However, when the material at issue is viewed in the context of the whole proceeding, reasons adequate to support a severely restricted final in camera order[90/] do emerge.

Out of an 805 page transcript, the final in camera order will place under seal selected testimony totalling less than 1-1/2 pages. Though the wisdom of the decision with respect to those 1-1/2 pages is unrelated to the quantity of material that has been released, its resonableness is not. More importantly, the evidence at issue had no bearing on the Presiding Officer's INITIAL DECISION in this matter. It does not form the basis for any Findings

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90/ In the transcript, for example, although certain answers given by Respondents' witness have been protected, Enforcement Counsel's suggestion that their questions which prompted those answers not be similarly protected, has been accepted. So, too, has Enforcement Counsel's suggestion that in view of Respondent's failure to show the necessity for an indefinite termination date for an in camera order, that a two year time limitation be imposed.

of Fact or Conclusions of Law. 92/ Yet, the likelihood that competitive harm could result from the release of at least some of the financial balance sheet and profit and sales information at issue, if it is truly not available to the public from other sources, would appear -- despite Respondents' unimpressive showing on this point--to be not insubstantial. Additionally, the possibility of future access to even this limited information, if any member of the public so requests it under the Commission's Freedom of Information Act procedures, would remain unimpaired by a "final" in camera order entered in this proceeding. Finally, and of a strictly equitable and therefore largely irrelevant nature, counsel for Respondents have made the representation in their Supplemental submission that Respondents' corporate officers "held back nothing and imposed no time constraints in their efforts to answer questions by Enforcement Counsel" related to this material and may not have clearly understood the Commission's procedures with respect to such information.

For all of these reasons, then, Respondents' Motion for in camera treatment for certain transcript pages and three Enforcement Counsel Exhibits is granted, in part, and a severely restricted, separate, final in camera order has been issued this date.

92/ Had the decision on the merits been otherwise, however, it might have played a more important role.

(i) Miscellany

(A) Enforcement Counsel Exhibit 7 is a damaged refrigerator channel. At the hearing, Respondents vigorously objected to its admission into evidence on a variety of grounds, all of which were equally as vigorously resisted by Enforcement Counsel. 92/ The Presiding Officer overruled Respondents objection, however, holding that the technical rules of evidence applicable in jury trials do not apply to proceedings before Federal agencies in the absence of a statutory requirement that such rules be observed, 93/ and that problems of chain of custody and possible alterations of the exhibit were matters going to the weight or degree to which reliance may be placed on the exhibit in the INITIAL DECISION rather than to its admissability. 94/

92/ See Tr., pp. 636-43.

93/ See, e.g., Richardson v Perales, 402 U.S. 389,410 (1971); F.T.C. v Cement Institute, 333 U.S. 683, 705-06 (1948); Opp Cotton Mills v Administrator, 312 U.S. 126, 155 (1941); Rosedale Coal Co. v Director, 247 F.2d 299 (4th Cir., 1957); 5 U.S.C. § 556(d); Section 1025.63 of the Rules of Practice.

94/ Tr., p. 643. Similar principles were invoked by the Presiding Officer at an earlier point in the hearing to admit disputed testimony offered by Respondents. See Tr., pp. 11-12; Docket #s 64, 65, 69, 70.

Respondents' objections to the admission of two damaged refrigerator timers, Enforcement Counsel Exhibits 10-A and 10-B, was also overruled on the same grounds. 95/

Subsequent to these rulings, at closing argument, Enforcement Counsel substantially altered its position with respect to the identity, origin and integrity of the damaged channel, E.C. Ex. 7. Enforcement Counsel stated:

> Upon further inquiry into the circumstances surrounding the receipt at the CPSC on July 9, 1974 of physical evidence offered in this proceeding, . . . although the gray metal channel [E.C. Ex. 7] was taken from the Salazar refrigerator, we now have doubts that the Salazar timer was contained in the channel at the time it was presented to the Commission. In fact, from what we have been able to piece together, it is likely that the timer was not attached to the channel when it was submitted to the Commission. What appears to have happened is that when the physical exhibits were sent to the Commission's Bureau of Engineering Sciences for evaluation, the engineers placed the Salazar timer in the channel . . . .
>
> Because we believe this may have happened, Enforcement Counsel do not intend to rely on any physical observations by our experts which specifically concern the condition of the individual timer and its relationship to the timer (sic). However, we do intend to rely on observations that have been made concerning the individual condition of the timer itself and the channel itself. 96/

95/ Tr., pp. 644-46.

96/ Tr., pp. 787-88 (emphasis added).

In view of the lateness and substance of this admission by Enforcement Counsel, the confused status of this exhibit, and the inadequacy of the belated proposal by Enforcement Counsel "not to rely" on portions of the testimony and evidence offered concerning this exhibit, 97/ the Presiding Officer has concluded that despite the liberal standard for the admissability of evidence alluded to above, Enforcement Counsel has failed in this instance to satisfy its burden of persuasion as to the relevancy and reliability of this exhibit. 98/

Accordingly, the prior ruling of the Presiding Officer admitting Enforcement Counsel Exhibit 7 into evidence is withdrawn, and Respondent's objection thereto is sustained. None of the testimony offered by Enforcement Counsel witnesses based upon their observations of this exhibit have been relied upon by the Presiding Officer in reaching her INITIAL DECISION in this matter.

(B) An employee of the Consumer Product Safety Commission, who had acted as an investigator in this case, also served as the translator for the testimony of two

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97/ See Docket #78, pp. E-1 through E-29.

98/ "(T)he proponent of any factual proposition shall be required to sustain the burden of proof with respect thereto . . . Irrelevant, immaterial, unreliable . . . evidence shall be excluded." Sections 1025.63(a), (b) of the Rules of Practice.

witnesses who had earlier figured in her investigation. For this reason, Respondents urge that the testimony of these witnesses be struck. 99/

Commission employees may properly serve as interpreters in Commission proceedings as long as they are qualified to interpret, and do so accurately and with impartiality. See Lujan v United States, 209 F.2d 190, 192 (10th Cir., 1953). See also United States v. Lozano, 511 F.2d 1, 6 (7th Cir., 1975); Chee v United States, 449 F.2d 747, 748 (9th Cir., 1971). Here, given the presence of an independent interpretator available to Respondents who was repeatedly offered the opportunity to object, clarify or play back the tape made of the witnesses' testimony, 100/ and the opportunity of the Presiding Officer to observe the qualifications, accuracy and professionalism of the translator, the Presiding Officer concludes that there "is nothing in the record to indicate or from which it can be inferred that any part of any witness'

99/ Docket #78, pp. F-16 through F-26.

