

MFR/PRV LBR NOTIFIED 12/15/08
COMMENTS: YES NO
 OVERRULED; ATTACHED
EXCISIONS FOIA Hqs. :
 DO NOT RE-NOTIFY RE-NOTIFY

**U.S. Consumer Product Safety Commission
LOG OF MEETING**

SUBJECT: Aluminum wiring repair methods and Federal Pacific Electric (FPE) Stablok circuit breakers and associated safety hazards

DATE OF MEETING: March 18, 2008

LOG ENTRY SOURCE: Andrew Trotta, ESEE

DATE OF LOG ENTRY: October 29, 2008

LOCATION: U.S. CPSC, Bethesda Towers

CPSC ATTENDEE(S):

Jay Howell, Office of Hazard Identification and Reduction
Scott Wolfson, Office of Public Affairs
Douglas Lee, Division of Electrical Engineering, Directorate for Engineering Sciences (ESEE)
Russ Roegner, Directorate for Epidemiology (EP)
Kathleen Stralka, Division of Hazard Analysis, EP (EPHA)
Michael Greene, Ph. D., EPHA
Andrew Trotta, ESEE

NON-CPSC ATTENDEE(S):

Jesse Aronstein, Ph. D., consulting engineer
Eleanor Aronstein
Peter King, AICopStore.com
Mason Laird, Consumer Federation of America
David Shapiro, Safety First Electrical Contracting, Consulting and Safety Education

SUMMARY OF MEETING: CPSC staff met with Jesse Aronstein at his request to discuss his concerns over a March 3, 1983 CPSC Press Release on Federal Pacific Electric (FPE) circuit breakers. Dr. Aronstein indicated that the ambiguity of the wording of the press release has led to its misinterpretation. He proposed alternative wording that he thinks will clarify the intent of the press release. Dr. Aronstein reiterated his findings on field failures of FPE circuit breakers as a basis for the need to clarify the intent of the CPSC press release. He provided a handout (attached) to support his assertions.

On the topic of aluminum wiring, Dr. Aronstein indicated that he is now ready to endorse the AlumiConn connector as an acceptable alternative to the CopAlum repair where the CopAlum is unavailable or unaffordable. He proposed a complete revision and upgrade to CPSC publication #516.

Handout from Jesse Aronstein, Ph.D. at March 18, 2008 Meeting

Attachment to March 18, 2008 Meeting Log

**ELECTRICAL ADVISORY COMMITTEE MEETING
Amended Minutes from April 17, 2007 (as approved by the OHBC
Board on May 31, 2007)**

**Office of Housing, Buildings & Construction
Electrical Section
101 Sea Hero Road, Suite 100
Frankfort KY 40601**

MEMBERS PRESENT

Bobby Hamilton, Chair
Michael T. Leake
Garry Sebastian
Tim Parsons
Robert Matthews
Sal Santoro
Raymond Cornelison
Gary Osborne
Michael Billow

OFFICE OF HOUSING STAFF PRESENT

Van Cook, Executive Director
Rodney Raby, State Fire Marshal
Richard Peddicord, Assistant State Fire Marshal
Ken Leathers, Chief, Electrical Inspections
Tommy Young, Electrical Inspector
Michael Bennett, Staff Attorney
Jennifer Redmon, Administrative Specialist

VISITORS PRESENT

Jim Dunson
Bill Slone
Pat Perry
Mike Sausman
Joe Dunnigan
Jeff Siegle

MEETING CALLED TO ORDER

Chair Bobby Hamilton made the motion to call the meeting to order at 9:00 a.m.

ITEMS OF REVIEW:

According to staff attorney Michael Bennett, there are several pending underage license cases in the Franklin County Circuit Court system as of the meeting date. Mr. Bennett explained that the licenses are in the process of being appealed because they were issued during the "grandfather" period and many of the licenses are not valid.

Mr. Peddicord issued a statement regarding the number of pending licenses online and the number of outstanding licenses.

The failure of the Residential License bill was announced at this meeting as well.

ELECTRICAL INSPECTOR CERTIFICATION REVIEW:

Applicant: Steve Clark

Status: Failed to approve at last committee meeting.

Committee recommendations: The committee decided that there was not enough evidence of experience in the file to approve Mr. Clark for a 2B Certificate. The Committee members agreed that Mr. Clark should be present at the next scheduled meeting and provide the necessary proof to obtain a certification for (2B).

First motion made to reserve approval until next meeting date: Gary Shouse

Second motion made to accept: Robert Matthews

Motion carried.

