ALJ/ ec/vdl

Decision 82 07 036 JUL 21 1982

ORIGINAL

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

In the Matter of the Application of SIERRA PACIFIC POWER COMPANY for Authority to implement a Conservation Financing Program and a Conservation Financing Adjustment to its Electric Rates and Charges.	Application 60587 (Filed May 20, 1981)
In the Matter of the Application of SOUTHWEST GAS CORPORATION for Authority to Implement a Conservation Zero Interest Plan and to Establish a Conservation Finance Account to Recover the Cost of the Plan.	Application 60555 (Filed May 15, 1981)
In the Matter of the Application of CP NATIONAL CORPORATION for Authority to: A. Implement a Zero Interest Weatherization Financing Program and to Establish a Conservation Balancing Account to Recover the Cost of the Program, and B. Implement a Residential Conservation Service (RCS) Program and to Establish a Conservation Balancing Account to Recover the Cost of the Program.	Application 60775 (Filed July 28, 1981)

Margaret A. Glodowski, Attorney at Law (Nevada), for Sierra Pacific Power Company; Orrick, Herrington & Sutcliffe, by Robert J. Gloistein, Attorney at Law, for CP National Corporation; Wm. A. Claerhout and Robert J. Coli, Attorneys at Law (Nevada), for Southwest Gas Corporation; applicants.

James M. Westcott, for himself, interested party.

Carl K. Oshiro, Attorney at Law, for the Commission staff.

OPINION

Summary of Decision

The decision authorizes Sierra Pacific Power Company (Sierra), Southwest Gas Corporation (Southwest), and CP National Corporation (CPN) (utilities) to begin new programs which will expand their aid to residential ratepayers in identifying and financing cost-effective energy conservation investments.

The utilities will implement their versions of the federally mandated Residential Conservation Service (RCS). The utilities will provide residential ratepayers with free "energy audits" which will identify for each participating ratepayer weatherization measures which can be installed cost-effectively in his or her home.

The utilities will also expand their programs providing 8% loans to residential customers for the installation of conservation measures which have been identified as cost-effective. Six measures have been found to be so clearly cost-effective that the utilities will provide assistance without any prior audit. These "Big 6" items are attic insulation, weatherstripping, water heater blankets, low-flow showerheads, caulking, and duct wrap. Six additional measures will be eligible for 8% loans only when shown to be cost-effective by an RCS audit of the ratepayer's residence. These measures are wall insulation, floor insulation, clock thermostats, pipe insulation, storm or thermal windows, and intermittent ignition devices to replace pilot lights.

The Commission has ordered provisions to ensure that the benefits of the 8% programs are spread equitably. First, limits have been placed on the total amount of loans to no more than $3,500 for each dwelling unit: $750 for attic insulation; $250 for the remaining Big 6 items; and $2,500 for the six items requiring prior RCS audits. Second, loans are repayable over 60 months, ensuring relatively small monthly payments (loans are due in full upon sale of the unit). Minimum monthly payments will be $10. Third, vacation and second homes are ineligible for financing. Fourth, eligibility for loans is limited to those customers whose primary space heating or air-conditioning employs the services of the utility providing the loan.

The utilities will be reimbursed for their expenses through rates charged to customers. Balancing accounts will record expenses of the RCS and 8% loan programs, and revenues from repayment of the loans. The rate adjustment will be recalculated annually.

The utilities will be able to "supply" energy through conservation at far less cost than if new gas or electricity supplies were developed to provide equivalent amounts of energy.

I. Procedural Background and Positions of Parties

Sierra, Southwest, and CPN each filed an application for authority to implement a zero interest finance (ZIP) plan and to recover the expenses incurred.[1/] Because these utilities plan to implement their RCS audits and ZIP referrals on a consolidated basis around their Lake Tahoe service areas and because CPN and Southwest plan to work cooperatively on weatherization in their combined service area, the applications were consolidated for hearing.

Duly noticed public hearings were held October 5, 1981 and November 23, 1981 at San Francisco before Administrative Law Judge Banks. The matters were submitted subject to the filing of briefs due December 21, 1981.

Public Witness Testimony

October 5, 1981 was set aside to take public witness testimony. No members of the public attended the hearing.

Sierra (Application (A.) 60587)

Sierra serves a primarily residential load in California with over 99.5% of its customers purchasing power at 100 kilowatt (kW) demand or lower. This is 76% of all sales other than resale. Over 85% of its California load is centered in the Lake Tahoe Basin.

1/ Sierra entitled its proposed plan Interest Free Financing (IFF); Southwest and CPN entitled theirs ZIP. For convenience, they are referred to collectively as ZIP.

According to utility surveys of the Tahoe Basin residential dwellings served, only 47% are owner-occupied and about half are less than seven years old and have open beam ceiling construction. The Lake Tahoe service area has more than 8,000 heating degree days per year.2/ Of the 13,500 Lake Tahoe customers, over 5,000 use electricity for space heating.

Sierra proposes the following measures for IFF if they are found to be cost-effective when compared to the cost of new generation:

1. Attic insulation,
2. Wall insulation,
3. Floor insulation,
4. Storm or thermal windows,
5. Storm or thermal doors,
6. Weatherstripping,
7. Caulking,
8. Water heater insulation wrap,
9. Low-flow showerheads,
10. Clock thermostats,
11. Duct insulation.

An energy audit would be necessary before an interest-free loan would be made. If conservation measures are financed, the borrower would repay the amount financed (without interest) over a 60-month period commencing within 60 days of installation of the measure(s) (Tr. 6). Sierra originally proposed that repayment commence on June 30 of the year following the year in which installation is made, but changed this term in order to improve the company's cash flow. The borrower must agree to repay any balance due upon transfer of ownership. No single customer would be allowed to finance more than $3,500 or the cost of the measures installed.

2/ Each degree that the mean daily temperature is <u>below</u> 65°F is called a heating degree-day unit. The monthly value is then the sum of the degree-day units for the days in the month. Degree days are a good measure of a building's heating requirements for buildings of conventional construction.

Sierra proposes to include in its electric tariff a conservation financing adjustment (CFA) provision which would use advice letter filings to reflect the costs of conservation programs.

Under the proposed CFA procedure, Sierra would submit its program for approval prior to the expenditure of any funds. Any subsequent requests for new finance plans or modifications of existing finance plans would be submitted by advice letter filing.

It proposes that the Commission approve those plans which it deems appropriate and authorize recovery of the cost of such conservation projects through adjustments of customer rates. The rate adjustments would be by periodic advice letter filing and be designed to cover costs in the ensuing 12 months. Any balance in the CFA account whether positive or negative would be amortized. Advice letter filings are requested for CFA filings so that authorized changes for the CFA rate will occur concurrently with energy cost adjustment clause (ECAC) rate changes.

Testifying for Sierra was William C. Branch, vice president and comptroller; Nathan J. Shafer, supervisor of regulatory compliance; William A. Bowers, economist for sales forecasts; and Jack C. McElwee, manager of the rate department.

Branch reiterated the details of the proposal contained in the application. He explained that with the request for approval of its IFF proposal, Sierra desires to recover the cost of implementation by adjusting customer rates.

As noted in the application an energy audit would be performed for each customer expressing an interest in the IFF program. He explained that installation of the measures decided on would be done in accordance with the State RCS program.

Branch requested that Sierra be required to provide IFF financing only to residential customers with electric space heating. He noted that earlier conservation programs supplied conservation measures to customers whose homes were heated by propane and oil as well. He estimated that 5,000 of Sierra's residential customers have electric space heating, compared with 8,000 whose homes are heated from other sources. He recommended that the gas utilities be required to provide any financing to residences heated by gas.

Branch stated that Sierra is wholly committed to the conservation ethic at all levels of management as demonstrated by its past performance. He cited Sierra's 8% insulation financing program which began November 1, 1979. However, he noted that only two loans had been made under this program. He stated Sierra was currently conducting an active energy conservation program under Decision (D.) 88660. He declared that the IFF program would provide an additional incentive motivating customers to install cost-effective energy-saving measures. He explained that computerized home energy audits would soon be available to all customers to determine the cost-effectiveness of installing additional insulation or other energy conservation measures. Branch stated that IFF would be cost-effective to all Sierra customers, including those who never participate directly in the program.

Shafer testified that he was responsible for all communications pertaining to conservation between Sierra and regulatory agencies and overall corporate energy conservation activities, strategies, and policies. In this capacity he prepared the following first year budget for the proposed IFF program:

Marketing Strategy (Bill inserts, direct mail, press release, etc.)	$ 6,300
Customer Contact (Labor, admin., overhead, time-shared computer, material, and supplies)	60,000
Installation on Customer Premises (Annual interest expense assuming a principal amount of $1,700 on 300 installations at an annual interest rate of 18%	91,800
Billing Costs (Labor, admin., overhead, recordkeeping, postage, etc.)	7,500
Total	$165,600

Bowers described the cost/benefit analysis for several of the recommended ZIP measures. In explaining the programs he stated that:

> "Cost-effectiveness is determined, for an individual customer, by comparing the cost of installation of the program (sic) with the present value of the energy savings. The question for a consumer then is whether the value of energy saved is greater than the cost of the measure. If it is, the program is cost-effective.
>
> "To an investor or customer, however, simply because a program is cost-effective, does not mean that he will implement the program. Faced with decisions to consume various goods and services, each of which may be cost-effective and given our boundless desires with limited budgets, we will not make all such investments.
>
> "In addition, other constraints such as legal, financial, or resources will limit a consumer's choice to install conservation measures."

