

U/BS/FS/WPSC

Decision 93796 DEC - 1981**ORIGINAL**

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Application of GRUMMAN ENERGY )  
 SYSTEMS COMPANY for exemption )  
 from certain checklist )  
 requirements of Decision Nos. )  
 92251, 92501 and 92769. )

Application 60950  
 (Filed October 1, 1981)

O P I N I O N

On September 16, 1980, we issued Decision (D.) 92251 establishing demonstration solar financing programs for Pacific Gas and Electric Company, San Diego Gas & Electric Company, Southern California Edison Company, and Southern California Gas Company. We subsequently modified this decision by D.92501, December 5, 1980, and D.92769, March 3, 1981. In these decisions we specified a checklist of requirements for domestic solar water heaters. Solar water heaters must meet all checklist requirements to be eligible for the solar financing programs that became effective March 1, 1981.

By letter dated May 14, 1981, to the Energy Conservation Branch (ECB), which was docketed as Application 60950 on October 1, 1981, Grumman Energy Systems Company (Grumman) requested substitution of a 5% heat exchanger penalty instead of the 20% Order Instituting Investigation (OII) 42 requirement when sizing solar water heaters using the Grumman CF-100A heat exchanger module.

Grumman's Position

Grumman evaluated the F-Chart model for its solar water heater, obtaining a solar fraction of 82%. In a subsequent evaluation, an arithmetically determined adjustment was made to the instantaneous efficiency and heat loss parameters used in the computer program to describe the assumed collector's thermal performance. These adjustments were made following tests of the double wall heat exchanger Grumman uses in its CF-100A module. The reduction in system performance caused by introduction of this component into an otherwise similar system is reflected within the computer model by the substitution of a less efficient collector operating in the same system but still without a heat exchanger. The solar fraction obtained in the second case was 80%.

To this apparent 2% reduction in performance Grumman adds another 3% for other heat exchanger losses, and requests a 5% reduction overall in place of the 20% currently used.

Discussion

In D.92251 we specifically directed the staff to evaluate under a monitoring program "the extent to which solar water heating can be relied upon to provide adequate and reliable supplies of energy". We then adopted, in D.92501, a checklist by which the

installer of each system must certify that the system will deliver a net 60% solar fraction. We also required the staff to evaluate applications for exemptions to the rules.

Solar domestic water heating systems monitored in California prior to our sizing requirements have yielded solar fractions well under 60% as installed under uncoordinated industry methods. These units appear to be too small to produce worthwhile savings for their users and for ratepayers. ECB staff does not favor reductions to the present sizing requirements until such time as results of direct monitoring warrant them.

We are not persuaded by Grumman's calculations that its heat exchanger, in a representative installation under the OII 42 program, should be assumed to be four times (20%/5%) as efficient as other double wall heat exchangers.

Conclusion of Law

The substitution requested by Grumman is not adequately supported by objective system test data and should not be granted at this time.

A.60950 U/BS/FS/WPSC

O R D E R

IT IS ORDERED that:

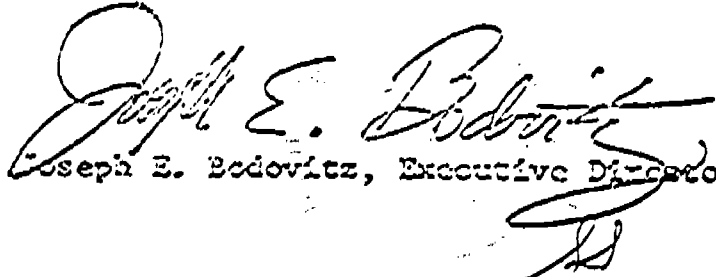
Grumman Energy Systems Company (Grumman) is denied the requested substitution of 5% for 20% heat exchanger efficiency when sizing Grumman systems for eligibility under the OII 42 utility programs.

This order becomes effective 30 days from today.

Dated DEC 1 1981, at San Francisco, California.

JOHN E. BRYSON  
President  
RICHARD D. GRAVELLE  
LEONARD M. GRIMES, JR.  
VICTOR CALVO  
PRISCILLA C. GREW  
Commissioners

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

  
Joseph E. Bodovitz, Executive Director