Applicant: Jerry Dunnaway

Status: Applying for Residential Electrical Inspection Certification

Committee recommendations: The committee reviewed the packet submitted and all necessary information for approval for the mentioned incumbent. The committee decided to approve this request.

First motion made to approve Mr. Jerry Dunnaway as a Residential Electrical Inspector: Jerry Shouse

Second motion made to accept: Robert Matthews

Motion carried.

Federal Pacific Electric Company stab-lok breakers memorandum: Home Inspectors telling homeowners that FPE panels should be replaced due to fire hazard.

Mr. Ken Leathers received a release concerning FPB panels from US Consumer Product Safety Commission, March 3, 1983 (Release *83-008).

Several members stated that there was no documentation present that alluded to the fact that the panel was a fire hazard yet the Committee itself takes no liability in stating that the panel is a safe panel.

**First motion made to have Ken Leathers with aid of Terry Slade draft letter stating Committee's statement about breaker panel boxes: Robert Matthews
Second motion made to accept: Tim Parsons
Motion carried.**

South Wing C of State Fair Grounds electrical installation issue:

Mr. Scott Pulliam presented copies of letters sent to Harold Workman, Kentucky State Fair Board, and Ken Leathers, Chief Electrical Inspector.

On July 7, 2005, Ken Leathers sent correspondence to Mr. Pulliam which addressed all complaints and stated that he would be performing a walk-thru inspection on the facility.

Mr. Pulliam also stated that he sent correspondence to the Attorney General's Office and Harold Workman of the Kentucky State Fair Board again to address work he presented as unsafe.

The Committee members addressed several of the photographs presented by Mr. Pulliam. Committee members concurred that the pictures did not depict an accurate date, progress of the job nor were they in sequence with the lengthy job installation.

Garry Sebastian questioned the filing of a complaint with local jurisdiction. Mr. Pulliam stated that he did not file a local complaint because he had copied several State government entities.

Committee members confirmed through Ken Leathers and Tommy Young that National Electrical Council (NEC) Code was used in the inspection of all work performed on this job.

Mr. Tommy Young, electrical inspector, stated that he made approximately 47 visits to the job site with a common occurrence of reporting four pages of violations per visit. Mr. Young stated that each time he subsequently inspected the job site; the violations he had noted were corrected. He stated that the job was begun in October of 2003 and it was finalized in October of 2005.

J. ARONSTEIN

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HAZARDOUS FPE CIRCUIT BREAKERS
AND PANELS

(Updated as of May 25, 2007)

Information for Inspectors and Homeowners

*(Originally Prepared for the 17th Annual Spring Seminar, Feb. 21, 2004
St. Louis Chapter, American Society of Home Inspectors)*

Copies of this report may be downloaded at no cost from:

www.inspect-ny.com/fpe/FPECircuitBreakerHazards070525.PDF

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PREFACE to the May 25, 2007 update

This document has been revised at this time for two major reasons. First, in a class-action lawsuit against FPE/Reliance in New Jersey, the Court found that Federal Pacific Electric Co. (FPE) committed fraud by representing that their FPE Stab-Lok® circuit breakers met the applicable (UL) standard test requirements when in fact they did not. The Court's finding of fraud, published in 2005, indicates that FPE cheated on the tests that were required to obtain and maintain UL listings. The company improperly applied UL labels to circuit breakers that could not and did not meet the UL requirements. FPE covered up the defective performance of the circuit breakers by a long-standing practice of fraudulent testing. The Court's finding helps resolve the question as to how the defective breakers got into the marketplace and into homes.

Secondly, the recent testing of FPE Stab-Lok® circuit breakers now includes breakers from 28 homes across the Country. The number of breakers tested is about double the number included in the tabulation of the original report. The results firmly support - to an even higher level of statistical certainty - the conclusion that virtually every FPE Stab-Lok® panel installed in homes today contains circuit breakers that are seriously defective, and that they should be replaced in the interest of electrical and fire safety.

Additional changes have been made in the report to enhance clarity and to add or update content. A section has been added that explains why the FPE Stab-Lok® breakers do not meet the functional requirements of the National Electrical Code or other applicable electrical safety codes and standards.

The author thanks all of those who have contributed to this electrical safety project.

Jesse Aronstein, Ph.D., P.E.