100/ See, e.g., Tr., pp. 24-25, 34.

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testimony was misinterpreted to convey an erroneous meaning or impression . . . ." 101/ Therefore, Respondents' motion is denied. 102/

101/ United States v Lujan, supra, 209 F.2d at 192.

102/ Of course, had Enforcement Counsel utilized the services of a Commission employee who, unlike the interpreter in this case, had had no prior involvement with the investigation of this matter, even the possibility of a suggested impropriety in the interpreter's selection would have been avoided.

(C) In view of the problems encountered in this proceeding related to the procedures to be utilized by the parties in securing subpoenas ad testificandum and duces tecum, [103] and the questions that have been raised about the authority underlying the Commission's delegation through the Rules of Practice of its subpoena power to the Presiding Officer and the parties, [104] the Commission may wish to provide further clarification of Sections 1025.53 and 1025.54 of its Rules of Practice. [105]

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[103] See Docket #s 27, 40, 51, 56, 58, 62, 63 and 67.

[104] Compare Sections 27(b)(3) and 27(b)(8) of the Consumer Product Safety Act with Section 27(b)(4) and Sections 1025.53 and 1025.54 of the Rules of Practice.

[105] At the request of Enforcement Counsel, subpoenas ad testificandum were issued to Enforcement Counsel witnesses Mr. and Mrs. Archer and Mr. Morgan. Prior to the hearing, direct testimony from each of these witnesses had been filed (Docket #53), and further direct testimony by Respondent witness Clarkson related to the testimony of the Archers and Mr. Morgan had also been filed. Docket #71. After the subpoenas had been issued by the Presiding Officer and served, Enforcement Counsel decided not to offer the testimony of these witnesses, and apparently advised them that the subpoenas issued by the Presiding Officer need not be obeyed. See Tr., pp. 287-93. As a result, neither the direct testimony of the Archers and Mr. Morgan, nor the related direct testimony of Mr. Clarkson, was either admitted into evidence or considered by the Presiding Officer in reaching her INITIAL DECISION. The Commission may wish to consider, however, whether further amendment to the Rules of Practice directed to this type of situation would be appropriate.

Having fully considered, with the two exceptions listed below 106/, all of the preliminary legal matters raised in this case, the merits of this controversy are next addressed.

106/ Respondents also moved to rescind the Notice of Enforcement on the ground that Section 15 of the Consumer Product Safety Act upon which it is based is unconstitutionally vague (Docket #s 15, 29) and the ground that the remedies of Section 15 may not constitutionally be applied restrospectively. Docket #s 13, 30. Enforcement Counsel opposed both Motions. Docket #s 44, 46. In view of the Presiding Officer's decision on the merits, the firmly established judicial preference for avoiding unnecessary adjudication of constitutional questions, and the absence of authority in the Commission in any event to delcare this congressional enactment unconstitutional, the Presiding Officer should not, need not, and does not reach the merits of either of these Motions, except to note that the restrospectivity question has been decided adversely to Respondents by Commission Administrative Law Judge Pfieffer in his Interim Initial Decision in the Matter of Relco, Inc., CPSC Docket No. 74-4. An appeal in that matter is presently pending before the Commission.

Merits of the Controversy

(a) Decision Elements

(Facts and Law to be Considered)

The first level decision required in this case is: Does the Kelvinator refrigerator present a substantial product hazard. If the decision is affirmative, the Presiding Officer must determine whether notification under Section 15(c) of the Consumer Product Safety Act and/or an order for action under 15(d) of that Act is required.

"Substantial product hazard" is defined in Section 15 (a) (2) of the Consumer Product Safety Act as a product defect which (because of the pattern of defect, the number of defective products distributed in commerce, the severity of the risk, or otherwise) creates a substantial risk of injury to the public.

The Report of the House Commerce Committee sheds some light on the Congressional intent. According to that Report, the definition of substantial product hazard "looks to the extent of the public exposure to the hazard. A few defective products will not normally provide a proper basis for compelling notification under this section.[107]

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[107] Report No. 92-1153, 92nd Congress, Second Session, June 20, 1972, p. 42.

In order to be able to conclude as a matter of law whether the Kelvinator refrigerator does or does not present a substantial product hazard the two issues which must be resolved are:

Issue I: Is there evidence in the record to support the finding that a product defect exists?

Issue II. Does a proven defect create a substantial risk of injury to the public because of

- the pattern of the defect
- the number of defective products distributed in commerce
- the severity of the risk
- or, otherwise.

As far as the resolution of these issues is concerned, Enforcement Counsel shall have the burden of proof to sustain the violations alleged in the notice of enforcement, but the proponent of any factual proposition shall be required to sustain the burden of proof with respect thereto. 108/

In order to resolve Issue I (Is there evidence on the record to support the finding that a product defect exists), it is necessary to consider: (1) product defect analyses in the form of test data and/or scientific judgement; (2) field incidents analyses.

108/ The Rules of Practice (Section 1025.63(a)).

In order to resolve Issue II (Is there evidence to support the contention that a proven defect creates a substantial risk of injury to the public?), it is necessary to consider in toto: (1) the probability of the defect existing in a given product; (2) the number of defective products in distribution; and (3) the severity of the risk;

(b) Findings of Fact

Issue I: Is there evidence in the record to support the finding that a product defect exists?

