BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

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In the matter of Union Electric Company's tariff filing to implement an experimental residential new construction pilot program.	)))))	Case No. ET-95-209

REPORT AND ORDER

Issue Date: November 1, 1995

Effective Date: November 22, 1995

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In the matter of Union Electric Company's tariff filing to implement an experimental residential new construction pilot program.	)))))	Case No. ET-95-209

APPEARANCES:

Joseph H. Raybuck, Attorney at Law, P.O. Box 149, St. Louis, MO 63166, for Union Electric Company.

Michael C. Pendergast, Assistant General Counsel, 720 Olive Street, St. Louis, MO 63101, for Laclede Gas Company.

Gary W. Duffy, Attorney at Law, Brydon, Swearengen & England, P.C., P.O. Box 456, Jefferson City, MO 65102-0456, for Associated Natural Gas Company, Missouri Gas Energy, and United Cities Gas Company.

Lewis R. Mills, Deputy Public Counsel, P.O. Box 7800, Jefferson City, MO 65102, for Office of the Public Counsel and the Public.

Eric B. Witte, Assistant General Counsel, P.O. Box 360, Jefferson City, MO 65102, for Staff of the Missouri Public Service Commission.

REPORT AND ORDER

Procedural History

On December 22, 1994, Union Electric Company (UE) submitted tariffs with the Commission requesting authority to initiate a residential new construction pilot program. This pilot program is designed to evaluate the cost-effectiveness of a demand-side resource proposal for residential new construction, and is generally referred to as the "e-seal" program.

Responses to this tariff filing were made by the Staff of the Commission (Staff), the Office of the Public Counsel (OPC), Laclede Gas

Company (LGC), and Missouri Gas Energy (MGE). All responding parties supported the suspension of this tariff for further investigation as to whether the proposed e-seal program constituted a permissible demand-side management program under the Commission's integrated resource planning and promotional practice rules (4 CSR 240 Chapters 22 and 14 respectively).

On January 27, 1995, the Commission suspended the proposed tariff for an initial period of 120 days, to May 27, 1995. In subsequent orders, the Commission further suspended the proposed tariff for the remainder of the full statutory period, to November 22, 1995. Formal interventions were granted to LGC, MGE, Associated Natural Gas Company (ANG), and United Cities Gas Company (United Cities), all of which are regulated natural gas distribution companies within the State of Missouri. In addition, intervention was granted to the Missouri Department of Natural Resources, which chose not to participate in this litigation.

Testimony was filed in this matter, and the evidentiary hearing was held from August 7, 1995, through August 9, 1995. After a full briefing period, this case was finally submitted to the Commission for decision on October 13, 1995.

Findings of Fact

The Missouri Public Service Commission, having considered all competent and substantial evidence, upon the record as a whole, makes the following findings of fact. The positions and arguments of all parties have been considered by the Commission in making this decision. Failure to reflect a position or argument of any party to this litigation in this

Report and Order in no way indicates that the Commission has failed to consider that position or argument, but indicates only that the omitted position or argument was not considered relevant to the decision or outcome. In addition, the positions of the various gas utility intervenors in this case are largely coincident, and will generally be presented jointly.

This matter arose from the electric integrated resource planning (IRP) process, set out in 4 CSR 240, Chapter 22, of the Commission's rules. The IRP rules require UE to engage in demand-side management program development and evaluation. The procedure chosen by UE to perform its demand-side management evaluation is one in which various proposed demand-side programs are subject to a lengthy cost-effectiveness evaluation, referred to as "measured level screening analysis" (MLSA). Initiation of a pilot program is one of the specified steps in that evaluation procedure.

Accordingly, on December 22, 1994, UE submitted this tariff, requesting Commission authorization to test the cost-effectiveness of energy efficiency measures delivered to the residential new housing market through the "e-seal" program. This program provides for reimbursement directly to builders for specific installations of various passive energy efficiency measures and active high efficiency electric appliances.

Per the filed tariff, the proposed program is set to extend over a three year period and include 500 new residential housing units, 100 of which will be low income. The proposed tariff calls for a payment to the builder in the amount of $1640.00 for a single family home and $440.00 for

each residential unit in multifamily housing, if the builder has complied with the e-seal construction standards as specified in the program.

As reflected in the UE program and contained in the testimony of UE witnesses, participation in the program, and therefore payment, is calculated by awarding a certain number of points. These points are awarded for the application of various efficiency measures in the construction of new homes. The various measures, both passive and active, are set out in the UE tariff filing, and attached to this order as Attachment A. Review of Attachment A reveals that the requirements which must be satisfied in order for the builder to receive payment dictate, in brief, the construction of an all-electric home which is state-of-the-art in energy efficiency. Included in these standards are the most controversial of the required measures, electric space and water heating.