He illustrated the cost-effectiveness of some of the proposed measures as follows:

Measure	Life	Annual kWh Savings	Installed Cost	Present Worth
Attic Insulation	20	1111	$428	900
Wall Insulation	20	2700	958	2,187
Floor Insulation	20	665	991	539
Storm Windows	20	2948	859	2,388
Weatherstripping/ Caulking	20	1262	208	633
Waterheating Jacket	10	1260	33	632
Showerhead	10	2025	22	1,016
Duct Insulation	20	2889	120	2,340

NOTE: Present worth is the product of the price of electricity ($ .065/kilowatt hour (kWh) times the saving times the discount factor at 5%.

Actual savings and costs will vary with individual structures. Not all measures may be economical or achieve estimated savings. These studies will be determined by the energy audit.

Since the present worth of the savings is greater than the cost, the programs are economic. The customer saves more than the cost of the measure. These estimates are subject to individual decisions about the future, and one's decision to install these conservation measures will also depend on one's other consumption allocations.

McElwee explained the CFA account and the procedures to be used to recover the annual program costs. He introduced the following sample format for calculation of the proposed rate adjustment (Exhibit 7):

CONSERVATION FINANCING ADJUSTMENT ELECTRIC DEPARTMENT

Forecast Period:

Project:

Effective Date:

1. Recorded net program cost $ ____________
2. Net excess of cost over revenues, or net excess of revenues over cost ____________
3. Allowance for franchise and uncollectible accounts expense (Preliminary Statement 7.E.(3)) ____________
4. Total ____________
5. Estimated sales for forecast period:

   California Public Utilities Commission (CPUC) Jurisdictional — kWhs (000's)

   Residential
   - Lifeline ____________
   - Nonlifeline ____________
   - Total ____________

   Nonresidential ____________

   Total Sales ____________
6. Effective CFA Rates: — $ Per kWh

   Residential
   - Lifeline ____________
   - Nonlifeline ____________

   Nonresidential ____________

NOTE: Line 1 is the annualized net program cost. Line 2 relates to the periodic redetermination for the plan. Line 3 shows the revenue requirements for franchise payments and uncollectibles. Line 4 is the total estimated annual revenue requirement for the plan. The estimate of sales to which the plan applies is shown under line 5 and the resultant rates are shown under line 6.

He stated a CFA adjustment was not being proposed for a specific plan. Once approval of a program is received, costs would be deferred and recovered through an annual filing at the end of the program year by dividing the recorded annual costs by the forecasted sales volumes of the subsequent 12-month period. However, he estimated under cross-examination that the $165,600 estimated in Sierra's IFF application would produce a rate adjustment of 0.000411 cents per kilowatt-hour.

He stated:

> "The proposal is intended to recover from ratepayers on a current basis the costs of financing as approved by the Commission. Since actual sales volumes differ somewhat from the estimates, it is proposed that the rates be adjusted annually so that costs and revenues match as closely as possible on a continuing basis. To the extent that revenues do not match costs for a period, the difference will be included in the determination of the rate for the following period and shown in line 2 of the sample calculation. For example, if costs have exceeded revenues by $20,000, then the total amount recoverable over the forecast period would be increased by $20,000 plus related franchise payments and uncollectible accounts expense."

Finally, he stated that the proposal is designed so that only the net cost is chargeable to revenue requirements.

Southwest (A.60555)

Southwest provides natural gas service in California, Arizona, and Nevada. Its two California service areas are Lake Tahoe in northern California and the high desert area of southern California. Its southern California districts of Big Bear, Barstow, and Victorville use approximately 80% of the total gas supplied in California.

The bulk of the southern California area customers are residential, consuming approximately 75% of the area's total usage. The northern California area customers are primarily residential and small commercial, consuming approximately 85% of the area's total usage. The application states that the proposed ZIP program would be promoted to the approximately 50,000 potential participants with natural gas space heating in both the northern and southern California service areas. Direct mail, bill inserts, newspapers, and other marketing strategies to develop audit requests from residential customers would be used. It is anticipated that consumer interest developed through the RCS audit would ultimately provide the principal source of requests for participation in the program.

Southwest proposes to audit and finance the following conservation measures if they are found to be cost-effective:

1. Attic insulation,
2. Floor insulation,
3. Storm or thermal windows,
4. Storm or thermal doors,
5. Weatherstripping,
6. Caulking,
7. Water heater insulation wrap,
8. Automatic thermostats,
9. Low-flow showerheads,
10. Insulation of ducts,
11. Intermittent ignition devices for furnace retrofits.

Should other measures (including high-efficiency gas appliances) become cost-effective during the course of the program, they would be added after review by the Commission.

After a home energy audit, Southwest's conservation consultant would explain to the customer its proposal to arrange and finance the installation of those measures determined by the audit to be cost-effective.

Southwest's plans call for financing up to $1,500 per residence for a term of up to 60 months to be repaid in equal payments beginning approximately 30 days after installation is complete. There would be no advance payment but a minimum monthly payment of $10. The owner must agree to repay Southwest, without interest, the full amount financed if ownership of the property is transferred. Customers wishing to purchase and install qualifying conservation measures themselves would be eligible to participate in the plan if they own their home and receive credit approval. Absentee owners would also be eligible to participate upon credit approval.

Qualifying measures would be installed in accordance with the state RCS plan (State plan)[3] except for those measures not requiring an audit under AB 2030.[4] The measures would be installed by a qualified RCS-approved contractor, or where the customer installs the measures, he or she must provide Southwest with receipts for materials purchased. The contractor selected would be required to warrant the materials and quality of installation to Southwest and the dwelling owner as required by the State plan.

All installations would be inspected to ensure that all measures have been installed properly. The inspection services and requirements would be consistent with the inspection section of the State Plan. The same inspection would be made if the owner installs the measures. If the

---

3/ The State plan was filed with the Department of Energy (DOE) June 4, 1980 and approved on December 29, 1980. It is presently being modified to make home energy audits easier, shorter, and more cost-effective.

4/ AB 2030 added § 17052.8 to the Revenue and Taxation Code (Stats. 1980, Ch. 904) to provide a 40% tax credit for the installation of certain conservation measures.

installed measure does not pass the inspection, the contractor or owner/installer would be required to make the necessary repairs or adjustments prior to a second inspection. Once the measure passes inspection, the ZIP loan would be processed. Southwest would pay the amount to be financed to the dwelling owner for distribution to the appropriate contractor(s) while the owner/installer will be reimbursed for material(s) cost.

Participants in the plan would receive monthly invoices for the principal amount payable. The loan repayment invoice would be separate from the billing normally rendered for utility service.

The application states that Southwest is committed to energy conservation, as demonstrated by its past performance. It points out that Southwest voluntarily began a successful 8% insulation financing program early in 1980. It states it is currently conducting an active energy conservation program in both its southern and northern divisions and that the ZIP plan will provide additional incentive toward motivating customers to install cost-effective energy saving measures. It states approval and implementation of the proposed plan is timely because plans are to offer computerized home energy audits. These computerized audits would determine the cost-effectiveness of installing additional insulation or other energy conservation measures by residential customers. Southwest believes its plan will provide a catalyst to stimulate residential customers to install cost-effective conservation measures sooner than could otherwise be anticipated.

Its ZIP program would be financed through loans. The associated costs would be recovered through the use of a conservation financing account. The conservation financing account would reflect all costs and charges related to the implementation of the ZIP program and related activities. It would apply to all commodity rates.

The conservation financing account rates would be revised twice each year as follows:

January 1 and July 1 - San Bernardino service area,

April 1 and October 1 - Placer County service area.

The conservation financing account rates would be set by the Commission and placed in effect for each forecast period. The forecast period would be the 12 months beginning with the dates the rates are revised. The rates would be adjusted at the time of revision to recover or return the adjusted amount to the conservation financing account. The amount of adjustment applicable to each revision date would be the sum of the CFA amount plus or minus the actual balance of the conservation financing account plus an allowance for franchise fees and uncollectible account expenses.

The CFA amount would be the sum of the forecast period estimated loans to be made plus related forecast period estimated costs. These program costs would include, but not be limited to: planning, staffing, training, administrative costs, and related tax liabilities.

The conservation financing account would be the actual amount at the end of the latest available recorded month prior to the revision date.

Revised rates would be filed at least 30 days prior to the revision date. Each filing would be accompanied by a tabulation showing the derivation of the adjustment.

The application states that Southwest's alternatives for financing the proposed ZIP program are limited because:

1. Its direct financing capabilities are severely limited,
2. Its current level of earnings is substantially below the indicated common stock dividend,

3. The current level of interest coverage precludes the issuance of any long-term debt financing, and

4. It faces historically high levels of construction expenditures and external fund requirements over the next five years.

It states that the alternate method of financing as proposed by the state's larger utilities, i.e., the use of a wholly owned financing subsidiary, is not available because Southwest's indentures do not permit it to guarantee the indebtedness of a subsidiary.

Testifying for Southwest was Wallace C. Kolberg, manager of energy conservation services, and Andrew B. Laub, a financial analyst in the treasurer's department.