Prior to discussing findings relative to a possible defect in the Kelvinator refrigerator, it is necessary to outline the findings relative to the design and operation of refrigerators in general and the Kelvinator refrigerator in particular. 109/

(A) General Theory of Operation of a Refrigerator

(24) In a refrigerator, "cold" is produced by the ability of the liquid refrigerant -- called freon -- to absorb heat from the surrounding atmosphere when it evaporates within a hermetically-sealed refrigeration system. In an electric refrigerator, the freon is circulated througout the refrigeration system by an electrically-operated pump called a "compressor". The liquid freon is forced through a narrow

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109/ The refrigerators subject to this proceeding have been referred to as the "first generation" refrigerators by Mr. Dolan President of Kelvinator, Inc., because these were the refrigerators of Model 140, 160 and 180 manufactured between 1970 and 1973. R. Ex. A, p. 6. The phrase "Kelvinator refrigerator," as used in this DECISION, refers to the refrigerators subject to this proceeding.

capillary tube about the size of a hypodermic needle into a substantially more voluminous "evaporator" resembling a car radiator located within the insulated refrigerator cabinet. As the freon enters the evaporator, it expands into a cold gas, absorbing heat from the refrigerator's interior. This heat laden freon gas is then sucked out of the evaporator through a gas suction tube by the compressor located outside of the refrigerator cabinet. The compressor compresses the freon gas and forces it through the cooling condensor located on the back and outside of the refrigerator cabinet. During this process of compression and cooling, the freon gives up its heat and is changed back into a liquid. It is then transmitted through the capillary tube back to the evaporator where it once again evaporates into a gas, absorbing more heat from the interior of the refrigerator. The degree of refrigeration is controlled by the operation of the compressor which in turn is governed by a thermostat located within the refrigerator. 110/

(25) The function of the automatic defrost system employed in modern refrigerators is to remove, on a regular, automatic basis, the frost which collects on the evaporator's cooling surfaces within the refrigerator. In most refrigerators -- including those under consideration in this case -- defrosting is accomplished by use of an electric heating element mounted within the evaporator. After a

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110/ R. Ex. A, p. 4.

predetermined length of time (some five hours, forty-three minutes, in the refrigerators in question), the timer activated defrost switch simultaneously de-energizes the compressor and energizes the electric heating elements in the evaporator. During the "defrost cycle" -- which lasts for 17 minutes in the refrigerators in question -- the heating element melts any frost which has accumulated on the surfaces of the evaporator. This melted frost is carried away from the evaporator by a drain tube which runs out of and down the back of the refrigerator cabinet. At the end of the defort cycle, the defrost timer switch de-energizes the electric heating element and re-energizes the compressor, returning the refrigerator to its normal refrigeration cycle. 111/

(B) Design and Operation of the "First Generation" Kelvinator Refrigerator

Relevant Design Features:

(26) A metal channel which was placed on the back of the refrigerator provides a passageway for the group of electric wires which connect the power cord to the various electrical components within the refrigerator. The wires are grouped together as an assembly called a "wire harness". A heat exchanger, consisting of a capillary tube and a freon suction tube, is also placed within the metal channel, and

is covered by a tube of foam insulation. A defrost timer switch controlling both the defrost and cooling cycles is installed at the bottom of the channel. 112/

(27) The defrost timers used in the Kelvinator refrigerators in this proceeding are placed in close proximity to, and immediately below, a wiring harness as well as polyolefin foam insulation surrounding a freon tube. 113/

(28) The defrost timers used in Kelvinator's model refrigerators are not sufficiently enclosed so as to bar access of contaminants. 114/

(29) A chemical analysis performed by the National Bureau of Standards revealed that the defrost timer switch used contains three plastic components (i) the main switch housing made of a phenolformaldehyde resin; (ii) a back cover plate made of poly phenyleneoxide; and (iii) a shield over the terminals made of nylon-66. In addition, analysis of the insulation on the wiring in the switch revealed that it was poly (vinyl chloride). The terminals inside the casing are separated by cavities molded of the

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112/ R. Ex. A, pp. 7-9.

113/ R. Ex. A, p. 13; R. Ex. A-2.

114/ R. Ex. A, pp. 21-22.

phenol-formaldehyde resin and are sealed within these cavities by an epoxy resin. 115/

Through spectrographic analysis, the polyolefin foam insulation surrounding the freon tube was determined to be ethylene vinyl acetate (EVA). 116/

Relevant Operating Features

(30) The basic operation of the Kelvinator refrigerator subject to this proceeding and its defrost system is identical to that outlined in findings 24 and 25. 117/

(31) The refrigeration cycle in Kelvinator's first generation model refrigerators operates on a six hour basis. After five hours and forty-three minutes, the timer activated defrost switch in these refrigerators simultaneously de-energizes the compressor and energizes the electric heating elements in the evaporator. The "defrost cycle" thus lasts for a maximum of 17 minutes of every six-hour period of operation in the refrigerators involved in this proceeding. Upon completion of this period, the defrost timer de-energizes the electric heating element

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115/ E.C. Ex. 109.

116/ Tr., 330

117/ R. Ex. A, pp. 4, 5.

and re-energizes the compressor, returning the refrigerator to its normal refrigeration cycle. 118/

(32) A schematic diagram 119/ is inserted in the Appendix to the Initial Decision in order to illustrate the manner in which a defrost timer controls the flow of electric current during both the refrigerator cycle and the defrost cycle of a 1st generation model Kelvinator refrigerator. The four male terminals in the timer are numbered (starting at the top and going downward) as No.'s 2, 3, 4 and 1. The 120 volt power supply (from a household wall recepticle) goes to terminal No. 3. The power to terminal No. 3 also supplies 120 volts to operate the defrost timer (an electric motor). A cam (located alongside and to the right of terminal No. 3) is controlled by the defrost timer, which automatically cycles the cam between contact 2 and contact 4. As further illustrated in the diagram terminal No. 2 supplies current to the heater, while terminal No. 4 supplies current to the compressor. During normal operation, when current is being supplied to the heater, there is no current to the compressor. Likewise, during normal operation, when current is being supplied to the compressor, there is no current to the heater. 120/

118/ R. Ex. A, p. 5.

119/ E.C. Ex. 18.

120/ Tr., pp. 420-23.

(33) Terminal No. 1 in the defrost timer supplies the ground path - or common return - for electric current that is being provided the defrost timer. The connection between terminal No. 1 and the defrost timer motor completes the necessary circuit that allows the defrost timer to operate.