The proposed pilot program, and accompanying tariff, are filed under the auspices of the Commission's rules regarding integrated resource planning and, more specifically, demand-side management programs and promotional practices. The Commission's integrated resource planning rules are set out in 4 CSR 240-22. The promotional practice rules are contained in 4 CSR 240-14. Both sets of rules come into play in this matter.

Generally, the demand-side management rules require the electric utilities to consider various demand-side programs and establish a method of screening and evaluation to determine whether programs under consideration are cost-effective in promoting the prime goal of the IRP

rules, that being to minimize long-term utility costs. Such programs, it is hoped, will be of benefit to both the utility and the ratepayer.

One of the most obvious demand-side objectives is to promote consumer efforts to conserve load, thereby reducing added demand at peak periods, lowering present cost to the ratepayer and, potentially, avoiding expensive capital investment in the future on the part of both the utility and ratepayer. Those parts of the e-seal program involving passive measure such as insulation standards are an example of such conservation efforts aimed at reduction of both peak and overall load.

Coincidentally with passage of the planning rules of Chapter 22, the Commission amended its rules regarding promotional practices. The promotional practice rule was designed, as LGC states, ". . . to deter destructive and counterproductive utility practices" such as the offering of consideration or other incentives to build load to the enrichment of the utility but to the detriment of the ratepayers. The rule was amended, however, to allow various test and pilot programs to evaluate the cost-effectiveness of demand-side programs which met screening criteria under Chapter 22, even though such programs might constitute promotional practices. Commission variances from the rule are required for prohibited promotional practices. Load building remains a prohibited promotional practice.

The required filing of a tariff for approval to engage in various promotional practices is designed to allow the Staff, the Commission, and other interested parties to review and challenge programs felt to be

injurious or counterproductive. It is clearly within the province of the Commission to review tariffs filed in this fashion and determine whether it is appropriate for the utility to engage in a load building program and, therefore, to proceed further in the screening process.

The intervening gas utilities maintain that the proposed pilot program does not qualify as a legitimate demand-side resource program under the Commission's integrated resource planning rules, as its effect is chiefly to build, rather than reduce, load. In addition, the utilities argue that the proposed program is inconsistent with the cost-minimization and energy efficiency goals of the Commission's IRP rule.

The gas utilities urge the Commission to reject this proposed program in the pilot stage for several reasons. First, the utilities maintain that any results from the pilot program will be no more determinative of the value of the project than information currently available. The intervenors point out that the proposed pilot project has barely passed, or barely failed, the pilot level of UE's own screening analysis. With a minimum score of 1.0, testimony reveals either a failing score of .95 or a passing score of just above 1.0.

The gas utilities point out that the fundamental assumption of the pilot program, as also reflected in UE testimony, is that qualifying builders will have already, independently, chosen to construct all-electric homes. The gas utilities also point out between 80% and 90% of all new construction employs natural gas space and water heat. When combined with the narrow screening margin, the utilities maintain that, without this

fundamental assumption, the proposed pilot is a thinly disguised effort at load building.

The gas utilities also challenge the size of the pilot sample, that being 500 residential units over a three (3) year period, maintaining that the sample is needlessly large and pointing out that, should the project prove inefficient, the homeowners would be unable to choose an alternative energy source practically and efficiently.

The Staff and OPC are cognizant of the concerns of the intervening gas utilities. The Staff, however, maintains that UE's measured screening analysis is an appropriate demand-side analysis tool and has been correctly applied as pertains to the proposed program. The Staff supports approval of the pilot program as a means of gathering sufficient data to determine the potential efficiencies which might be gained from the implementation of a full blown e-seal program.

The OPC supports the Staff position and adds that it would prefer a more detailed evaluation plan, modification of the requirement for electric space heat, and use of programmable thermostats in all units as part of the e-seal criteria.

The Commission finds many worthwhile elements of the proposed program, the chief of which is the array of passive energy saving measures contained as part of the e-seal program. The Commission has examined the testimony in this matter and agrees with the Staff position in that the Commission finds that the pilot sample of 500 new homes is justifiable to obtain sufficient data to determine whether the proposed program is truly

a cost-effective means of ultimately reducing load. This finding is supported by the Staff analysis of UE's use of its MLSA system to determine the cost-effectiveness of demand-side proposals.