INTRODUCTION

The underlying reason for the presence of defective Federal Pacific Electric ("FPE") Stab-Lok® circuit breakers in millions of homes today is now publicly known, through a Court finding in a class action lawsuit in New Jersey. For a long time, while this line of circuit breakers and panels were in production, FPE cheated on its testing to cover up the fact that the product did not reliably meet the applicable UL (Underwriters Laboratories, Inc.) safety standard requirements. Because of the cheating, defective product got into the market, past the normal electrical safety system of checks and balances. Having obtained and maintained its UL listings by fraudulent testing, FPE applied UL labels to the product by which they (the manufacturer - FPE) falsely certified that the breakers met the UL requirements. Without the fraudulent application of the UL labels, the defective breakers could not have been marketed, installed in millions of homes, and approved by electrical inspectors. Although the company ceased manufacturing these breakers in the mid-1980's, their defective circuit breakers remain today in millions of homes, presenting an increased risk of fire and injury.

Supposing the circuits in your home were fed by a fuse box, with screw-in fuses. You may have seen these in some homes. You may also know about the unsafe practices of over-fusing (installing a higher-amperage fuse than appropriate for the circuit wiring) or putting a penny in the socket behind the fuse itself -- actions taken to deal with the "nuisance" of fuses frequently blowing on overloaded circuits, or to deal with the lack of a spare fuse. Now, let's assume that an inspector notes some over-fusing and pennies behind some fuses, and waves the warning flag that it is a hazardous condition - a "safety defect". Inspectors, electrical contractors, fire prevention professionals, and real estate agents would agree that these conditions are hazardous (increasing the risk of fire and injury), that the homeowner should be alerted, and that the unsafe condition should be corrected immediately. Red-flagging the Federal Pacific Electric ("FPE") Stab-Lok® panel and its breakers is essentially the identical warning; it is the equivalent of having more than 1/3 of the circuits over-fused and/or with pennies behind the fuses.

Failure to trip properly under overload and/or short circuit is the basic safety defect of the FPE breakers. For example, if an overload or short circuit occurs in the clothes dryer or the circuit feeding it, the breaker is expected to trip open to minimize the resulting fire hazard. But, if it is an FPE Stab-Lok® two-pole breaker, extensive testing (by FPE, CPSC, UL, and others) has demonstrated that it cannot be depended on to trip properly. A substantial portion of the FPE two-pole Stab-Lok® breakers, the type that would feed the dryer circuit, fail to operate properly. A significant portion of them jam and will not trip at all, no matter what overload current is applied. Additionally, there are problems with the FPE Stab-Lok® single-pole breakers and combination breaker/GFI units.

The circuit breaker defects become important if and when there is a short circuit or substantial overload in the downstream circuit. Most breakers in a home are never called upon to trip, and the homeowner's perception is that "the breakers work fine". The same observation could generally be made if there were no breakers (or fuses) at all in the electrical system. In the event of an electrical malfunction, however, our safety may depend on proper operation of the circuit breakers.

In my own home, only two of the breakers have ever tripped during more than a quarter-century of our occupancy. I know nothing about the ability of any of the others to function properly, except that they are a brand and type that has not been identified as having any significant performance problems. There is no data suggesting that I should be concerned about their ability to function properly. With FPE breakers, however, there is a substantial body of test data and other information available that demonstrates a serious problem.

Safety problems also exist in the FPE panelboards (panels) in which the breakers are installed. Some of the most common FPE Stab-Lok® panels are failure-prone due to marginal interconnections between the current-carrying components. The failing interconnections overheat at high current loading, and, in the worst case, fire ignites within the panel.¹

Details regarding both the FPE Stab-Lok® circuit breaker and FPE panel performance problems are provided in the following sections. The bottom line is this: based on the information that is available and the testing that has been performed, there is no question but that homeowners need to be alerted to this safety defect and advised to have it corrected. Unless the occupants are informed and willing to live with the risk posed by defective circuit breakers, the FPE Stab-Lok® panels should be replaced.