Kolberg stated that while the proposal deviates in terms of maximum loan amount, term of loan, and repayment time period, he believes it generally follows the broad outline of Pacific Gas and Electric Company's (PG&E's) plan. He stated that he did not believe a ZIP plan should be required of Southwest for the following reasons:

"1. We serve in unique recreational areas serving 50% seasonal customers.

"2. We've had good response to our current 8% financing program.

"3. A ZIP program will be more costly than our 8% program.

"4. A ZIP program will not increase our sales of conservation measures to any substantial degree.

"5. We believe it's not in our customers best interest to require a duplicative financial service from both gas and electric companies in the communities we serve."

When asked to explain further, he stated:

> "Southwest distributes gas in Southern and Northern California. We serve approximately 50,000 customers in and around the communities of Barstow, Victorville and Big Bear in Southern California and at Lake Tahoe in Northern California. Approximately 36% of our California customers are located in the communities at Tahoe and Big Bear. These areas are recreational in nature and as a consequence approximately 50% of our customers are seasonal occupants or absentee owners. These second home owners typically utilize their cabins or homes for either occasional weekend visits, rental property or both. With half of our customers in these communities living elsewhere, costs associated with programs such as ZIP are, to a large degree, carried by the permanent customers that live in the area. We believe it is unfair for our permanent customers to be saddled with the economic burden of ZIP for those who own second homes and only dwell in the area on a temporary basis. For the most part our permanent customers in these areas have already taken substantial conservation actions. Tahoe and Big Bear each have approximately 8,000 heating degree days and yet the usage of permanent and seasonal customers is almost the same. We believe this is evidence that the permanent (full time) customer is doing his part to conserve."

He further stated that Southwest had been successful in terms of the number of loans generated in its 8% low-interest loan program. For example, during 1980, 1,009 insulation sales contracts were processed in the service area. Of this total 628 used the 8% financing program for approximately $245,000. In 1981, through August, 439 insulation jobs were sold of which 331 were financed for a total of $144,000.

He stated sales of insulation usually pick up in the fall and winter months and as a consequence, projections for 1982 sales total 1,075 with 675 to be financed for a sum of $262,000. Based on these figures, it is believed the sales activity has been relatively strong. With two-thirds of the customers that install conservation devices requesting financing, the success of the 8% program is believed substantiated.

He stated he did not believe the ZIP program would make any substantive difference in the present insulation and device sales programs. He believed that sales have peaked and the projected 1,000 units per year is not a sustainable sales level. He believes the impact of ZIP would be minimal, stating that 8% is already perceived as a bargain and therefore a strong incentive.

He stated that in his opinion ordering a ZIP program would be counterproductive because both gas and electric utilities would be offering duplicate services. He stated that in both northern and southern California (with the exception of Big Bear) the customers now served are in fact the same customers served by Sierra or Southern California Edison Company (Edison). He questioned why both the gas and electric utility should be required to provide such a costly service. He stated the duplication of costs of such programs should not be forced on ratepayers. For example,

> "..in southern California, the Commission will presumably require the Edison Company to provide low cost financing? In turn Edison will need to develop a structure such as I described to provide financial services. The cost of providing all of the administrative overheads

will be spread across several millions of customers served by Edison, which will include those served in and around Barstow and Victorville. Why not let those customers enjoy the reduced cost of only paying for the 'financial services' once? Southwest respectfully suggests that the Commission should not require Southwest to provide such an expensive duplicative service for the mutual customers we share with the electric utilities. We believe it just makes common sense for Southwest to utilize the financial services which will be developed by the electric utilities. In the event the Commission believes that some costs should be shared by the gas utility in the common service area, we propose that our personnel carry the electric utility's forms, sign-up the customers, forward the paperwork to the electric utility and pay a fee for the administrative processing cost. The 'bottom line' to the ratepayer (our mutual customer) would certainly be less than the alternative of both utilities creating separate consumer financing departments.

"At the present time, Southwest does not have a computerized financial program. I have been informed by our data processing department that the cost to do so would be prohibitive for the low volume of loans we anticipate. As a consequence, Southwest is operating its customer financing program by hand. We are currently hand processing approximately 1,500 loans and expect that total will grow to about 2,000 by the end of the year. We have added to our division staff the equivalent of one to one and one-half full-time people just to shuffle this paperwork, prepare statements, process payments, etc."

Finally, he stated Southwest has been conducting conservation activities for the last several years in both northern and southern California. These activities have produced some disappointment along with some positive results. He stated that while maintaining a strong and aggressive commitment to conservation over the past several years, Southwest is becoming concerned over the cost to its California customers. He stated that although the conservation activities have generally been shown to be cost-effective, it is done with the perception that the therms saved somehow become available to other Southwest high priority customers in California. As a practical matter, this is not necessarily true. The gas for the most part is not stored for future use by residential customers. Instead, it is diverted for use by industrial or power plant customers in California and states east of California. Consequently, therms saved in Southwest's southern service area are made available to large industrial or power plant customers that otherwise might have been curtailed. (Southwest does not serve any customers of this type in southern California.) Therefore, from a revenue standpoint, the therms saved are therms lost. He stated it appears inappropriate that Southwest's California residential and small commercial customers should be paying a relatively high price to conserve a therm which is in turn sold at a lower price, for a lower priority use.

There is no evidence on this record that sales reductions caused by expanded conservation efforts would impose any significant net impacts on Southwest's revenue requirements. Kolberg admitted under cross-examination that he knew of no studies by Southwest of the marginal cost of gas supplies, or of conservation. Southwest is a resale purchaser of gas from other utilities, paying a single rate which does not reflect directly the varying costs of different supply services to the selling utility. There is no discussion in the record of any terms in Southwest's gas supply contracts which would prevent the utility from reducing gas purchases if conservation led to reduced demand.

Laub testified on the financial options available to Southwest to pay for its ZIP program. He stated that options are limited because it cannot form a wholly owned subsidiary as other utilities have done and due to extremely low earnings for the past two years is unable to finance any long-term debt. While the use of a wholly owned subsidiary to finance a ZIP program offers many advantages, Southwest is precluded by its first mortgage bonds from allowing a subsidiary to incur any indebtedness or acting as a guarantor of any debt incurred by a subsidiary. He stated Southwest is unable to issue any long-term debt due to restrictions contained in the indenture in its 1967 debentures.

He stated there are no reasonable financial alternatives available to Southwest. The restricted debt capacity is especially untimely as it relates not only to ZIP but to planned construction. He stated the next five years will require historically high levels of construction expenditures and for the past 18 months all possible discretionary construction expenditures have been delayed.

Finally, he offered the observation that Southwest has an ongoing commitment to conservation in all of its service areas but unfortunately the lack of viable financial alternatives available under ZIP and the company's deteriorating financial condition make ZIP extremely unfeasible at this time.

CPN (A.60775)

CPN operates electric, gas, water, and telephone systems in California. This application pertains to its electric service districts in Needles, Lassen, and Weaverville, and its gas districts in Needles and South Lake Tahoe.[5/]

At South Lake Tahoe it provides natural gas service to approximately 9,500 residential customers, 830 commercial customers, and one large commercial customer. The residential customers use slightly more than 60% of total sales. A large percentage of its service connections are second homes.

In Weaverville, located in northern California, electricity service is provided to approximately 1,150 residential customers, 310 commercial customers, and three industrial customers. The residential customers used approximately 56% of the 21,731,185 kWh sold in 1979.

The Lassen District includes electric service to approximately 7,200 residential customers, 1,100 commercial customers, and five

---

5/ By D.82-06-004, issued June 2, 1982 in A.82-04-31, the Commission authorized CPN to sell its Weaverville operation to Trinity County Public Utility District.

industrial customers in the communities east of Lake Almanor including Chester, Westwood, Susanville, and Herlong. The residential customers use approximately 48% of the 140,823,585 kWh sold in 1979.

In Needles, natural gas service is provided to 1,210 residential customers and electricity to 1,830 residential customers. The residential sector uses 61% of the gas sales and approximately 50% of the electric sales. Needles has extremely high summer temperatures, which require high electric energy usage for air-conditioning. Winters are mild, with only 1,072 heating degree days per year.

The application states CPN currently offers an innovative, aggressive conservation program as approved by the Commission in D.92718. The program includes home energy audits, 8% ceiling insulation loans, conservation voltage regulation (CVR-II) and surveillance programs, pilot light shut-off program, streetlighting conversion program, and an expanded insulation loan program covering "Big 6" measures outlined in AB 2030 which do not require a home energy audit. CPN also offers cooperative conservation programs with Sierra and Southwest in areas where their service territories overlap. It states the three utilities coordinate conservation efforts, including advertising, customer information, and home energy audits through the Tahoe Conservation Center, housed in CPN's South Lake Tahoe business office.

As part of its commitment to energy conservation, CPN states it filed A.58084 on May 22, 1978 for authority to institute a residential gas and electric conservation program involving zero interest loans. However, the Commission staff (staff) determined that such a zero-interest program was inappropriate at that time and the application was withdrawn.

This application was filed as required by D.92718 dated February 18, 1981 in CPN's last general rate case.