The Commission is aware of the concerns of the gas utility intervenors in regard to the load building potential of the proposal. The Commission states that these concerns have been noted and would point out that, upon termination of the pilot proposal, further screening analysis will occur and an additional tariff will be filed for determination as to whether the proposed "e-seal" project remains economically efficient. At that time, the gas utility intervenors will have an additional opportunity to challenge this project.

The Commission has a history of looking favorably on properly crafted pilot programs which demonstrate benefits to utilities and energy users. The Commission also finds substantial merit in the suggestion of the OPC that cooperative programs between the various utilities should be initiated for the benefit of all, including the ratepayer.

For the above reasons, therefore, the Commission will approve the proposed tariff, submitted by Union Electric Company on December 22, 1994, for service on or after November 22, 1995.

Conclusions of Law

The Missouri Public Service Commission has arrived at the following conclusions of law.

Union Electric Company is a public utility, operating in the State of Missouri, engaged in the distribution of electric service to the public,

and subject to the jurisdiction of the Missouri Public Service Commission pursuant to Chapters 386 and 393, RSMo. 1994.

Pursuant to 4 CSR 240-22.010(2) of the electric utility resource planning rule, the fundamental objective of the resource planning process is "to provide the public with energy services that are safe, reliable and efficient, at just and reasonable rates, in a manner that adequately serves the public interest."

In accordance with 4 CSR 240-22.010(2)(b), the primary selection criteria for choosing preferred resource plans is "the minimization of present worth of long run utility costs. . . ."

4 CSR 240-14.030, the Commission's utility promotional practices rules, state in part:

> (1) All promotional practices of a public utility or its affiliate shall be just and reasonable, reasonable as a business practice, economically feasible and compensatory and reasonably calculated to benefit both the utility and its customers.

The Commission finds that the proposed tariffs, filed by Union Electric Company in this matter, are just and reasonable, reasonably calculated to benefit the ratepayer, and constitute an appropriate demand-side management pilot program under the above-stated integrated resource planning rules. The Commission will, therefore, approve the proposed tariffs for implementation.

IT IS THEREFORE ORDERED:

1. That the following residential new construction pilot program tariffs, submitted by Union Electric Company on December 22, 1994, are hereby approved for service on or after November 22, 1995.

P.S.C. Mo. No. 5
7th Revised Sheet No. 125 cancelling 6th Revised Sheet No. 125
Original Sheet No. 207
Original Sheet No. 208

2. That this Report and Order shall be effective November 22, 1995.

BY THE COMMISSION

David L Rauch

David L. Rauch
Executive Secretary

(S E A L)

Mueller, Chm., McClure, Kincheloe, and Drainer, CC., Concur and certify compliance with the provisions of Section 536.080 RSMo 1994.
Crumpton, C., Absent.

Dated at Jefferson City, Missouri, on this 1st day of November, 1995.

Figure 2.0 – E SEAL SYSTEM – POINTS

Program Certification Target = 1,000 Points

REQUIRED MODULES

#	MODULE / CRITERIA	Minimum Points Required	Maximum Points Available	Example One	Example Two	Example Three
1	ENERGY EFFICIENCY (1a/1b/1c/1d)	450	650	455	515	575
2	RENEWABLE ENERGY	50	100	50	100	100
3	INDOOR AIR QUALITY	80	140	80	80	80
4	HOME WASTE MANAGEMENT	25	75	25	25	25
5	WATER QUALITY & CONSERVATION	50	90	50	50	50
6	COMFORT/SAFETY/CONVENIENCE	50	75	50	50	50
7	INFORMATION	50	100	50	50	50
	TOTALS	*755*	*1230*	*760*	*870*	*930*

OPTIONAL MODULES

#	MODULE / CRITERIA	Max Available Points	TOTAL OPTIONAL POINTS NEEDED TO REACH 1,000 POINT CERTIFICATION TARGET				
8	ENERGY & LOAD MANAGEMENT	50	245	–230	240	130	70
9	CONSTRUCTION PRACTICES	100					
10	TRANSPORTATION	50					
11	HOME SITE EVALUATION	50					
12	ENVIRONMENTAL TESTING	60					
13	HOME OPERATIONS	50					
14	ELECTRIC SERVICE	50					
15	CUSTOM ENVIRONMENTAL	100					
	TOTALS	*510*	*245*	*–230*	*240*	*130*	*70*
	GRAND TOTALS		*1000*	*1000*	*1000*	*1000*	*1000*