(34) During normal operation, with the refrigeration cycle operating on a six hour basis, the cam is in contact with the blade from terminal No. 4 for five hours and forty-three minutes. With the circuit thus "closed" between terminal No. 3 and 4, 120 volts is supplied for this period of time through the supply wire terminal (No. 3), then through the contact, and back through terminal No. 4 to operate the compressor. During this same period of time, the circuit is "open" between terminal No. 2 and 3. Thus, since current is being supplied to the compressor, there is no current to the heater. [12]/

(35) At the end of the five hour and forty-three minute period, the defrost timer automatically cycles the cam away from the blade extending from terminal No. 4 (thus opening the circuit between terminal No. 3 and 4) and toward the blade extending from terminal No. 2, so that contact with the blade from terminal No. 2 permits current to flow through the supply wire terminal (No. 3), then through

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[12]/ Tr., pp. 420-23.

terminal No. 2 to operate the heater. The circuit is "closed" between terminal No. 2 and 3, permitting current to flow to the heater, for a maximum period of 17 minutes. 122/

(36) A thermostat, located between terminal No. 4 and the compressor, closes the contacts to a thermostat switch when the refrigerator is too warm. This allows current to flow to the compressor in order to cool the refrigerator. Then, when the refrigerator is cold, the thermostat to the compressor will open the contacts to the thermostat switch so as not to operate the compressor needlessly. Thus, the compressor does not necessarily operate the entire five hours and forty-three minutes allotted it by the timer motor for the refrigeration cycle. 123/

(37) A thermostat is also located between terminal No. 2 and the heater to close contacts to a thermostat switch when the freezer is too cold. This allows current to flow to the heater in order to defrost the freezer. Then, when the freezer is warm (defrosted), the thermostat to the heater will open the contacts to the thermostat switch so as not to operate the heater needlessly. Thus, the heater does not necessarily operate the entire 17 minutes allotted it by the timer motor for the defrost cycle. The contacts to the termostat switch close at 20°F (permitting current

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122/ Tr., pp. 420-23.

123/ R. Ex. G-7, E. C. Ex. 18, Tr. p. 421-23.

to flow to the heater so that the freezer is defrosted) and open at 50°F (opening the circuit so that the heater will not operate needlessly. 124/

C. Product Defect Description (Evidence Provided in the Record)

(38) A product defect exists because: Moisture forms and builds up on the insulation surrounding the freon tube in the channel and adjacent wiring harness. That moisture drips onto the area between the terminals in the defrost timer. Contaminants enter the terminal area. When that moisture and contamination are present in the area between the terminals, arcing takes place resulting in a heat build-up. The heat build-up leads to carbonization which leads to further heat build-up. That condition is sufficient to blacken, shrink, melt, or ignite the component materials within the channel. Ignition of the component materials leads to fire and/or smoke. When there is fire it is possible for the flames and/or smoke to escape the confines of the channel.

124/ R. Ex. G-7; E. C. Ex. 18, Tr. p. 421-23.

Evidence in the record in support of this finding:

(38)(a) Moisture forms and builds up on the insulation surrounding the freon tube in the channel and adjacent wiring harnesses.

. Based on an observation of damaged timers and laboratory tests, Davock, of the Detroit Testing Laboratory (DTL), concluded that moisture came from condensation on the insulation tubing covering the freon suction tube. According to Davock the condensation build-up could be visually observed. 125/

(38)(b) That moisture drips onto the area between the terminals in the defrost timer.

. An extension of the observation made by Davock (DTL) was that the moisture which forms on the insulation tube and wiring harness might drip onto the area between the terminals in the defrost timer. Specifically, Detroit Testing Laboratory concluded that if the refrigerator was operated in a moist warm environment, moisture would condense on the suction tube insulation and wiring harness. Under such circumstances, the condensation would drip off the insulation or wires; and depending upon

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125/ R. Ex. D, p. 8; Tr., pp. 623-25.

the alignment of the insulated freon tube and the harness within the channel, if this condensation dripped off, it would drip into the timer terminal area. 126/

(38)(c) Contaminants enter the terminal area

. According to Mr. Thomas Dolan, President of Kelvinator, Inc., in 1972 when the company became aware of a problem within the timer area of the refrigerators they "found evidence of bugs, or moisture, or both in the terminal area. They hypothesized that [they] were caused by insect contamination and/or moisture. It was thought that the warmth of the timer attracted roaches and they and their secretions and moisture might be conductive enough to cause a current leakage between the timer terminals." 127/

. Detroit Testing Laboratory reached the conclusion that contaminants enter the area and so stated in drawing the following conclusion: "Our tracking tests confirmed our original hypothesis that these timer failures were most probably caused by moisture and contaminants finding their way into the timer terminals . . . " 128/

126/ R. Ex. D, p. 9.

127/ R. Ex. A, p. 21-22.

128/ R. Ex. D, p. 11

(38)(d) When that moisture and contamination are present in the area between the terminals, arcing takes place resulting in heat build-up. The heat build-up leads to carbonization which leads to further heat build-up

. According to Dolan, some timers installed have failed due to moisture and contamination around the four male terminals which protrude from the timer mechanism. He further testified that moisture and contamination has led to current leakage and a "short" resulting in carbonization at the terminals of the timer. 129/

. Davock concluded based on scientific judgment and tests that moisture accumulated on the material which holds, separates, and insulates the four brass terminals. The moisture established a conductive path between two or more of the terminals with the path permitting current to leak between the terminals. The leakage caused carbonization, the carbonization increased conductivity which increased the current leakage bringing about more carbonization. 130/

129/ R. Ex. A, p. 21.

130/ R. Ex. D, p. 6.

. Greenville Products Corporation initiated a test which consisted of dripping a weak salt solution of distilled water into the area between terminals #2 and #3 of the defrost timer. Power was initiated at the same time the salt solution was started. Seven of the eight refrigerators had timers short circuit within the first 20 hours and the area conducting the current between the terminals was carbonzied. Prior to removing the power (70 hours after the test was initiated) Greenville measured 3.5. amps flowing through the carbonized path between terminals #2 and #3. 131/

(38)(e) That condition is sufficient to blacken, melt, shrink or ignite the component materials within the channel

. The test results from the Detroit Testing Laboratory in one of the refrigerators subjected to a timer failure mode were as follows: In the area from 20 inches to 29 inches above the timer, the insulation tubing had melted, blackened and shrunk. The remaining tubing on up the channel was "slightly melted and shrunk". Moreover the insulation on the wires coming from the

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131/ E.C. Ex. 20, Report 7846, p. 2.

top of the timer was melted and carbonized for a distance of approximately 15 inches from the timer. 132/

. The Enforcement Counsel presented support for the proposition that since polyolefin foams are heat sensitive they may soften shrink, or melt during a slow rising subignition temperature. On the other hand, a high initial temperature causes the polyolefin foam to ignite. 133/

132/ R. Ex. D, p. 26.

133/ E.C. Ex. 9, p. 2; Tr., p. 348.