CPN proposes to offer its residential space heating customers energy audits and financing for the following conservation measures if they are found to be cost-effective:

1. Attic insulation,
2. Attic ventilation in the form of fans or vents,
3. Floor insulation,
4. Storm or thermal windows,
5. Storm or thermal doors,
6. Caulking,
7. Weatherstripping,
8. Water heater insulation wrap,
9. Automatic setback thermostats,
10. Low-flow showerheads,
11. Duct insulation,
12. Intermittent ignition devices for furnace retrofits.

It alleges that the program would provide an economical means of conserving natural gas and electricity and of reducing of heat loss and heat gain in residential dwellings.

Other measures becoming cost-effective during the course of this program would be added after review and approval by the Commission.

Customers would be notified through direct mail, bill inserts, newspaper and radio advertising, and other marketing strategies as required to promote the program.

Through a home energy audit it would be determined which measures are cost-effective. Customers would obtain three bids from contractors who are listed on the State of California's RCS Installers' List. Using these contractors will assure customers that only contractors who have met the State's eligibility criteria and who agree to abide by the appropriate installation and material performance standards will be utilized in the program. CPN plans to inspect installations to ensure that all conservation measures have been installed properly. The inspection services and requirements will be consistent with the inspection section of the State plan. If the owner chooses to install the conservation measures, the work would be subject to the same inspection services and requirements.

Financing would be provided to qualified homeowners upon approval of credit. A maximum loan of $1,500, or $2,000 if storm windows are installed along with other weatherization services, would be available. Financing would be for a term of up to 60 months to be repaid in equal payments beginning approximately 30 days after the installation of all measures. The minimum monthly payment would be $10. If ownership of the property is transferred, the owner would repay the outstanding balance without interest. CPN would pay the amount to be financed to the dwelling owner for distribution to the appropriate contractor(s). The owner/installer would be reimbursed for the material(s) cost.

The application states that though CPN was exempted from the requirements of the National Energy Conservation Policy Act in 1980 and 1981, it has proceeded in the development of programs to meet all the requirements of the State plan.

No funds were requested to cover RCS-related expenses in CPN's last rate cases because at that time the State plan had not been developed and it was not possible to make an accurate projection of RCS costs.

CPN proposes implementing the "California Plan for the Residential Conservation Service" as developed by the California Energy Commission. It also proposes consolidating current authorized expenses with the proposed ZIP program and State plan to eliminate duplication and provide the most cost-effective method of promoting energy conservation.

CPN requests that the costs associated with its RCS program be recovered through a balancing account to be established for its ZIP program. It estimates that these expenses would not exceed $50,000. Should expenses approach this level, discussions would be held with the Commission's Energy Conservation Branch to determine further courses of action. (The Conservation Branch staff recommended in Exhibit 40 in A.59548, 59549, 59550, 59551 and 59552 that CPN be allowed to recover costs in excess of the estimate for test year 1981 through a balancing account or some other appropriate mechanism.)

The balancing account to recover ZIP and RCS expenses would be identified as the Conservation Financing Account. Accounting procedures would be developed jointly with the staff to identify program expenses.

The costs would be recovered through an adjustment of customer rates. The rate adjustments would be by periodic advice letter filings and designed to cover costs in the ensuing 12-month period amortizing any balance in the Conservation Financing Account.

It is suggested that the advice letter filings be made so that authorized changes for the Conservation Financing Account rate would occur initially with revision dates of the next purchased energy and supply adjustment mechanism (SAM) filings. Future rate adjustments would be made consistent with the revision dates of the purchased energy filings when the rate is determined to be sufficient to warrant the expense of filing and review. Proposed Conservation Financing Account rate adjustments would be filed at least 30 days prior to the revision date.

The first year financing cost is estimated at $269,800. This amount is broken down as follows:

Marketing Strategy (Bill inserts, direct mail, radio, and newspaper advertising)	$ 7,400
Customer Contact (Labor, administrative overheads, transportation, computer time share, materials, and supplies)	31,500
Principal and Interest (Assuming a principal amount of $1,000 on 235 loans)	223,600
Billing Costs (Labor, administrative overheads, recordkeeping, and postage)	7,300
Total	$269,800

Testifying for CPN was Philip B. Carman, general manager of CP National Energy Management Services, Inc. and Kim C. Mahoney, director energy revenue requirements.

Carman stated that CPN does not believe offering to provide financing for weatherization measures to customers other than qualified residential space heating customers would be cost-effective since there would be no benefit to its customers when an oil or propane heated home is insulated. Further, it would increase rates for customers, should CPN be required to finance measures in homes heated by fuels other than natural gas or electricity.

With regard to the proposed dollar limitation, he stated that CPN has offered a ZIP program in the State of Oregon for over three years, and that the average loan is approximately $1,000 (with storm windows the average is $2,000.). It is believed these limits will provide for adequate quality materials to be installed while not precluding a customer from installing more expensive products should they elect to pay the difference.

He stated customers with outstanding loans from other CPN conservation programs would be given the opportunity to convert to principal only payments if the balance is greater than $100.00.

He stated sidewall insulation was not included in this proposal due to serious questions regarding moisture problems caused when sidewalls are retrofitted and a vapor barrier is not installed. No cost-effective solution to this problem has been developed to date. When this situation is resolved, sidewall insulation would be included in the program.

When asked to comment on the impact the proposed program would have on rates, he stated:

> "CP National has serious concerns with the effect on rates this Program will have. Depending on I.R.S. rulings on collection of revenues for the Program, costs could be between twelve ($12) to twenty-three ($23) dollars per customer. An example of this increase is in our Needles, California natural gas district where present rates per therm would increase from $1.03 per therm to $1.08 per therm. With the price of natural gas over $.90 per therm, we will be forcing customers to convert to other fuels. This fuel switching will cause further reduction in sales per customer which will cause additional rate increase to recover lost revenues from reduced sales. This, in turn, will cause additional fuel switching and more rate activity. It should be noted that Needles has one of the lowest average sales per customer in the State."

He made no effort to explain why revenues collected under the CFA to cover ZIP expenses would be treated any differently than other utility activities, in which only revenue net of expenses is actually taxed.

He was asked if there were any problems with the implementation of the ZIP program. He stated:

> "...CP National, in cooperation with Sierra Pacific Power Company, Southwest Gas Corporation, and the Energy Conservation Branch, just expanded its 8% loan program to cover the Big Six measures outlined in A.B. 2030 which does not require a home energy audit. We've completed notification of this Program in our Needles, California District with the assistance of the local high school junior class students.

By converting to the Zero Interest Program so soon after expanding our 8% program we will tend to confuse customers and lessen any impact of a Zero Interest Weatherization Program. This expanded 8% program has not been operating for a sufficient period to determine whether it's more cost effective than a Zero Interest Program. We believe the expanded 8% loan program should be allowed to continue until problems with zero interest loan programs of other California utilities have been resolved."

He expressed additional concerns with implementing a Zero Interest Weatherization Financing Program as follows:

"...In the resort area of South Lake Tahoe which the company provides natural gas service over fifty percent of the customers are out of town landlords. The remaining full time residents for the most part have weatherized their homes to the maximum extent that is possible. The increased costs of a Zero Interest Weatherization Financing Program would have to be subsidized for the out of town landlords by the full time residents. This subsidization will cause increased utility bills in an area with over 8,000 degree days. Increased rates will cause further reduction in sales which presently averages 1,045 therms annually, compared to the five county Bay Area usage of 756 therms annually."

Mahoney explained that the estimate of the principal and interest expense was developed as follows:

"The principal amount was determined by assuming a participation level of 235 loans in the first year of the program. Because the payment period would begin approximately 30 days after installation of the conservation measures, a portion of the principal amount is expected to be repaid each year. For the basis of the computations, it was assumed that in the first few months of the program there would be limited participation and it would not be until approximately the fifth

> month of the program that a more active level of participation would be reached so that the amount of loans outstanding would increase during the phase in period of the program. The principal amount would be financed by the customers and it was estimated there would be approximately a three-month lag in the commencement of the principal payment. Thus, during the first year of the program, nearly one-half of the principal amount would be financed until the revenue is recovered from the customers. The interest expense was calculated at an annual cost of 20%, the currently borrowing cost."

He also stated that because there is an uncertainty whether the IRS would treat the first year estimated requirement of $223,600 as a taxable item, the actual amount could double if an adverse ruling is received. This amount represents an annual expense on a per customer basis of from $12.50 to nearly $23.00. Again, however, no effort was made to explain why total revenue would be taxed, rather than any net income remaining after ZIP expenses were accounted for.

For its electric districts, he stated CPN has currently pending before the Commission a request for a rate increase of approximately 27%. With the attrition allowance for all of the energy districts to be effective January 1, 1982, customers already have an adequate incentive to conserve.

Commission Staff

Testifying for the staff were Grayson Grove, senior utilities engineer, Conservation Branch; Robert Benjamin, research analyst, Revenue Requirements Division; and Herbert Chow, financial examiner.

Grove reviewed the proposed ZIP applications and discussed the problems a ZIP program would cause the three applicants. He stated that he believed the concerns of the applicants on the wisdom of implementing a ZIP program at this time were genuine. He stated that over 50% of the customers at Lake Tahoe are second homeowners with energy consumption at about the same percentage. This, he believes, indicates that permanent homeowners are practicing conservation while second homes (rentals) are using more energy per day when occupied. He concluded that permanent customers do not appreciate the limited conservation practices of renters.