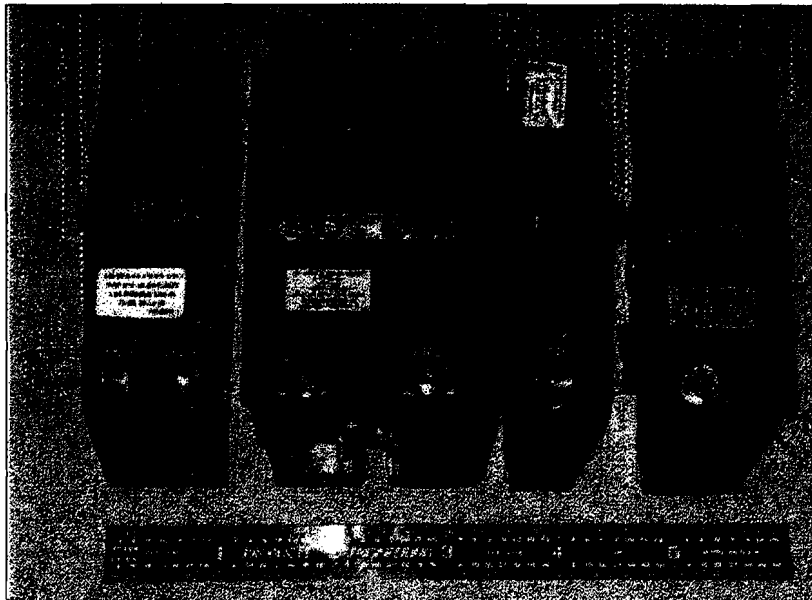


FIGURE 1 - REPRESENTATIVE SAMPLES OF HALF- AND FULL-WIDTH FPE STAB-LOK® CIRCUIT BREAKERS (left to right: 1/2-width double pole, full-width double pole, 1/2-width single-pole, full width single-pole)
Note that the color and style of the handle varied over the years.

1. FPE STAB-LOK® BREAKERS DO NOT MEET CODE REQUIREMENTS

With regard to the electrical system in buildings, all applicable building codes and standards require operational and properly sized (current rating) circuit protection. This is normally accomplished by the installation of either circuit breakers or fuses. Because of their high defect rate, the FPE Stab-lok® circuit breakers do not meet the functional requirements of the electrical safety codes and standards.

The general requirements for installation of circuit breakers or fuses in buildings are in the National Electrical Code (“NEC”), which is a so-called “model code” that is generally adopted all or in part by State and local jurisdictions. The NEC is maintained and periodically updated by a process that is administered by the National Fire Protection Association (NFPA), which also publishes the actual text document. The NFPA does no testing of the components of the electrical system, nor does it approve (or “certify”, or “label”, or “list”) specific brands of electrical equipment as suitable for use under the requirements of the NEC.

Detailed performance requirements for residential circuit breakers are embodied in Underwriters Laboratories’ Standard UL489. That standard has served for many years to define the boundaries between acceptable and unacceptable circuit breaker performance. Conformance to the standard is generally indicated by a UL “label”, which is applied to each breaker by the manufacturer as its (the manufacturer’s) certification that the breaker meets the requirements of UL489. UL allows the manufacturer to do that, after “listing” it (having tested and accepted initial samples) and establishing a periodic inspection and sample testing program (by UL, in addition to the manufacturer’s own production line and quality control testing) for that product. UL is paid by the manufacturer for the listing, labeling, and follow-up services. The manufacturer is UL’s client. For the FPE Stab-Lok® circuit breakers, UL listing and periodic follow-up testing was actually done by FPE personnel at FPE’s facilities, monitored by a UL inspector. UL did not itself independently test the FPE breakers for the listing or “follow-up services” program. UL claimed to be unaware of FPE’s fraudulent testing practices.⁶

Facilitated by its fraudulent testing, FPE produced defective Stab-lok® breakers for many years. They falsely applied the UL labels as their certification that they met the applicable UL standard. Without the UL label on them, the breakers could not have been sold, as electrical inspectors would not accept an installation without (UL) labeled equipment. To the inspectors, the label (and UL “listing”) is taken as evidence that the product is “suitable for the purpose” under the provisions of the NEC. In the case of FPE’s Stab-lok® circuit breakers, however, it was not true.

On the basis of all available test results, it is clear that the FPE Stab-Lok® circuit breakers do not meet the functional requirements of the NEC, State and local codes, or UL489. Nevertheless, some people in the trade (inspectors, engineers, electricians, electrical contractors, and power company technicians) may claim that the FPE Stab-Lok® breakers are in conformance with applicable code(s) because they are (or were at the time of installation) UL “listed and labeled”, without regard for the actual functionality. Such statements really say that the electrical distributor did nothing wrong by stocking the product for sale, the electricians and contractors did nothing wrong by installing them, and the electrical inspectors did nothing wrong by approving the initial installation. They are not at fault in that regard. FPE’s fraud duped them all, and UL as well.

From an electrical safety standpoint, the fraud has left homeowners and occupants with an increased risk of fire and injury. The defective performance of the FPE Stab-Lok® breakers is not in actual compliance with the NEC or any other electrical safety code.

2. FPE STAB-LOK® CIRCUIT BREAKER TEST RESULTS

Tests of FPE Stab-Lok® circuit breakers were conducted by at least four companies and one federal government agency in about the 1979 to 1983 period. These included FPE (and its parent company, Reliance Electric), Southwest Research Incorporated, UL (Underwriters Laboratories, Inc.), CPSC (U.S. Consumer product Safety Commission), and Wright-Malta Corp. (for CPSC). Only the CPSC/Wright-Malta test results were ever made public.^{1,2,3,4} Test results obtained by the others have been shielded from the public by proprietary and confidentiality agreements. While their actual test results remain hidden from view, there is no indication that their test results differ significantly from those obtained by CPSC.