(38)(f) Ignition of the component materials leads to fire and/or smoke. When there is fire it is possible for the flames and/or smoke to escape the confines of the channel

. In the Greenville Products Corporation tests seven of the eight refrigerators had timers short circuit and the area conducting the current between the terminals was carbonized. There was visible smoke from all eight refrigerators as well as visible burning from all eight with the duration of the burning ranging from 2 minutes and 30 seconds to 2 hours intermittently. __/

. By artificially "tracking" between the terminals of defrost timers in 12 operational refrigerators Davock obtained one timer failure within 41 hours which produced "considerable smoke" __/

The interior of the channel itself was covered with black condensed smoke for a distance of approximately 15 inches above the timer. __/

__/ Ex. 20

__/ R. Ex. D. p.17.

. The damanged Sonnier refrigerator had charred marks running along the channel area and in the area of the defrost timer. There were char-marks along the wiring above the defrost timer and the timer itself "was charred and to some extent had melted". 137/ The wiring insulation above the defrost timer was burned and the insulation around the freon tube was charred. 138/

The Sonnier timer failure resulted in sufficient ignition of the component materials to lead to fire and/or smoke. This conclusion is based not only on the physical examination of the refrigerator by Zevola 139/ and Honnell, 140/ but also on the testimony of

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137/ E.C. Ex. 108, p.10

138/ E.C. Ex. 103, p. 6

139/ E.C. Ex. 108, p.10

140/ E.C. Ex. 103, p. 6.

Ms. Sonnier: 141/

Q. Was the wall behind your refrigerator burned?

A. It was smoky, you know stain smoke. You know, it had just turned the wall black that is about all.

and

Q. Was the cabinet above the refrigerator burned?

A. Just a little smoke stained but most of the damage was where the refrigerator was against the wall.

141/ The Sonnier and the Salazar incidents were the only field incident of the three presented by the Enforcement Counsel which carried any weight in this proceeding. In the other field incident, the Enforcement Counsel failed to establish the cause and effect. In other words in the Solorzano (E.C. Ex. 101, 102, TR. p.p. 27-83) incident there was insufficient showing that the fire and/or smoke associated with the incidents was as a result of the kind of timer failure described in this proceeding. For example, in the Sonnier incident, Honnell, a supervisor of the repair of appliances, testified that the mode of failure in the Sonnier incident was that moisture created by the suction line forms, runs down the channel to the defrost timer, shorting the timer and causing fire. Further as to the Sonnier incident he testified that the timer was charred as was the wiring harness and little insulation material was intact.
E.C. Ex. 103, p. 6; TR. p.100.

D. Substantial Risk of Injury (Evidence Provided in the Record)

In order to resolve Issue II (Is there evidence to support the contention that a proven defect creates a substantial risk of injury to the public) it is necessary to consider the following elements in toto: 1) the nature and probability of the defect existing in a given product;142/ 2) the number of defective products in distribution; and 3) the severity of the risk presented by these products. Based on a consideration of the necessary elements, the Presiding Officer concludes that:

(39) A high probability of defect existing in any given Kelvinator refrigerator was not proven in light of a series od circumstances which must be present before a defect exists. Those circumstances are: heat and humidity over a sustained period of time, contaminants, and the wiring in a special configuration.

142/ Section 15(a)(2) defines "substantial product hazard" among other things as a product defect which because of the pattern of defect . . ." creates a substantial risk of injury to the public. In the view of the Presiding Officer in considering the "pattern of the defect" there should be consideration of: 1) the nature of the defect (that consideration was discussed above in Section C); and 2) the probability of the defect existing in a given product (which discussion will be below in connection with finding number 39). See In the matter of: McCullouch Corp., CPSC Docket No. 74-1 (1974); "CPSC: An Agency Manual", The George Washington Law Review, Volume 43, Number 4, p. 1152 (May 1975).

(40) Almost all of the 270,000 refrigerators manufactured by Kelvinator of the 1st generation model design have been "entered into commerce".

(41) The high severity of the risk was not proven by either scientific analyses or field incidents in light of the proven effect of the defrost termination switch, the self-extinguishing characteristics of the insulation material, the failure mode when the refrigerator is grounded, the failure mode under the worst possible set of circumstances, and the absence of reported injuries.

(42) Given findings 39 - 41 in toto, there is not sufficient evidence on the record to support a finding that the product defect associated with the Kelvinator refrigerator present a substantial risk of injury to the public.

Findings 39-42 are discussed in detail below:

(39) A high probability of a defect existing in any given Kelvinator refrigerator was not proven in light of a series of circumstances which must be present before a defect exists

(39)(a) High heat and humidity are necessary

The failure mechanism operative here requires the accumulation of moisture on the heat exchanger. In order to have the temperature differential needed to cause significant condensation on the heat exchanger, the environment in which the refrigerator is operated must be unusually hot. In addition, it must be very humid if significant amounts of moisture are to accumulate.

The record is filled with evidence that substantiates these findings. The two refrigerators on which Detroit Testing Laboratories (DTL) observed condensation build-up on the heat exchanger insulation and the wiring harness were being operated in an environmental test chamber in daily average temperatures ranging from 104° to 118° and 95% relative humidity. In the refrigerator that DTL tested at laboratory ambient temperature and humidity, no failures were achieved,

despite the fact that the insulation separating the timer terminals on those refrigerators had previously been broken down by the tracking procedure.143/

(39(b) High heat and humidity must be sustained over a long period of time

. This finding is supported by the testing and analysis performed by DTL which indicated that". . . "it is very difficult, even under extreme and accelerated conditions, to cause one of these timer failures. Davock testified that it was apparent to us that this breakdown process took a considerable length of time in an unusually warm, humid environment . . . ."144/

143/ R. Ex. D, pp. 8-9; Tr. p. 622

144/ R. Ex. D, p. 10, p. 33

(39)(c) There must be contaminants present within the timer terminal area

Mr. Toner, expert witness for the Enforcement Counsel, conducted a series of cyclic tests at the National Bureau of Standards using uncontaminated distilled water and was unsuccessful in creating timer failure. 145/ In fact, Mr. Toner was able to achieve no change whatsoever in the resistance between the timer terminals. 146/ The Detroit Testing Laboratory, General Environments Corporation, and Kelvinator each successfully simulated the failure mode using contamination by ionized moisture. It is apparent that moisture alone, in the absence of contaminants, will not cause failures of this type.

145/ E.C. Ex. 109, pp.14-16.