Of equal importance is the concern over what becomes of the energy saved by customers. Grove stated most of the natural gas saved by CPN would go to Southwest, which, in turn, would be sold to lower priority customers located in Arizona or Nevada. He did not address the net revenue impacts on CPN's California ratepayers of such a hypothetical transfer of gas demand out of state. Grove asked the rhetorical question of whether the cost of the ZIP program could, as alleged by CPN, cause customers to switch to some alternate fuel or conserve to the point where a rate increase would be necessary in order to maintain its operation and keep it financially sound.

He stated that after reviewing other staff witnesses' testimony he concluded that the utilities' concerns cannot be solved and that the cost-effectiveness of the ZIP program is questionable for some of the utilities in certain service territories. If one utility can be exempted due to a special problem, Grove believes all should be exempted; otherwise, the Commission would have a credibility problem. He stated that perhaps this is not the time to implement ZIP programs. Because the test programs of Edison and PG&E have been disappointing a ZIP program should not be required of the smaller utilities until the larger utilities can implement a productive program with proven results. When data substantiate that ZIP is cost-effective systemwide for the larger utilities through savings measured at the meter, the smaller utilities should again be requested to file. He stated the subsequent filings should seek a solution to various concerns, assume a high (20%) customer participation the first year, and show the financial impact on the utility. If under these criteria the program is not cost-effective, Grove believes it should be so stated and substantiated in the application.

Benjamin testified on the cost-effectiveness of ZIP plans proposed by the three applicants. He stated that he used the same cost-effectiveness methodology used in the Southern California Gas Company (SoCal) Weatherization Financing and Credits Program application (A.60446) and San Diego Gas & Electric Company (SDG&E) ZIP application (A.60546). He concluded that the societal cost of savings of all measures together (in the market penetration assumed) is lower than the assumed societal marginal cost and thus appears societally cost-effective. He stated the programs could be made more societally cost-effective by removing floor insulation, storm windows, and storm doors from the program as they are consistently the least cost-effective conservation measures.

Benjamin found that Sierra's program met the so-called non-participant test if only customers with electric space heating were allowed to participate, and if a 12% discount rate was assumed producing life-cycle nonparticipant savings of 0.025 mills/kWh. Using a 20% discount rate, Sierra's program would impose additional life-cycle nonparticipant costs of 0.0003 mills/kWh.

Benjamin concluded that CPN's and Southwest's programs both failed the nonparticipant test, by as much as 2.21 mills/kWh and 4.501 mills/therm using a 20% discount rate, and by as much as 1.531 mills/kWh and 3.084 mills/therm using a 12% discount rate. He explained that these losses would occur primarily because the utilities are in effect "energy retailers" which presently buy all their supplies for a given territory from a larger utility, at a single price. This flat rate does not reflect directly the "whole-sale" utility's marginal cost of energy production. However, Benjamin looked only at the present price of purchased power; he did not attempt to estimate the future price of purchased power, or the possibility of changing regulatory policies which might reflect marginal costs of production more directly in the rates charged to resale customers such as CPN and Southwest.

Chow testified on the proposed method of financing the various programs. He stated that there are disadvantages to the methods of financing proposed by the applicants in that they involve substantial additional outlay by the ratepayers. Sierra's short-term borrowings would incur interest expense at approximately prime rate plus 1% or 2%. This means that the interest rate would be at about 20% and the ratepayer would bear this high-interest cost. For Southwest and CPN the funding methods proposed are for additional revenue to finance a loan fund. He stated that one of the problems with this proposal is the income tax effects, i.e., in order to finance the loan fund, the utilities would have to collect twice the amount required because the revenues for the loan fund would be subject to income tax.

As a less costly method Chow proposed that Southwest and CPN establish a financing trust. He stated a financing trust is viable for the following reasons:

1. The ratepayers provide the loan funds to themselves.
2. The contributions are not taxable income to the utility.
3. The trust can accumulate sufficient estate to develop its own credit line that would expand its loan granting potential.
4. The credit of the trust would not infringe upon the credit rating of the utility.
5. The trust estate remains separate from the utility.
6. The trust operating results and financial conditions are not part of the utility's financial statements.

Chow stated only the electric department of a utility should sponsor a ZIP program to eliminate double billing of departmental overhead.

If his recommendations regarding the sponsoring utility were accepted, Chow proposed that:

1. Sierra carry out all RCS and ZIP programs in its California service area and that Southwest and CPN be excluded from carrying out these programs in Sierra's service area.
2. CPN carry out all RCS and ZIP in its Needles service area through its electric department.
3. Southwest be excluded from carrying out the RCS and ZIP programs in its San Bernardino County service area and Edison carry out all

RCS and ZIP programs in its San Bernardino County service area.

4. CPN establish a financing trust to fund ZIP in its Needles service area.

5. Sierra and CPN establish balancing accounts to account for this cost to implement RCS and ZIP and the revenues collected.

Where gas and electric utility service areas overlap, Chow proposed that for each service area there be only one utility sponsoring an RCS and ZIP program. He stated that because the electric utilities have the more efficient operation and stronger credit, Sierra in the Tahoe area and Edison in San Bernardino County would be more effective in carrying out a conservation program at a lesser cost. Although CPN serves both gas and electricity at Needles, only one department should sponsor the program.

Should it be decided that CPN and Southwest should implement RCS and ZIP programs, Chow stated they should be required to (1) establish a financing trust to avoid paying income tax on loan funds advanced by ratepayers, and (2) establish a balancing account.

On cross-examination Chow admitted that he did not know for certain whether the financing trust would be tax exempt. He also stated that the financial rating of the various utilities was not at issue since any funding would be accomplished by short-term borrowing rather than long-term borrowing.

II. Discussion

This Commission has long identified conservation as one of the most important tasks facing California utilities. In D.84902 dated September 16, 1975 we stated:

> "Continued growth of energy consumption at the rates we have known in the past would mean even

higher rates for customers, multi-billion dollar capital requirements for utilities, and unchecked proliferation of power plants. Energy growth of these proportions is simply not sustainable... Reducing energy growth in an orderly, intelligent manner is the only long-term solution to the energy crisis."

That decision directed utilities to take aggressive steps to achieve conservation goals.

The Commission's encouragement of utility conservation activities has included admonitions that these activities be cost-effective. Included in this cost-effectiveness goal is further direction that utilities operate their activities to avoid unnecessary ratepayer expenditures.

In deferring the implementation of a ZIP program for SDG&E in D.93894 dated December 30, 1981 we stated:

"A consumer considering home weatherization investments must decide whether to invest hundreds or even thousands of dollars in improvements which will be cost-effective over a five to ten year span but require an immediate commitment of funds. The Commission has recognized the important role public utilities can play in making such investments more attractive.

"The utilities have direct and regular contact with ratepayers, professional expertise regarding energy efficiency measures, and access to financing. They occupy unique positions from which to speed the penetration of energy efficiency devices. Thus, as energy costs have risen steadily, the Commission has moved step by step to adopt policies directing utilities to expand their involvement in conservation financing.

"In early 1978, the Commission ordered utilities to provide 8% loans with extended payback periods to finance ceiling and attic insulation, and to offer information and installation services. Statewide, utilities have provided 8% financing to hundreds of thousands of residential ratepayers. PG&E has been the leader in this effort. We note here, however, that Southern California Gas Company (SoCal) is now arranging several thousand 8% loans per week, to finance attic insulation. In contrast, evidence in this proceeding indicates that SDG&E has financed fewer than 500 loans since finally starting its 8% program in April 1981.

"The 8% loan programs have stimulated residential weatherization efforts in utility service territories in which the program has been fully implemented. However, even in the most heavily penetrated territories, considerable potential for cost-effective residential weatherization remains.

"Pacific Power & Light Company (PP&L) and Pacific Gas and Electric Company (PG&E) now operate ZIP programs, in their service territories. The experiences of these two utilities demonstrate that ZIP can be highly cost-effective, at least in the climate zones they serve.

"The Commission has concluded that a utility financing program which imposes minimal obligations on recipients would provide a significantly greater stimulus to residential conservation investments. Costs to the utility and its ratepayers should still be far lower than alternative measures for generating new supply. However, 8% programs should be allowed to run their course before zero percent programs are authorized. If 8% loans provide sufficient incentive, the ratepayers need not be offered more generous utility programs.

"Despite our satisfaction with the continuing success of the PP&L and PG&E ZIP programs, we are led by a number of considerations to defer ZIP for SDG&E. These considerations involve differences between SDG&E and its service territory, on the one hand, and the situations presented by PP&L and PG&E, on the other.

"Until the latest round of energy price increases, the mild San Diego climate made home heating and cooling a relatively inexpensive task. Consequently, the past four years of expanding conservation activity have largely by-passed SDG&E's service territory. The record in this proceeding presents no evidence of significant homeowner-financed conservation. Neither has the utility undertaken an aggressive program to interest its customers in the benefits of conservation.

"In contrast, northern California homeowners, and PP&L and PG&E, have insulated hundreds of thousands of attics, and spent millions of dollars on additional conservation efforts. PG&E has operated a successful 8% attic insulation program for four years, and the record in the latest PG&E ZIP proceedings indicates that privately-financed conservation levels are even higher.