Oct–93

POINTS SUMMARY

Attachment A

Residential New Construction Program E-Seal Certification Summary			
		Certification Points	Module Total
MODULE 1.	ENERGY EFFICIENCY		515
1A. Thermal Envelope, Space Conditioning and Water Heating 30% Less than CABO Model Energy Code		350	
	1. R-13 Wall Insulation 2. R-38 Ceiling Insulation 3. R-11 Basement Wall Insulation (2 feet below grade) 4. Infiltration Reduction Sealant Package 5. Low-E Double Pane Windows 6. 12 SEER Cooling 7. 7.5 HSPF Heating		
1B. HVAC Design and Performance		75	
	1. HVAC system sized to Manual J 2. Ductwork designed to Manual D 3. Ductwork Seams/Joints sealed 4. Ductwork in conditioned space or insulated to Manual D.		
1C. Appliances		80	
	1. Efficiency of electric water heater, dishwasher, and refrigerator, exceeds current NAECA standards by 10% (when provided by builder)		
1D. Lighting		10	
	1. All outdoor lighting (except entry, walkway, and decorative lighting) controlled by photo cells, timers or motion sensors.		

The final points earned for each component of the program will be determined by EEI and their subcontractor, A&C-Enercom.

Residential New Construction Program E-Seal Certification Summary			
		Certification Points	Module Total
MODULE 2.	RENEWABLE ENERGY		50
	1. Program credits home performance for contribution of renewable energy.	50	
MODULE 3.	INDOOR AIR QUALITY		85
	1. Meet ASHRAE standard 62-1989 ventilation for acceptable IAQ.	25	
	2. Provide equipment and controls for proper humidity control, especially in high humidity areas such as kitchen and bath.	10	
	3. Install electric, electro-static or other high efficiency air filtering system.	15	
	4. Prevent contamination of ductwork during construction.	5	
	5. Provide outside combustion air and direct venting of combustion equipment.	20	
	6. Utilize low toxicity adhesives, sealers, paints and finishes during home construction.	10	
MODULE 4.	HOME WASTE MANAGEMENT		35
	1. Incorporate garbage disposal in kitchen.	5	
	2. Service area recycling of glass, plastic, metals, etc.	10	
	3. Service area appliance recycling.	10	
	4. Service area disposal sites for home generated toxic wastes (used motor oil, household chemicals, etc.)	10	

The final points earned for each component of the program will be determined by EEI and their subcontractor, A&C Enercom.

Residential New Construction Prog. .n E-Seal Certification Summary			
		Certification Points	Module Total
MODULE 5.	WATER QUALITY AND CONSERVATION		50
	1. Indoor low water usage equipment package (faucets, showers, toilets)	25	
	2. Lead-free faucets used throughout home.	10	
	3. Washing machines and dishwashers have water/energy conserving cycle capabilities (when provided by builder).	10	
	4. Automatic timer controls for outdoor sprinkling systems	5	
MODULE 6.	COMFORT, SAFETY, AND CONVENIENCE		50
	1. Programmable thermostats 2. Smoke alarms or temperature sensors	50	
MODULE 7.	INFORMATION		75
	1. Provide broadly distributed information on energy efficient home design, environmental benefits of energy efficiency, energy systems and equipment, etc.	50	
	2. Provide training to builders, contractors, and trade allies on above issues.	25	
MODULE 8.	ENERGY AND LOAD MANAGEMENT		75
	1. Time-of-use rates available to customers.	25	
	2. Appropriate technology installed to facilitate customer participation in time-of-use rates.	50	

The final points earned for each component of the program will be determined by EEI and their subcontractor, A&C Enercom.

Residential New Construction Program E-Seal Certification Summary			
		Certification Points	Module Total
MODULE 9.	CONSTRUCTION PRACTICES		10
	1. Home designed and/or materials specified to minimize construction waste.	10	
MODULE 13.	HOME OPERATIONS		15
	1. Testing and balancing of home HVAC energy systems. 2. Home ventilation "flush" prior to occupancy to help remove pollutants.	10 5	
MODULE 14.	ELECTRIC SERVICE		5
	1. Electric circuit(s) provided for zero emission outdoor appliances, lawn care and other equipment.	5	
MODULE 15.	CUSTOM ENVIRONMENTAL ACTIVITIES		60
	1. Burning of used tire chips at Sioux Plant. 2. Production of autoclaved cellular concrete blocks from fly ash.	60	
		TOTAL POINTS	1025

The final points earned for each component of the program will be determined by EEI and their subcontractor, A&C Enercom.