Recently, additional tests have been conducted on FPE Stab-Lok® breakers from homes across the country. The sample size, presently approaching 500 circuit breakers, makes this the largest body of publicly-available test data on the FPE Stab-Lok® circuit breakers. The results are consistent with the test results obtained in about 1980. These new test results clearly demonstrate that the serious defects revealed by tests more than 25 years ago are present today in the FPE Stab-Lok® breakers installed in homes.

A summary of available results for tests on FPE Stab-Lok® circuit breakers is provided in Table 1, below. Additional information on the testing performed by the various parties is discussed in the sections immediately following.

<u>Tests on FPE Stab-Lok® Circuit Breakers</u>	<u>Number of Breakers Tested</u>	<u>No Trip Failures @135% of Rated Current*</u>	<u>Number of Critical Safety Failures**</u>
CPSC			
Single-Pole	14	4 (28%)	1 (7%)
Double-Pole	27	20 (74%)	5 (19%)
Wright-Malta Corp. (for CPSC)			
Double Pole	122	62 (51%)	12 (10%)
Independent (J.Aronstein)			
Single-Pole	345	61 (18%)	4 (1%)
Single-Pole GFI/Breaker ***	5	3 (60%)	4 (80%)
Double Pole	120	42 (35%)	14 (12%)

* UL test requirement. Includes samples that are also critical safety failures

** Failed to trip @200% of rated current, or jammed.

*** For the combination GFI/Breaker the number includes critical failure of breaker and/or GFI function.

TABLE 1 - SUMMARY OF TEST RESULTS ON FPE STAB-LOK® CIRCUIT BREAKERS

A. CPSC Tests In the 1980 time frame the U.S. Consumer Product Safety Commission (CPSC) investigated the performance of circuit breakers. CPSC performed its own laboratory tests on samples of FPE Stab-Lok® single-pole and double-pole breakers. For these samples, they found that 85% of the double-pole breakers and 39% of the single-pole breakers failed one or more of the UL test criteria. The double-pole breakers that failed to trip at 200% of rated current were considered to be "critical" (safety) failures. This term was adopted for failures to trip at 200% of rated current (and above), and it was based on CPSC-sponsored analysis and testing at the U.S. National Bureau of Standards (NBS, now NIST). The NBS tests demonstrated 200% of rated current to be the threshold of fire ignition hazard for residential wiring in an insulated wall.

Additional tests on 122 two-pole FPE Stab-Lok® breakers in ratings from 30 Amp to 80 Amp were conducted for CPSC by Wright-Malta Corp. These breakers were tested according to the Underwriters Laboratories' (UL) criteria for operation at 135% and 200% of rated current.^{2,3,4} The breakers should trip (open the circuit) at these currents within a specified time, with the current applied to either one pole or both poles. (The FPE Stab-Lok® two-pole breakers in ratings below 90 amp are essentially two single-pole breakers ganged together with linked handles, and they may or may not have an internal "common trip" mechanism, which is intended to assure that tripping of one pole causes both poles to open. Older FPE Stab-Lok® two-pole breakers do not have this feature.)

For the Wright-Malta tests at 135% of rated current, 51% of the double-pole breakers failed with individual poles tested, and the failure rate was 25% with both poles tested simultaneously. The failure rates increased to 65% and 36%, respectively, after 500 operations of the on/off toggle handle (a shortened version of the UL mechanical endurance test).

For the test at 200% of rated current, the failure rate was 1% on individual poles tested, and 0% with both poles tested simultaneously. The failure rates increased to 10% and 1%, respectively, after 500 operations of the on/off toggle handle.

From an electrical safety standpoint, the most significant hazard identified in these CPSC-sponsored tests is that many of the two-pole FPE Stab-Lok® breakers may jam when trying to trip from overcurrent on one pole. This is due to mechanical friction in the common trip mechanism. Once the circuit breaker jams, its contacts will remain closed no matter what the current loading. This is serious -- it is a total failure that disables the protective device for that circuit. Essentially, the jammed breaker is exactly analogous to the "penny behind the fuse". This type of failure occurred in about 10% of the two-pole breakers in the test program.

FPE claimed that the jamming was a consequence of the test conditions (toggle operations) and would not occur in actual use. Subsequent testing of samples from homes has disproved that claim. (See Section 2E, below.) The friction changes in the mechanism that causes the jamming occurs in long-term use under normal conditions in homes, not only by repeated on/off toggle operations in the tests.