"Southern California Gas Company (SoCal) matched SDG&E's inactivity until recently. In the past year, SoCal has instituted an aggressive program providing 8% loans for attic insulation. SoCal's customers have responded by contracting for over one hundred thousand loans, at a present rate of several thousand per week. We note this coincidence in time of sharply higher rates, utility activism and spectacular increases in weatherization activities.

"Because there has been almost no retrofit activity until now in SDG&E territory, the Commission reasons that an 8% program should generate a great deal of conservation. Because financing costs to the utility and its ratepayers are roughly half as high at 8% as at 0%, we will await the results of the 8% program before embarking on ZIP."

The record in this proceeding leads to the conclusion that the 8% conservation programs now in effect should be expanded and allowed to run their courses before authorizing a 0% program. The high rates and uncertain financial condition of the applicant utilities provide additional impetus to minimize the ratepayer-borne costs of these programs. As noted above, the financing costs at 8% roughly half the cost at 0%.

There are significant differences between the service areas of applicants and PP&L and PG&E. Still, as in the cases of those utilities, the six weatherization items available under applicants' existing 8% programs are, on the average, highly cost-effective, so that no individual calculation is necessary to justify installation.

Applicants have a joint conservation center in their overlapping Tahoe service areas to maximize the effectiveness of the existing 8% programs, and cooperate in areas of overlap in Southern California as well. This coordinated effort has increased efficiency and reduced unnecessary duplication of efforts by the utilities. Applicants should continue, and if possible expand, their coordination in further efforts to reduce program costs.

Cost-effectiveness and efficiency will also be promoted by requiring as a condition of 8% financing that participants install packages of measures. Packages have been required in PG&E's ZIP (D.93891), SDG&E's 8% program (D.93894), and SoCal's Weatherization Financing and Credits Program (WFCP)(D.82-02-135). This package requirement is imposed in order to ensure that ratepayer funds are invested as cost-effectively as possible, and is not intended to imply that homeowner investment in individual measures is not cost-effective.

In order to receive 8% utility financing for any of the measures in the "Big 6," a participant must demonstrate that all measures applicable in his or her home have been installed. Of course, this requirement can be met by measures already in place, although new 8% financing will be provided only for measures newly installed.

A packaging requirement is also imposed for those measures beyond the "Big 6" which require an RCS audit to determine cost-effectiveness. Utility financing will be made available only when all "Big 6" items are also in place.

The three utilities proposed slightly differing lists of measures for inclusion if determined to be cost-effective by any RCS audit. All included floor insulation, storm or thermal windows and doors, and clock thermostats. In addition, Sierra also proposed to include wall insulation, Southwest and CPN to include intermittent ignition devices (IIDs), and CPN to include attic ventilation in the form of fans or vents. Zero and 8% programs adopted by other California utilities have included wall insulation where cost-effective when the contractor can avoid condensation problems. They have also included IIDs where cost-effective. We will include these measures on this basis for all three applicants here. We will also authorize CPN to install attic ventilation where demonstrated to be cost-effective.

In today's decision we also will set financing limits on 8% weatherization, consistent with those established for the weatherization programs ordered for other California utilities. These limitations are adopted to limit the immediate ratepayer impacts of the 8% programs. We do not imply that many residences could not receive larger investments cost-effectively. The financing limits are:

1. $1,000 for installation of all "Big 6" measures,
2. $750 for installation of attic insulation alone,
3. $250 for installation of the five "Big 6" measures excluding attic insulation, and
4. $2,500 for installation of the remaining measures to the extent they are found cost-effective by a prior energy audit.

The $750 limit for installation of attic insulation is based on the standard installation of material to the R-19 thermal resistance level. This limit is well above the average cost ($435) of the 331 installations at the R-19 level financed by Southwest during the first eight months of 1981 for $144,000. We recognize that substantially higher "R" levels of retrofit attic insulation are likely to be cost-effective in areas, like Lake Tahoe and Big Bear, with 8,000 heating degree day climates. Should it appear necessary to raise the $750 limit to achieve appropriate "R" levels of retrofit attic insulation for these and other very cold areas we will reconsider this limit upon receipt of a filing by the utility which would justify modification of this limit.

Under these financing limitations, up to $3,500 in cost-effective retrofit installation in each dwelling unit can receive 8% financing. In multifamily residences, the $3,500 limit applies to each dwelling unit to be weatherized. In order that renters be eligible to benefit from the 8% programs, landlords will be able to sign financing contracts for their rental property. However, we will order the utilities to develop procedures to limit their weatherization investments to units which are occupied through most of the year, because investments in intermittently occupied units offer less potential energy savings.

Additionally, we will limit eligibility for the financing programs to customers whose primary space conditioning system is supplied by the utility providing the loan. Southwest will finance installations only in homes heated by natural gas, Sierra only in homes heated or air-conditioned by electricity, and CPN to electrically heated or air-conditioned homes in its electricity districts and gas-heated homes in its gas supply districts. These programs primarily save energy used for space conditioning, so it is appropriate that ratepayers who heat with propane, oil, or wood be ineligible to receive financing when almost none of the benefits can flow back to customers of the utility providing the financing.

We will adopt liberal credit requirements for participation in applicants' 8% programs, consistent with terms offered by other utilities in their weatherization financing programs. To qualify for an 8% loan, a customer must have been a customer of a California utility for 12 months, with no shutoffs for 10 months prior to applying for an 8% loan. Such credit terms have proven workable for other utilities.

With the cost-reducing features adopted today, these programs will prove highly cost-effective as alternatives to new supply. We recognize that nonparticipating residential ratepayers of CPN and Southwest will initially pay a minimal net cost for the creation of their programs. However, the Commission notes that the flat rate purchases under which these utilities obtain supplies shift the burden of higher marginal costs to customers of "wholesale" utilities. It would be inequitable to deny to customers of CPN and Southwest access to utility-assisted financing which is made available to residential ratepayers of other California utilities. Furthermore, if the unavailability of utility financial assistance led to lower levels of conservation in CPN and Southwest service territories, larger volumes of traditional supplies would instead be purchased and consumed, shifting burdens onto customers of the "wholesale" utilities. Sierra's program is cost-effective to nonparticipants; as noted most recently in SoCal's WFCP decision (D.82-02-135) a 12% discount rate is within the range adopted in Commission decisions, while 20% is clearly outside that range. As staff calculations found Sierra's proposed zero-percent program to be cost-effective assuming a 12% discount rate, the less expensive program adopted today will be even more cost-effective.

Despite the questions raised on the record, there appears to be no uncertainty with respect to income tax treatment of revenues collected for the 8% financing programs. Since taxes are levied on net income, there will be no tax problem associated with money both collected and spent in the same calendar year. Under the balancing account procedures to be adopted today, there should be a very close match between CFA revenues and expenses in any given year. If an adverse tax ruling proves this assessment incorrect, the utilities will be required to notify the Commission promptly and to propose alternative financing methods which will minimize the incremental tax burden.

We will allow the applicants reasonable time to implement this decision. The expanded 8% programs are to be in place by November 1, 1982. We note that PG&E, SDG&E, and SoCal required on the order of four months to make their transitions to full-scale programs in their respective territories.

Each utility will be authorized to file tariffs to establish a CFA procedure, and to file for its initial CFA rate at the time of its next fuel cost adjustment filing. In the interim, each utility should push forward with implementation, recording program expenditures in a balancing account for amortization in the first CFA rate.

We note that the showings by the three utilities as to the prospective operating expenses of the proposed programs were not strictly comparable. The first-year budget estimated by CPN was substantially higher than that projected by Sierra, largely because CPN included a factor reflecting the principal amount of loans to be issued as well as related interest costs, whereas Sierra included only the interest expense. Southwest provided no comparable budget estimate. In any event, the expenses incurred by each utility will be examined in detail in the context of its periodic CFA rate filings.

Findings of Fact

1. Sierra's, Southwest's, and CPN's programs to provide interest-free loans to finance certain conservation measures, combined with their other conservation programs, would have the potential to achieve significant success in reducing the number of uninsulated homes wasting energy in their service areas, were they to be authorized.

2. Sierra's 8% residential weatherization program has resulted in only two loans in the two years of its existence.

3. The majority of residences in Sierra's service area use oil, propane, or natural gas for space heating.

4. The 8% residential weatherization loan programs are reasonable and have the potential to achieve significant success in inducing retrofit investments in residential energy efficiency, at less cost to ratepayers than ZIP.

5. In the late 1970s Sierra, CPN, and Southwest established a conservation center at South Lake Tahoe. Through this office the three utilities work cooperatively to promote conservation programs through their 8% loan programs.

6. CPN has offered an 8% conservation loan program for the past three years. It has made approximately 40 loans in its Tahoe area and 200 in its other California service areas.

7. Southwest has offered an 8% conservation loan program for the past two years. The 8% program has been reasonably successful.

8. Southwest is sharing a conservation center in southern California with SoCal and Edison.

9. To convert applicants' outstanding 8% weatherization loans to 0% would impose an additional expense on ratepayers without achieving any added conservation.

10. The offering by applicants of weatherization financing at an interest rate of 8%, as opposed to 0%, will provide participating customer interest payments to offset partially applicants' cost of providing financing.

11. Applicants can achieve reasonable penetration levels of weatherization in single-family and multifamily homes providing financing at 8% interest rates.