146/ E.C. Ex. 109, p.15

(39)(d) There must be a particular configuration of the wires in the wiring harness which appears very infrequently

The testimony of the experts supported the conclusion that steady accumulation of moisture and contaminants alone is not enough. Moisture on the heat exchanger or the wiring harness will not cause a timer failure. Rather, moisture and contaminants must consistently accumulate on the tiny stretches of phenolic insulating material separating the timer terminals.

. Mr. Anikis computed the surface to be about .6 of a square inch total surface area. 147/

. The particular alignment of the wires in the wiring harness must be such that the moisture consistently runs from the heat exchanger onto the wires and drips steadily from some bend in the wiring directly into the tiny surface area separating timer terminals. 148/

147/ Tr. p. 439

148/ R. Ex. D. pp. 7, 9

An important consideration is the fact that there is a great variation in the configuration of the wiring harness in the channel. 149/ The configuration of the wiring harness from which the moisture must drip is apparently random. 150/

(40) Today, almost all of the 270,000 refrigerators manufactured by Kelvinator of the first generation model design have been "entered into commerce" and have been sold at retail. 151/

(41) The high severity of the risk was not proven by either scientific analysis or field incidents in light of:

(41)(a) the effect of the defrost termination switch

Assuming a defect leading to a timer failure which results in the compressor stopping operation, according to Davock, the freezing compartment necessarily warms up causing the defrost termination

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149/ Tr. pp. 626-628

150/ Tr. pp. 626-628

151/ Tr., p. 524; R. Ex A, p. 15

thermostat to automatically shut off any flow of current between terminals 2 and 3 thereby reducing the possibility of any further carbonization of the timer.[152] According to Tarosky, the sequence of events with a defective timer is: The overheating of the defrost timer resulting in the deforming of the switch contacts within the timer housing. This causes the compressor either to cease functioning or to perform erratically creating a need for servicing.[153] When the compressor stops, the freezing compartment necessarily warms up causing the defrost termination thermostat to automatically shut off any flow of current between terminals 2 & 3 thereby preventing any further carbonization of the timer.

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152 Tr. pp. 767-768; Resp. Reply Brief, p. 18

153 R. Ex. E, p. 12.

(41)(b) The self-extinguishing characteristics of the insulation material

. Using strained methods Kelvinator in its tests was able to create charring within the channel but not nearly enough heat to start a fire outside the channel. In most cases, the charring extinguished itself a few inches above the timer terminal. 154/

. Kelvinator ran two series of tests on the refrigerator in which various artificial sources of ignition ranging from acetylene torches to carbon arcs were applied to the materials in the channel. Despite the artificial and extreme measures employed, in every case, the materials in the channel self-extinguished. 155/

. Davock found that every material and all combinations of materials self-extinguished. There was no continuous burning. 156/

154/ E.C. Ex. 19; E.C. Ex 20 (Report 7842)

155/ E.C. Ex. 19; E.C. Ex 20 (Report 7842)

156/ R. EX. D, pp. 12-16; TR. pp.702-04

(41)(c) The failure mode when the refrigerator is grounded (a status generally expected given the manufacturers explicit instructions)

. A total of 25 refrigerators were tested (by Detroit Testing Laboratory, General Environment Corporation, and Kelvinator). In every case, without exception, in which a properly grounded refrigerator was tested, the timer failure incident which occurred (a) terminated with an open fuse or open circuit; and (b) caused little damage beyond the timer terminals and, in some instances a very small segment of the insulation materials immediately adjacent. The one refrigerator which experienced significant damage within the channel was ungrounded. 157/

. It is proper to expect that generally the refrigerator will be grounded because of the manufacturers explicit instructions regarding what must be done where a two prong wall receptacle is encountered. The instructions provide that there must be a replacement with a properly grounded three-prong receptacle. 158/

157/ R. Ex. D, p. 29; R. Ex. E.; E.C. Ex. 20

158/ R. Ex. G-1, p. 2; R. Ex. G-2, Sec. 3/2-3/3. Regarding the responsibility of the retailer/installer, the Commission also has the authority to commence Section 15(f) hearings in order to determine their responsibilities under the Act. The Commission is not, however, required by law to join the manufacturer and retailer if there is a question about separable responsibilities as to the identical product, nor is the Commission estopped from requiring certain actions of the manufacturer under Section 15(c) and 15(d) when a retailer/installer may also have a responsibility.

(41)(d) The failure mode under the worst possible set of circumstances (e.g., without grounding)

. If a refrigerator is not grounded and arcing occurred in the wires above the timer there would not be sufficient heat or flame to start a fire at the top of the channel. Jablonsky drew this conclusion because of the slow-burning, self-extinguishing characteristics of the insulation material, plus the fact that the foam and wire insulation does not extend above the top of the channel. 159/

. Irrespective of the failure mode, according to Thornhill, there is little chance of damage outside of the channel. The reasons: there is not much combustible material within the channel; when the foam insulation is exposed to moderate heat it shrinks and there is not much heat potential. The plastic within the channel is hard to ignite and once ignited quickly self-extinguishes. The channel is shallow and relatively congested at the top which would tend to reduce ventilation in the channel. Finally the metal components would act as a heat sink. 160/

159/ R. Ex. B, p. 33.

160/ R. Ex. C, p. 15.

. In none of the tests conducted by the Respondent did any flame escape -- in some instances the refrigerators were not grounded, in some the defrost termination switches were shunted. 161/

. Specifically, in the tests conducted by Tarosky, where he succeeded in inducing five timer failures involving overheating and carbonization, no damage whatever was sustained by any of the plywood enclosures as the result of these failures. Further at no time during the tests was any significant temperature rise recorded by any of the thermocouples surrounding the channels on the refrigerators tested. 162/

(41)(e) The absence of reported injuries

. None of the field incidents reported by the Enforcement Counsel resulted in an injury. 163/

161/ R. Ex. D, pp. 24-28; E.C. Ex. 20, Report 7846; E.C. Ex. 19; E.C. Ex. 20; Report 7842; R. Ex. E, p. 12

162/ R. Ex. E, pp. 13-14; Tr., pp. 777-79

163/ E.C. Ex. 101, 102, 105, and 106

. The President of Kelvinator testified that they knew of no case where an over heated defrost switch resulted in a personal injury. 164/

. The manufacturer indicated that there had been no product liability claims involving timer failures. 165/

(42) There is not sufficient evidence on the record to support a finding that the product defect associated with the Kelvinator refrigerator presents a substantial risk of injury to the public. 166/

164/ R. Rx. A, p. 23

165/ E.C. Ex. 20, p. 6

166/ Presiding Officer's Findings 39-41

(c) Conclusions of Law

This proceeding was for the purpose of determining whether Kelvinator refrigerators present a substantial product hazard. The Consumer Product Safety Act defines 'substantial product hazard' as a product defect which (because of the pattern of defect, the number of defective products distributed in commerce, the severity of risk, or otherwise) creates a substantial risk of injury to the public. 15 U.S.C. § 2064.[167]

As a matter of law then two major issues must be resolved before a determination can be made as to whether a product presents a substantial product hazard. The two issues are:

Issue I. Does a product defect exist?

