• Method of testing the invention to determine energy savings.

The Department solicits comments, data, and information respecting the letter.

By publishing this letter and requesting comments, the Department is not expressing a view as to the technical feasibility or economic justification of this mechanism as an energy saving device to be used with refrigerators and refrigerator-freezers.

Issued in Washington, DC, on July 13, 1995.

Christine A. Ervin,

Assistant Secretary, Energy Efficiency and Renewable Energy.

Edward Schulak Equities, Inc.

- Christine Ervin, Assistant Secretary for Energy Efficiency and Renewable Energy.
- March 14, 1995.
- Mr. Michael J. McCabe, Director, Office of Codes and Standards, U.S. Department of Energy, 1000 Independence Ave., SW., Washington, DC 20585.

Ladies and Gentlemen: 1. Petition for Waiver-In accordance with 10 CFR, Part 430.27 this is a Petition for Waiver from the test procedure set forth in 10 CFR, Part 430, Subpart B, Appendix A-1, adopted August 10, 1982 and revised January 1, 1993 and for the use of an alternate test procedure described in paragraph 4 below. (Edward Schulak Equities, Inc. "ESE" recognizes that the Waiver process may not be the appropriate forum and we would like this request to be considered in whatever forum the Department of Energy "DOE" would consider appropriate, such as a Petition for Rule Making.) ESE has been granted U.S. Patent No. 5291749 which documents a unique technological breakthrough for which the required Appendix A-1 test procedure referenced above will not produce energy consumption results which correctly represent the enhanced energy savings possible and thereby the performance of this refrigerator.

2. Background Information-ESE was granted U.S. Patent No. 5291749 Titled: Energy Efficient Refrigeration System which documents a method of saving energy through increased efficiency in any commercially available refrigerator model. The company is familiar with DOE test procedures (specifically 10 CFR Part 430) and the FTC Energyguide labeling requirements. Further, the company engaged ETL Testing Laboratories "ETL" to independently confirm the validity of the energy savings possible with the above referenced patent, and to confirm the ineffectiveness of the existing DOE testing procedures to accurately produce energy consumption results with the above referenced patent (a copy of the ETL Reports No. 536692A, 538479B & 539826 are included as Exhibits A, B & C). In our opinion, the applicable DOE test procedure, which was designed for self contained units, has no provision to test a unit which transfers energy from cool external air into the unit's refrigeration cycle and thereby

reducing the unit's overall energy consumption. The introduction of external cool air blown across the refrigerators condenser and compressor can be adapted to any rear or bottom mounted condenser model and has demonstrated (as confirmed by ETL) energy savings in excess of 25% of total power consumed by the unit.

3. Specific Test Procedure Problems—With the test conditions and procedures currently prescribed by DOE, energy consumption of a refrigerator equipped to allow the ingress of cool air over the condenser/compressor would not be addressed. The existing test procedures were written strictly for self contained models. A test procedure to standardize the energy savings achieved on models equipped to receive external cool air is currently not allowed and therefore the energy savings cannot be officially measured and documented.

As a result the dollar savings achieved through this technology can not be listed on the FTC Energyguide label and buyers can not be informed of the savings possible by purchasing a refrigerator engineered to utilize cool external air. It should be noted that there is already different test procedures established for measuring the energy consumption of unvented home heating equipment (Part 430, Subpart B, Appendix G) from that of vented home heating equipment (Part 430, Subpart B, Appendix O). With this new technological breakthrough there is now reason to consider a similar vented and unvented test procedure for refrigerators and freezers.

4. Alternate Test Procedures-At the present time ESE does not have a proposed alternate test method for refrigerator/freezer utilizing this technology. However, the work commissioned by ESE and completed by ETL provides a basis for developing a simple test procedure for refrigerator/freezers adapted to accept external cool air as proposed by ESE. The trials at ETL suggest that no existing DOE test conditions or procedures need be modified or deleted, but a provision needs to be added to allow the introduction of external air at specific temperature (°f) and airspeed (cfm) across the unit's condenser/ compressor. The existing DOE test formulas and procedures would be unaltered. While the cool air would be introduced into and out of the unit, the unit is tested in full accordance with the existing 10 CFR, Part 430. For clarity, no test procedure need be altered or changed, but simply the conditions be expanded to allow cool air to be introduced in a consistent, repeatable manner to ensure that both the energy saved is measured in a consistent manner and that the savings can correspondingly be listed on the FTC Energyguide label.

5. Public Policy Considerations—Since innovation is an essential part of the Congressionally mandated energy conservation programs, it is in the public interest for DOE to facilitate introduction of new product technology like alternative air ducting which have the potential for saving energy by reducing the number of compressor cycles needed to keep a refrigerator/freezer cool.

6. *Manufacturers*—No existing appliance manufacturer in the United States market

manufactures a model adapted to accept external cool air. In the discussions we have had with manufacturers and their consultants, they have clearly indicated that there is no advantage for them to utilize energy saving technology if it does qualify for the DOE Energuide Label. Manufacturers will not consider incorporating this new technology because the associated energy savings can not be quantified under the currently existing DOE Test conditions and procedures. Without an appropriate alternate test procedure, the savings can not be officially sanctioned and therefore are not allowed to be listed on an FTC Energyguide label. The adaptation that allows external cool air to flow over the condenser and compressor could apply to any existing model sold presently in the United States.

If additional information is required, please contact me at (810) 644–1500.

Respectively,

Edward Schulak,

President. Enclosures:

Exhibit A—ETL Report No. 536692A Exhibit B—ETL Report No. 5291749 Exhibit C—ETL Report No. 538479B

Attachment A

"* * * the present invention provides an energy transfer system for a household refrigeration appliance. The energy transfer system includes a compartment for enclosing the condenser, which is associated with the refrigerator, and a set of conduits for enabling the transfer of outside air into, through, and out of the compartment. The system also includes a movable barrier for selectively controlling the transfer of air through the compartment. In one form of the present invention, the system also includes a thermostatically actuated fan for forcing outside air into, through, and out of the compartment in response to a predetermined temperature.

"The set of conduits preferably includes a first conduit for enabling the transfer of outside air to the compartment, and a second conduit for enabling the transfer of air from the compartment to the outside environment. Each of these conduits are disposed such that they extend through an external wall of said household. To facilitate the convection flow of air, the outlet of one conduit is connected to the compartment at a location which is lower than an inlet connection of the other conduit.

"Referring to Figure 1, a perspective view of a household refrigeration appliance (10), in accordance with the present invention, is shown. More specifically, the household refrigeration appliance depicted in Figure 1 is a domestic refrigerator which has been retro-fitted with the energy transfer system (12), in accordance with the present invention. However, it should be understood that the principals [sic] of the present inventions are equally applicable to a domestic refrigerator, which has been constructed at the originating factory to include a built-in energy transfer system.

"As shown in Figure 1, the refrigerator (10) generally includes at least one door (14) across its front and a serpentine tube