12. Limitations on loan amounts are appropriate to help control program costs and to ensure equitable allocation of program money among potential participants in the 8% programs.

13. It is appropriate to impose a financing limit of $1,000 for the installation of all of the "Big 6" measures; $750 for the installation of attic insulation alone; $250 for the installation of the five "Big 6" measures excluding attic insulation; and $2,500 for installation of the remaining weatherization measures to the extent they are found cost-effective by a prior energy audit.

14. Applicants should provide 8% financing for owner-occupied homes and rental property.

15. The following measures, already determined to be cost-effective, can qualify for 8% financing either with or without an energy audit: attic insulation, weatherstripping, water heater wrap, caulking, duct wrap and low-flow showerheads ("Big 6" items).

16. If an energy audit demonstrates their cost-effectiveness, the following conservation measures should also be eligible for 8% financing: wall insulation, floor insulation, storm or thermal windows, storm or thermal doors, intermittent ignition devices, and clock thermostats.

17. If an energy audit demonstrates cost-effectiveness, attic ventilation in the form of fans or vents should be eligible for financing by CPN.

18. It is reasonable to increase the cost-effectiveness of 8% financing efforts by conditioning participation on proof of installation of all "Big 6" measures.

19. Before mandatory requirements on the installation of particular measures are imposed, a transition period, during which time customers will have the option of choosing any of the eligible measures for 8% financing, is necessary to aid in the implementation of the weatherization programs.

20. It is reasonable to allow Sierra, Southwest, and CPN to recover the costs of their RCS and 8% loan programs through rates. They should file annually for rate offsets for the actual level of expenditures related to the RCS and 8% weatherization programs.

21. At the time of their annual offset filings, Sierra, Southwest, and CPN should present program data reporting numbers of loans and measures installed, expenses accrued, and projected efforts for the following year, as well as refined estimates of cost-effectiveness.

22. It is reasonable to require applicants to restrict availability of 8% loans to dwellings which are occupied substantially year-round, according to reasonable criteria to be developed by applicants.

23. It is reasonable to require the utilities to monitor bid prices for the installation of eligible measures, and to require that an additional bid be obtained by a customer when a bid is not within the reasonable range known to the utility at the time.

24. It is reasonable for applicants to establish credit requirements for participation in the 8% programs which balance the goal of maximum participation with the need to protect ratepayer funds.

25. It is reasonable to incorporate in applicants' 8% loan programs ancillary features consistent with those already included in the comparable programs of the major California utilities.

Conclusions of Law

1. Sierra, Southwest, and CPN should be authorized to implement 8% weatherization financing programs as outlined in the following order and under the terms and conditions provided.

2. The approved 8% programs are consistent with the purposes and requirements of the National Energy Conservation Policy Act of 1978 and the Energy Security Act of 1980.

3. The 8% programs will not be anticompetitive in lending or any other relevant markets and will not violate federal or state antitrust laws.

4. This order should be effective on the date signed so that applicants can most accurately plan and budget for implementation of their expanded 8% loan programs.

O R D E R

IT IS ORDERED that:

1. Sierra Pacific Power Company (Sierra), Southwest Gas Corporation (Southwest), and CP National Corporation (CPN) (the utilities) shall implement 8% weatherization financing programs throughout the California portions of their service territories in conformity with this decision.

2. Sierra, Southwest, and CPN shall offer 8% financing throughout their service areas, either with or without a prior energy audit, for the following residential energy conservation measures (measures), denominated the "Big 6" measures:

a. Attic insulation;

b. Weatherstripping of all doors and windows which lead to unheated or uncooled areas (weatherstripping);

c. External water heater insulation blankets with a minimum R-6 insulation level (water heater wrap);

d. High-quality low-flow showerheads;

e. Caulking or sealing of major cracks and other openings in building exterior and sealing of wall outlets (caulking); and

f. Insulation of accessible heating and cooling system ducts which enter or leave unheated or uncooled areas (duct wrap).

3. To the level found to be cost-effective in the course of a prior energy audit, Sierra, Southwest, and CPN shall provide 8% financing for the following measures:

a. Wall insulation;

b. Floor insulation;

c. Clock thermostats;

d. Storm or thermal windows or doors for the exterior of dwellings;

e. Electrical or mechanical furnace ignition systems which replace gas pilot lights (intermittent ignition devices); and

f. Attic ventilation in the form of fans or vents (CPN only).

4. Sierra, Southwest, and CPN shall include the following terms and procedures within their 8% financing programs:

a. Loan ceilings shall be imposed in the following amounts:

(1) $1,000 for installation of all "Big 6" measures,

(2) $750 for installation of attic insulation alone,

(3) $250 for installation of the five "Big 6" measures excluding attic insulation, and

(4) $2,500 for installation of the measures listed in Ordering Paragraph 3, to the extent they are found cost-effective by a prior energy audit.

b. After November 1, 1982, the utilities shall require as a condition of 8% financing that participating ratepayers demonstrate that all "Big 6" measures which can reasonably be installed in the dwelling unit are covered in the 8% loan package, or are already in place.

c. Repayment of loan amounts shall commence within 30 days after issuance. Both single-family and multifamily homeowners shall be eligible to participate.

d. Repayment shall be over 60 months; however, minimum monthly payments shall be $10.

e. Every 8% loan shall provide that the balance due on any loan shall be repayable in full upon the sale or transfer of ownership (other than an exempt transfer as defined below) of the property on which the weatherization improvements have been made.

f. Transfers to close relatives, as hereinafter defined, of residences which have been weatherized under the 8% program shall be exempt transfers not requiring repayment of the balance of the loan at the time of such transfer if the transferee assumes in writing all obligations of the transferor regarding the loan. An exempt transfer is defined as a transfer to a husband, wife, father, mother, grandfather, grandmother, son, daughter, brother, or sister, including such relationships brought on by adoption or marriage, without limitation, such as stepmother, stepdaughter, daughter-in-law, or mother-in-law.

g. The utilities shall monitor bid prices for the installation of eligible measures and shall require that an additional bid be obtained by a customer when a bid is not within the reasonable range known to the utilities at the time.

All 8% loan applications shall include a notice advising applicant to obtain more than one bid and noting the utility's right to require an additional bid before approving the loan.

h. For multifamily residences, 8% loans shall be available and loan ceilings imposed for each dwelling unit to be weatherized.

i. All work financed under the 8% programs shall be installed in accordance with California RCS standards and by a California RCS listed contractor or the customer.

j. The utility shall promptly inspect all do-it-yourself weatherization work installed and financed under its 8% program, and all work installed by a contractor who has not yet demonstrated his or her proficiency. The utilities may develop procedures to allow for the inspection of as little as 20% of the work of individual contractors who have demonstrated their proficiency.

k. All work financed under the program shall be covered by repair or replacement warranties equaling or exceeding those required by the State RCS plan, including a three-year manufacturer's warranty for free repair or replacement of materials and devices financed under the 8% program, but including labor costs only for the first year as provided in the State RCS plan.

l. All dwellings constructed prior to the effective date of this order will be eligible to qualify for 8% loans, except that:

   (1) Dwellings not occupied substantially year-round shall be ineligible for financing. Each utility shall develop procedures for identifying such dwellings.

   (2) Each utility shall provide financing only in dwellings in which the utility supplies the energy to operate the dwelling's primary space conditioning equipment.

m. To qualify for a loan the applicant must have been a customer of a California utility for twelve months with no shutoffs for ten months prior to applying for an 8% loan.

n. No 8% loans shall be issued for work performed after December 31, 1986.

5. Each utility shall file annual rate applications for future 8% program and RCS costs and shall include the following information in its presentations:

a. An analysis of the 8% program and RCS programs from the date of the start of the programs or from the date of the last filings, as the case may be, to the date of the current filings which show:

(1) The number of households audited,

(2) The number and type of conservation measures financed,

(3) The costs of the audits,

(4) The costs of the conservation financing program, including administrative costs, loan costs, and the costs of the conservation measures,

(5) The energy savings experienced from the measures installed,

(6) The overall costs of the energy conserved,

(7) The specific techniques and efforts which the utility has employed to reach the low-income market, the elderly, and minorities, with its 8% loan and RCS programs together with a summary of the results of its efforts to penetrate such markets.

(8) The specific techniques and efforts which the utility has employed to reach the rental market with its 8% loan and RCS programs together with a summary of the results of its efforts to penetrate such market,

(9) Data on the actual market share of weatherization products and measures financed under the 8% loan program, and

(10) Data on the hiring of auditors and inspectors relating to the utility's affirmative action responsibilities.

b. Any requests for proposed changes in the 8% loan and RCS programs to improve their efficiency and cost-effectiveness.

c. Any state or federal tax rulings which may have the effect of increasing revenue requirements associated with the programs.

6. Sierra, Southwest, and CPN are authorized to establish balancing accounts in which they shall record expenses and revenues associated with the 8% loan programs. The balance in each of these accounts will be the basis for setting a CFA rate for each utility, the revenues from which shall be credited to the balancing account. The CFA rate shall be readjusted each year to provide for recovery of estimated expenses for the following year, and to amortize any overcollection or undercollection from the preceding year. Each utility shall file its initial CFA rate application at the time of its next fuel cost adjustment filing, and shall include for accounting any expenses and revenues accruing to the balancing account between the effective date of this decision and the time of such filing.