Issue II. If a product defect exists, does it create a substantial risk of injury to the public? In resolving this issue it is necessary to consider in toto: the nature and probability of the defect existing in a given product; the number of defective products in distribution; and the severity of the risk.

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[167] 15 U.S.C. § 2064.

In the case of Kelvinator refrigerators subject to this proceeding, the following major findings of fact were made:

. A product defect exists. 168/

. There was insufficient evidence in the record to support a finding that the product defect created a substantial risk of injury to the public. 169/

If there is not a proven product defect then as a matter of law there is no substantial product hazard. If there is a product defect, but that defect does not create a substantial risk to the public, then as a matter of law there is no substantial product hazard.

In this proceeding there was a proven product defect, but there was insufficient proof that the defect creates a substantial risk of injury to the public. Therefore, the Presiding Officer reached following conclusions of law:

. The Kelvinator refrigerators specified in the Notice of Enforcement do not present a substantial product hazard within the meaning of Section 15(a)(2) of the Consumer Product Safety Act.

168/ Presiding Officer Finding #38.

169/ Presiding Officer Findings #39-42.

APPENDIX

NOTIFICATION AND REPAIR, REPLACEMENT, OR REFUND

SEC. 15. (a) For purposes of this section, the term "substantial product hazard" means—

(1) a failure to comply with an applicable consumer product safety rule which creates a substantial risk of injury to the public, or

(2) a product defect which (because of the pattern of defect, the number of defective products distributed in commerce, the severity of the risk, or otherwise) creates a substantial risk of injury to the public.

(b) Every manufacturer of a consumer product distributed in commerce, and every distributor and retailer of such product, who obtains information which reasonably supports the conclusion that such product—

(1) fails to comply with an applicable consumer product safety rule; or

(2) contains a defect which could create a substantial product hazard described in subsection (a)(2),

shall immediately inform the Commission of such failure to comply or of such defect, unless such manufacturer, distributor, or retailer has actual knowledge that the Commission has been adequately informed of such defect or failure to comply.

(c) If the Commission determines (after affording interested persons, including consumers and consumer organizations, an opportunity for a hearing in accordance with subsection (f) of this section) that a product distributed in commerce presents a substantial product hazard and that notification is required in order to adequately protect the public from such substantial product hazard, the Commission may order the manufacturer or any distributor or retailer of the product to take any one or more of the following actions:

(1) To give public notice of the defect or failure to comply.

(2) To mail notice to each person who is a manufacturer, distributor, or retailer of such product.

(3) To mail notice to every person to whom the person required to give notice knows such product was delivered or sold.

Any such order shall specify the form and content of any notice required to be given under such order.

(d) If the Commission determines (after affording interested parties, including consumers and consumer organizations, an opportunity for a hearing in accordance with subsection (f)) that a product distributed in commerce presents a substantial product hazard and that action under this subsection is in the public interest, it may order the manufacturer or any distributor or retailer of such product to take whichever of the following actions the person to whom the order is directed elects:

(1) To bring such product into conformity with the requirements of the applicable consumer product safety rule or to repair the defect in such product.

(2) To replace such product with a like or equivalent product which complies with the applicable consumer product safety rule or which does not contain the defect.

(3) To refund the purchase price of such product (less a reasonable allowance for use, if such product has been in the possession of a consumer for one year or more (A) at the time of public notice under subsection (c), or (B) at the time the consumer receives actual notice of the defect or noncompliance, whichever first occurs).

APPENDIX

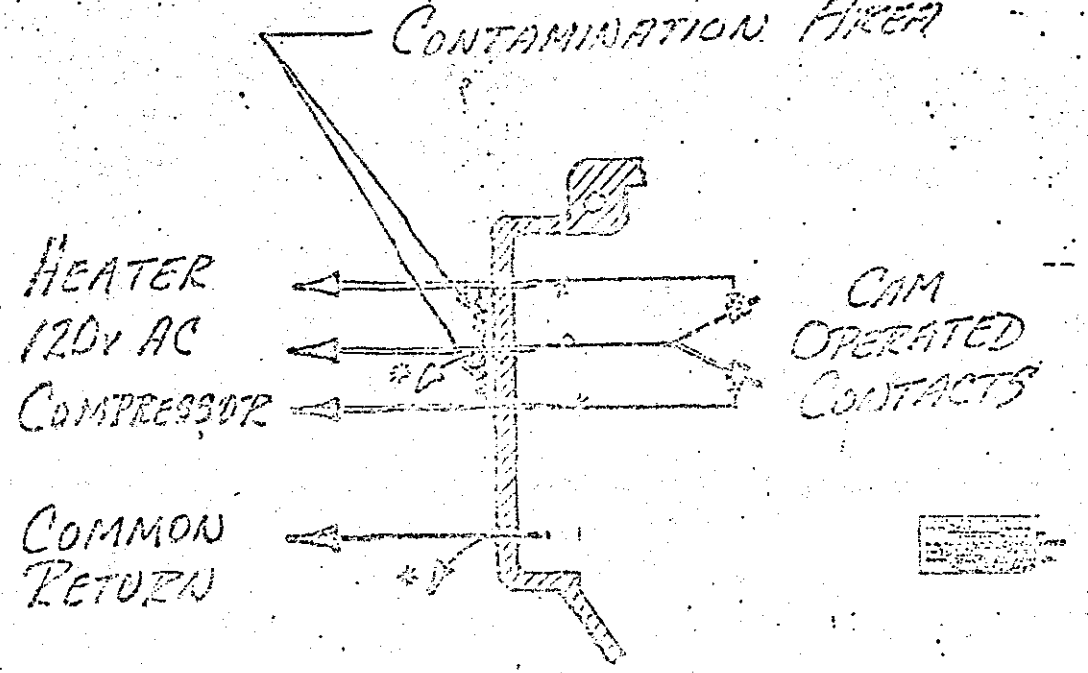
An order under this subsection may also require the person to whom it applies to submit a plan, satisfactory to the Commission, for taking action under whichever of the preceding paragraphs of this subsection under which such person has elected to act. The Commission shall specify in the order the persons to whom refunds must be made if the person to whom the order is directed elects to take the action described in paragraph (2). If an order under this subsection is directed to more than one person, the Commission shall specify which person has the election under this subsection.