The balance of the overcurrent failures are similar to "overfusing". For instance, a 30-amp breaker, which is normally expected to trip somewhere above 30 amps and below 40.5 amps (the UL 135% test point), actually doesn't trip until 44 amps. The 30-amp breaker is essentially a 40-amp breaker. This is analogous to the condition of "overfusing", a practice that is universally considered to be unsafe even though it is not as dangerous as a totally jammed breaker (or penny behind the fuse).

B. FPE Test Results Federal Pacific Electric and/or their parent company Reliance Electric investigated their own circuit breakers and notified CPSC of problems associated with their full-width two-pole Stab-Lok® residential breakers.⁵ They have never made public any test data or technical reports on the 2-pole or any other breakers in their line. Recently, a homeowner called FPE and was told that FPE had performed the same tests (as CPSC), but no details regarding the test results were provided. When the homeowner asked for written reports of the test results, they (FPE) said that they did not have them.

C. Southwest Research Incorporated performed testing under contract to FPE/Challenger regarding the performance of the FPE full-width two-pole residential Stab-Lok® breakers and some of the potential hazards resulting from overcurrent conditions.^{5,6} Their reports have not been made public. Lacking any information or claims to the contrary, it is reasonable to conclude that the results of their functional tests on the two-pole breakers were consistent with the findings of FPE/Reliance, CPSC, and Wright-Malta as to the defective performance.

D. Underwriters Laboratories Inc. has never made public any of its test data on FPE breakers. It is important to note that UL itself did not actually perform compliance testing on the breakers being manufactured by FPE over the years. Instead, UL's follow-up services inspectors were responsible for monitoring the production and the testing being done by FPE at the factory. This is where a major part of the fraud occurred, and UL was apparently not aware of it for many years. When the FPE Stab-Lok® problems surfaced, in part as a result of the CPSC investigation, UL performed some tests of its own. No UL report of that work has ever been made public. As with the Southwest Research work, lacking any information or claims to the contrary, it is reasonable to assume that the results of UL's special testing project at that time were consistent with the findings of FPE/Reliance, CPSC, and Wright-Malta as to the defective performance.

E. Recent Testing of Field Samples Over the past several years, I have acquired 28 FPE residential panels complete with their circuit breakers from homeowners in various parts of the United States who have had them replaced. Table 1, below, presents a summary of the test results to date (5/25/07) for the FPE Stab-Lok® breakers from the 28 field sample panels.

<u>Type of Breaker</u>	<u>Tested</u>	<u>No-Trip Failures @135% of rated current *</u>	<u>Jammed</u>
FPE Single-Pole, 1/2 Width	268	55 (21%)	3 (1%)
FPE Single-Pole, Full Width	77	6 (8%)	1 (1%)
FPE Single-Pole, GFI/Breaker**	5	3 (60%)	2 (40%)
FPE Double Pole, 1/2 Width***	39	13 (33%)	7 (18%)
FPE Double Pole, Full Width***	81	29 (35%)	7 (9%)

* includes those that jammed (did not trip at any overcurrent level tested).

** Circuit breaker function. Three of the combined GFI/Breaker units tested also failed when tested for GFI function

*** 2-pole breakers tested on individual pole overload

TABLE 2 - SUMMARY OF RECENT TEST RESULTS ON FPE STAB-LOK® CIRCUIT BREAKERS FROM 28 HOMES (results as of 5/25/07)

Those listed as "jammed" did not trip at any overcurrent level tested, and the jamming was confirmed in most instances by X-Ray inspection of the mechanism, which showed the trip lever released but the electrical contact points still closed.

These recent tests provide performance data for the single-pole FPE Stab-Lok® breakers, both 1/2-width and full-width, and for the 1/2-width double-pole breakers. FPE and others often state or imply that the only known problem within the FPE Stab-Lok® circuit breaker line is with the full-width double-pole breakers that FPE/Reliance called to CPSC's attention. That is not true, however. The recent test results, along with CPSC's own testing, clearly show substantial defect rates across the entire FPE Stab-Lok® residential circuit breaker product line.

The double-pole FPE Stab-Lok® breakers have a much higher rate of jamming (failure to trip at any current) than the single-pole. This reflects the fact that the major cause of the jamming of the double-pole breakers is friction in the "common trip" mechanism. This mechanism does not exist in the single-pole breakers.

The recent testing has also provided data on the 1/2-width FPE Stab-Lok® double-pole breakers, which had not been previously available. The data shows no significant difference between the 1/2-width and full-width double pole breakers; both types exhibit both calibration and jamming failures.