7. CPN is authorized to establish a balancing account for its RCS program as requested to cover costs in excess of expenses allowed in its 1981 adopted test year when general rates were last set.

This order is effective today.

Dated JUL 21 1982, at San Francisco, California.

JOHN E. BRYSON
President
RICHARD D. GRAVELLE
VICTOR CALVO
PRISCILLA C. GREW
Commissioners

Commissioner Leonard M. Grimes, Jr., being necessarily absent, did not participate.

I CERTIFY THAT THIS DECISION WAS APPROVED BY THE ABOVE COMMISSIONERS TODAY.

Joseph E. Bodovitz, Executive Director

The utilities will be reimbursed for their expenses through rates charged to customers. Balancing accounts will record expenses of the RCS and 8% loan programs, and revenues from repayment of the loans. The rate adjustment will be recalculated annually.

The utilities will be able to "supply" energy through conservation at far less cost than if new gas or electricity supplies were developed to provide equivalent amounts of energy.

I. Procedural Background and Positions of Parties

Sierra, Southwest, and CPN each filed an application for authority to implement a zero interest finance (ZIP) plan and to recover the expenses incurred.1/ Because these utilities plan to implement their RCS audits and ZIP referrals on a consolidated basis around their Lake Tahoe service areas and because CPN and Southwest plan to work cooperatively on weatherization in their combined service area, the applications were consolidated for hearing.

Duly noticed public hearings were held October 5, 1981 and November 23, 1981 at San Francisco before Administrative Law Judge Banks. The matters were submitted subject to the filing of briefs due December 21, 1981.

Public Witness Testimony

October 5, 1981 was set aside to take public witness testimony. No members of the public attended the hearing.

Sierra (Application (A.) 60587)

Sierra serves a primarily residential load in California with over 99.5% of its customers purchasing power at 100 kilowatt (kW) demand or lower. This is 76% of all sales other than resale. Over 85% of its California load is centered in the Lake Tahoe Basin.

1/ Sierra entitled its proposed plan Interest Free Financing (IFF); Southwest and CPN entitled theirs ZIP. For convenience, they are ~~hereinafter~~ referred to collectively as ZIP.

Sierra proposes to include in its electric tariff a conservation financing adjustment (CFA) provision which would use advice letter filings to reflect the costs of conservation programs.

Under the proposed CFA procedure, Sierra would submit its program for approval prior to the expenditure of any funds. Any subsequent requests for new finance plans or modifications of existing finance plans would be submitted by advice letter filing.

It proposes that the Commission approve those plans which it deems appropriate and authorize recovery of the cost of such conservation projects through adjustments of customer rates. The rate adjustments would be by periodic advice letter filing and be designed to cover costs in the ensuing 12 months. Any balance in the CFA account whether positive or negative would be amortized. Advice letter filings are requested for CFA filings so that authorized changes for the CFA rate will occur concurrently with energy cost adjustment clause (ECAC) rate changes.

Testifying for Sierra was William C. Branch, vice president and comptroller, Nathan J. Shafer, supervisor of regulatory compliance, William A. Bowers, economist for sales forecasts; and Jack C. McElwee, manager of the rate department.

Branch reiterated the details of the proposal contained in the application. He explained that with the request for approval of its IFF proposal, Sierra desires to recover the cost of implementation by adjusting customer rates.

As noted in the application an energy audit would be performed for each customer expressing an interest in the IFF program. He explained that installation of the measures decided on would be done in accordance with the State RCS program.

Branch requested that Sierra be required to provide IFF financing only to residential customers with electric space heating. He noted that earlier conservation programs supplied conservation measures to customers whose homes were heated by propane and oil as well. He estimated that 5,000 of Sierra's residential customers have electric space heating, compared with 8,000 whose homes are heated from other sources. He recommended that the gas utilities be required to provide any financing to residences heated by gas.

Branch stated that Sierra is wholly committed to the conservation ethic at all levels of management as demonstrated by

> month of the program that a more active level of participation would be reached so that the amount of loans outstanding would increase during the phase in period of the program. The principal amount would be financed by the customers and it was estimated there would be approximately a three-month lag in the commencement of the principal payment. Thus, during the first year of the program, nearly one-half of the principal amount would be financed until the revenue is recovered from the customers. The interest expense was calculated at an annual cost of 20%, the currently borrowing cost."

SS He also stated that because there is an uncertainty ~~as to~~ whether the IRS would treat the first year estimated requirement of $223,600 as a taxable item, the actual amount could double if an adverse ruling is received. This amount represents an annual expense on a per customer basis of from $12.50 to nearly $23.00. Again, however, no effort was made to explain why total revenue would be taxed, rather than any net income remaining after ZIP expenses were accounted for.

For its electric districts, he stated CPN has currently pending before the Commission a request for a rate increase of approximately 27%. With the attrition allowance for all of the energy districts to be effective January 1, 1982, customers already have an adequate incentive to conserve.

<u>Commission Staff</u>

Testifying for the staff were Grayson Grove, senior utilities engineer, Conservation Branch; Robert Benjamin, research analyst, Revenue Requirements Division; and Herbert Chow, financial examiner.

SS

Grove reviewed the proposed ZIP applications and discussed the problems a ZIP program would cause the three applicants. He stated that he believed the concerns of the applicants ~~as to~~ on the

SS

wisdom of implementing a ZIP program at this time were genuine. He stated that over 50% of the customers at Lake Tahoe are second homeowners with energy consumption at about the same percentage. This, he believes, indicates that permanent homeowners are practicing conservation while second homes (rentals) are using more energy per day when occupied. He concluded that permanent customers do not appreciate the limited conservation practices of renters.

Of equal importance is the concern over what becomes of the energy saved by customers. Grove stated most of the natural gas saved by CPN would go to Southwest, which, in turn, would be sold to lower priority customers located in Arizona or Nevada. He did not address the net revenue impacts on CPN's California ratepayers of such a hypothetical transfer of gas demand out of state. Grove asked the rhetorical question of whether the cost of the ZIP program could, as alleged by CPN, cause customers to switch to some alternate fuel or conserve to the point where a rate increase would be necessary in order to maintain its operation and keep it financially sound.

He stated that after reviewing other staff witnesses' testimony he concluded that the utilities' concerns cannot be solved and that the cost-effectiveness of the ZIP program is questionable for some of the utilities in certain service territories. If one utility can be exempted due to a special problem, Grove believes
55 all should be exempted; otherwise, the Commission would have a credibility problem. He stated that perhaps this is not the time to implement ZIP programs. Because the test programs of Edison and PG&E have been disappointing a ZIP program should not be required of the smaller utilities until the larger utilities can implement a

productive program with proven results. When data substantiate that ZIP is cost-effective systemwide for the larger utilities through savings measured at the meter, the smaller utilities should again be requested to file. He stated the subsequent filings should seek a solution to various concerns, assume a high (20%) customer participation the first year, and show the financial
55 impact on the utility. If under ~~this~~ these criteria the program is not cost-effective, Grove believes it should be so stated and substantiated in the application.

59 Benjamin testified ~~as to~~ on the cost-effectiveness of ZIP plans proposed by the three applicants. He stated that he used the same cost-effectiveness methodology used in the Southern California Gas Company (SoCal) Weatherization Financing and Credits Program application (A.60446) and San Diego Gas & Electric Company (SDG&E) ZIP application (A.60546). He concluded that the societal cost of savings of all measures together (in the market penetration assumed) is lower than the assumed societal marginal cost and thus appears societally cost-effective. He stated the programs could be made more societally cost-effective by removing floor insulation, storm windows, and storm doors from the program as they are consistently the least cost-effective conservation measures.

higher rates for customers, multi-billion dollar capital requirements for utilities, and unchecked proliferation of power plants. Energy growth of these proportions is simply not sustainable... Reducing energy growth in an orderly, intelligent manner is the only long-term solution to the energy crisis."

That decision directed utilities to take aggressive steps to achieve conservation goals.

The Commission's encouragement of utility conservation activities has included admonitions that these activities be cost-effective. Included in this cost-effectiveness goal is further direction that utilities operate

55 their activities ~~so as~~ to avoid unnecessary ratepayer expenditures.

In deferring the implementation of a ZIP program for SDG&E in D.93894 dated December 30, 1981 we stated:

"A consumer considering home weatherization investments must decide whether to invest hundreds or even thousands of dollars in improvements which will be cost-effective over a five to ten year span but require an immediate commitment of funds. The Commission has recognized the important role public utilities can play in making such investments more attractive.

"The utilities have direct and regular contact with ratepayers, professional expertise regarding energy efficiency measures, and access to financing. They occupy unique positions from which to speed the penetration of energy efficiency devices. Thus, as energy costs have risen steadily, the Commission has moved step by step to adopt policies directing utilities to expand their involvement in conservation financing.

"In early 1978, the Commission ordered utilities to provide 8% loans with extended payback periods to finance ceiling and attic insulation, and to offer information and installation services. Statewide, utilities have provided 8% financing to hundreds of thousands of residential ratepayers. PG&E has been the leader in this effort. We note here, however, that Southern California Gas Company (SoCal) is now arranging several thousand 8% loans per week, to finance attic insulation. In contrast, evidence in this proceeding indicates that SDG&E has