(c) (1) No charge shall be made to any person (other than a manufacturer, distributor, or retailer) who avails himself of any remedy provided under an order issued under subsection (d), and the person subject to the order shall reimburse each person (other than a manufacturer, distributor, or retailer) who is entitled to such a remedy for any reasonable and foreseeable expenses incurred by such person in availing himself of such remedy.

(2) An order issued under subsection (c) or (d) with respect to a product may require any person who is a manufacturer, distributor, or retailer of the product to reimburse any other person who is a manufacturer, distributor, or retailer of such product for such other person's expenses in connection with carrying out the order, if the Commission determines such reimbursement to be in the public interest.

(f) An order under subsection (c) or (d) may be issued only after an opportunity for a hearing in accordance with section 554 of title 5, United States Code, except that, if the Commission determines that any person who wishes to participate in such hearing is a part of a class of participants who share an identity of interest, the Commission may limit such person's participation in such hearing to participation through a single representative designated by such class (or by the Commission if such class fails to designate such a representative).

COMPRESSOR/HEATER TIMER SWITCH CONNECTION DIAGRAM



*TIMER MOTOR CONNECTION

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e.	77	2, 6, 8, 1
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APPENDIX

CROSS-REFERENCE CHART COVERING THE PARTIES' FINDINGS OF FACT

In deciding this matter, the Presiding Officer considered all proposed findings of fact submitted by the Enforcement Counsel and Respondent. Rulings on the relevant and significant issues raised by the parties may be found in the Initial Decision. Where appropriate, the proposed findings have been incorporated in this Decision. On the other hand, irrelevant or unsupported findings of fact have been rejected.

This chart is provided to assist in the identification of the relationship between the Presiding Officer's Findings and selected Findings proposed by the parties.

Presiding Officer's Finding	Enforcement Counsel's Proposed Findings	Respondents' Proposed Findings
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Presiding Officer's Finding	Enforcement Counsel's Proposed Findings	Respondents' Proposed Findings
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U.S. CONSUMER PRODUCT SAFETY COMMISSION
WASHINGTON, D.C.

In the matter of WHITE CONSOLIDATED INDUSTRIES, INC. a corporation, doing business as KELVINATOR, INC., a wholly owned subsidiary, and as G.R. MANUFACTURING CO., and EDWARD B. REDDIG, individually and as an officer of WHITE CONSOLIDATED INDUSTRIES, INC. and KELVINATOR, INC., and THOMAS L. DOLAN, individually and as an officer of KELVINATOR, INC., and ROY H. HOLDT, as an officer of WHITE CONSOLIDATED INDUSTRIES, INC. Respondents	CPSC DOCKET NO. 75-1

INITIAL ORDER

For the reasons discussed in the INITIAL DECISION issued this date, and on the basis of the Findings of Fact enumerated therein, the evidence admitted into the record, and the motions, responses and arguments of counsel related thereto, the Presiding Officer reaches the following Conclusions of Law:

(1) The Consumer Product Safety Commission has subject matter jurisdiction in this proceeding.

(2) A Commissioner was properly designated as Presiding Officer in this proceeding.

(3) The Notice of Enforcement was definite and certain, and was properly accompanied by internal memorandum outlining what Enforcement Counsel believed to be their prima facie case.

(4) Congress did not intend that the environmental impact statement requirements of the National Environmental Policy Act apply to adjudicatory proceedings commenced by the Consumer Product Safety Commission under Section 15 of the Act.

(5) The Rules of Practice published by the Commission in proposed and interim form properly establish the procedural rules governing this proceeding.

(6) Respondents' objection to the failure of the Commission to publish a description of its central and field organization and the method by which its functions are channeled cannot be sustained.

(7) This proceeding was properly convened as an adjudicatory rather than a rulemaking proceeding.

(8) Corporate Respondents White Consolidated Industries, Inc., and Kelvinator, Inc., and Respondents Edward S. Redding and Thomas I. Dolan, have been properly named in each of the individual and corporate capacities listed for them in the Notice of Enforcement with the exception of Respondent Redding who was improperly named as an officer of Kelvinator, Inc. Respondent Roy H. Holdt, however, was improperly named, and his name must be deleted from the list of Respondents.

(9) Respondents properly obtained a restricted final in camera order for certain limited portions of the evidence admitted into the record.

(10) Enforcement Counsel Exhibit 7, a damaged refrigerator channel, was properly refused admission into evidence and testimony based on observations of it properly rejected.

(11). Testimony translated by a Commission employee was properly admitted into evidence.

(12) The refrigerators specified in the Notice of Enforcement do not present a substantial product hazard within the meaning of Section 15(a)(2) of the Consumer Product Safety Act.

(13) No action on the part of any of the Respondents is required under Sections 15(c) and 15(d) of the Consumer Product Safety Act.

In reaching these Conclusions of Law, the Presiding Officer has considered all proposed Conclusions of Law submitted by the parties. Rulings on the relevant and significant legal issues raised by the parties may be found in the INITIAL DECISION. Where appropriate, proposed Conclusions of Law have been incorporated in this Decision and this INITIAL ORDER. On the other hand, irrelevant or unsupported Conclusions of Law have been rejected.

In view of these Conclusions of Law, it is, this 3rd day of November, 1975, ORDERED that judgment is entered in favor of the Respondents in this proceeding, and it is FURTHER ORDERED that the Notice of Proceeding is dismissed.

Enforcement Counsel and Respondents may appeal the INITIAL DECISION and ORDER provided that within 10 days after completion of service such party files a notice of intention to appeal and within 30 days an appeal brief. Section 1025.72, Rules of Practice.

Constance E. Brenner
Presiding Officer

The secretary will kindly serve copies of the INITIAL DECISION and ORDER on the following, intervenors who have entered their appearance in this proceeding:

J. Edward Day, Esq.

William D. Kramer, Esq.

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Enforcement Counsel
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