The results of the recent testing clearly demonstrate that the circuit breaker problems are not restricted to the full-width two-pole breakers that were the primary focus of the CPSC investigation. The problems extend across the full Stab-Lok® residential circuit breaker line, including the combined breaker/GFI.

3. FPE STAB-LOK® COMBINATION BREAKER/GFI

Five FPE Stab-Lok® breaker/GFI units were among the field samples tested. Four of them failed. This is not surprising, since the breaker/GFI design is based on the 1/2-width two-pole breaker, which is prone to jamming due to the common-trip mechanism. The single-pole breaker/GFI is essentially a double-pole breaker with one side actuated by a special circuit that reacts to a small (5 milliamp) difference in current between the line and neutral conductors passing through it. When the common trip mechanism causes a jam, it defeats both the circuit breaker and GFI functions. Two of the five units tested jammed. While the sample size is not large, it is nevertheless significant because it was a truly random sample. The five units tested were from different panels in different parts of the country.

A previous sample can be added: a field failure in which an FPE Stab-Lok® breaker/GFI "protected" a lighting circuit in which a short circuit occurred between a switch and its grounded metal (brass) cover plate. The event, which resulted in a serious injury, formed a relatively large globule of melted brass at the point of arcing to the grounded coverplate. The melting could not have happened if the GFI function had operated properly, as that would have limited the current to a level well below one amp. That FPE Stab-Lok® breaker/GFI was subsequently tested and was confirmed to be defective. Altogether, including this previous sample, I have crossed paths with six FPE Stab-Lok® breaker/GFI units, five of which were defective.

4. NON-FPE STAB-LOK® BREAKERS

Since the end of manufacturing of circuit breakers under the Federal Pacific Electric (FPE) brand, compatible Stab-Lok® type breakers have appeared under names such as "American", "Federal Pioneer", "Challenger", "Federal Pacific Reliance Electric", UBI, and "Federal Pioneer Limited" (Canada). There is insufficient data (too few samples tested) at this time on which to base an accurate judgment as to their reliability relative to the FPE breakers. In many instances, these are essentially the same product as FPE. Whether or not any substantive changes in design or manufacturing were made to solve the known problems associated with the original FPE Stab-Lok® breakers has not been determined. A summary of the test results on the non-FPE breakers that were included in the panels from 28 homes (Section 2E, above) is shown in Table 3.

Brand of Stab-Lok® Breaker	Tested	No-Trip Failures @135% of rated current *	Jammed
American FPE			
Single-Pole	18	6	1
Double Pole **	7	2	1
Challenger			
Single-Pole	5	0	0
Double Pole **	2	0	0
UBI			
Single-Pole	2	0	0
Double Pole **	3	0	0
Reliance			
Single-Pole	0	0	0
Double Pole **	1	0	0
Federal Pioneer (Canada)			
Single-Pole	3	0	0
Double Pole **	1	1	1

* includes those that jammed (did not trip at any overcurrent level tested).

** 2-pole breakers tested on individual pole overload

TABLE 3 - SUMMARY OF RECENT TEST RESULTS ON NON-FPE STAB-LOK® TYPE CIRCUIT BREAKERS (From same panels as Table 2 breakers, results as of 5/25/07)

5. FPE MAIN BREAKERS

Although there have been incident reports in which FPE main breakers have failed to trip under circumstances in which people thought they should have, there is very little test data available on which to base any conclusion - one way or the other - as to the reliability of the main breakers utilized in FPE Stab-Lok® residential panels. *(It is also important to note that FPE panels in many homes do not have a main circuit breaker. See section 7.)*

Ten FPE 90 and 100 Amp two-pole main breakers (Figure 6) are included in the results presented in Table 2. Four of the ten failed to trip at 135% of rated current as required.

6. FPE STAB-LOK® PANELS

Even if it were possible to replace all of the suspect FPE Stab-Lok® breakers with a more trustworthy type, that would not correct hazardous internal failure modes intrinsic to many of the FPE panels. Seven of the twenty eight FPE Stab-Lok® panels in the present study showed evidence of internal overheating due to this type of failure. The overheating ranged from mild to severe in these failing panels.

The "panel" is the unit within the enclosure, on which the breakers are mounted. The main electrical service feeders (electrically live, from the meter) are connected at the panel, and the panel has an internal conductor system that distributes the power to the individual circuit breakers. The internal conductor system consists essentially of "bussbars" (thick metal bars) that have sockets incorporated or attached, into which to which the breakers' "stab" contacts are inserted. There are many different types of bussbar constructions in FPE panels, three of which are shown in Figure 2.



