufficient combustion air thus adding to the problem above of the clothes dryer. RHA is the primary contractor for the NGAT and the Maravilla Foundation is the prime contractor for the installation of weatherization

measures. In addition to the defects pointed out in the NGAT survey, the other weatherization measures to be installed were: door weather stripping, water heater blanket, pipe insulation, low flow shower heads, switch/outlet gaskets, one solid core door installation and faucet aerators. The electrical service to this house is provided by the Riverside Municipal Utility District and for the replacement of the old refrigerator, the customer will be referred to the Riverside Municipal Utility District. All NGAT measurements seemed properly recorded in the forms. From the appearance of this house and its existing appliances, it seemed as if the owners had let the property run down and it could have possibly created an unhealthy, and harmful condition for the tenants.

7. This site was 3-bedrooms, 2-baths house that underwent a post-installation inspection. The house is occupied by an older person with two other relatives and qualified for the LIEE program. East Los Angeles Community Union was the prime contractor for the installation of the weatherization measures. The measures installed included the following: two new doors with locks and strike plates, replacement of two broken glass windows, installation of a new forced-air heating wall-furnace, weather stripping, replacement of shower heads, and installed faucet aerators. The workmanship observed was of good quality and the homeowners seemed to be satisfied. Since this house is located in the Riverside County and the Municipal district provides the electric service, the tenant was referred to the county for refrigerator replacement.

CERTIFICATE OF SERVICE

I certify that I have by ***electronic***, and by ***U.S. mail,*** served to the parties of record, a true copy of the original attached ***ASSIGNED COMMISSIONER'S RULING SEEKING COMMENTS ON THE ATTACHED REPORT ENTITLED "ENERGY DIVISION EVALUATES & RECOMMENDS IMPROVEMENTS TO THE LOW-INCOME ENERGY EFFICIENCY PROGRAMS"*** on all parties of record for proceedings A.02-07-001, A.02-07-002, A.02-07-003, A.02-07-004, R.01-08-027 or their attorneys of record.

Dated October 2, at San Francisco, California.

/s/ SUSIE TOY
Susie Toy

N O T I C E

Parties should notify the Process Office, Public Utilities Commission, 505 Van Ness Avenue, Room 2000, San Francisco, CA 94102, of any change of address to insure that they continue to receive documents. You must indicate the proceeding number on the service list on which your name appears.

* *

The Commission's policy is to schedule hearings (meetings, workshops, etc.) in locations that are accessible to people with disabilities. To verify that a particular location is accessible, call: Calendar Clerk (415) 703-1203.