A. Copper buss bar with punched openings.



B. "Z" clip, clamped to bussbar with 10-32 screw.



C. Stab socket on a post, attached with an 8-32 steel screw.

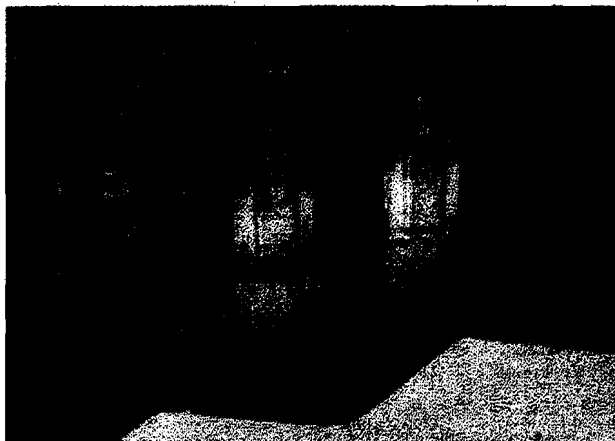
FIGURE 2 - THREE DIFFERENT FPE STAB-LOK® SOCKET DESIGNS

Of the three types illustrated, the one shown in Figure 2-C is known to have a high probability of deteriorating and overheating of the stab socket structures when subjected to significant current flow. Each individual stab socket plate is connected to its bussbar via a post (spacer), and the assembly is held together by an 8-32 steel screw. FPE panels with this construction are prone to overheating failure. The seven panels of the present study that showed evidence of serious overheating were constructed this way. One example is shown in Figure 3.



FIGURE 3 - OVERHEATING AT THE CONTACT BETWEEN THE BUSSBAR AND THE STAB SOCKET ASSEMBLY CAUSED THIS DAMAGE TO THE INSULATION.
(This view is of the backside of the panel. The damage cannot not be seen unless the panel is taken out of the enclosure.)

A more serious failure of this type has been documented.¹ In that instance, the failure had been severe enough to ignite a smoldering fire on the plastic insulating material. The fundamental weakness in this design is the use of a single, relatively flimsy 8-32 screw to hold a structure together that can feed up to four half-width breakers with a total "ampacity" (rated circuit capacity) up to about 160 Amps. Figure 4 shows how the stab socket plate and post are attached to the bussbar.



A. Cutaway - Bussbar, Post, and Stab Socket Plate.



B. Bussbar, Screw, and Post

FIGURE 4 - CONDUCTING PATH FROM BUSSBAR TO STAB SOCKET

Various material combinations were utilized by FPE in these assemblies. Some bussbars are copper, others are aluminum. Some posts are copper, others are aluminum. The worst case (most likely to fail) is where both the bussbar and the post are made of aluminum, and the best case (least likely to fail) is where both are made of copper. Inspectors (or homeowners, or electricians) have no way of knowing which materials are utilized in any particular FPE panel with this type of construction.

Inspectors can, however, determine if a particular FPE panel has this type of construction, and, to a limited extent, whether it has failing bussbar interconnections that have previously overheated. With the panel cover off, for this type of panel, you can see the ends of the screws holding the stab socket plate as shown in Figure 5. (Note: If you see slotted screwheads, that's a different type of panel construction.) The stab socket plates and the visible ends of the screws should have a bright metallic look. Darkening, discoloration, or signs of corrosion most likely indicate past episodes of abnormal overheating.

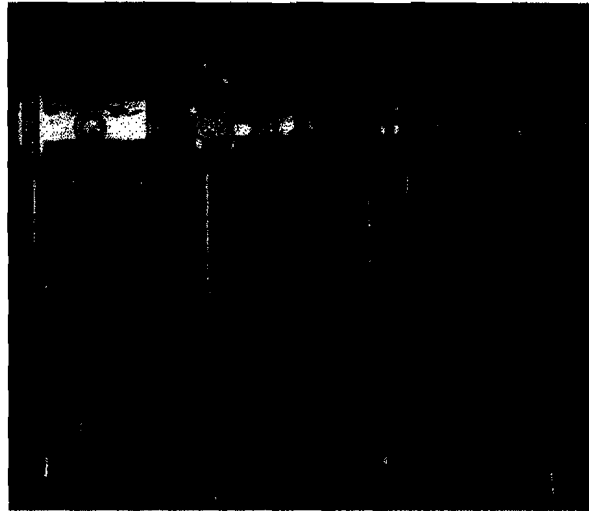


FIGURE 5 - THE ENDS OF THE SCREWS HOLDING THE STAB SOCKET PLATES ARE VISIBLE BETWEEN THE TWO ROWS OF BREAKERS. THIS IDENTIFIES IT AS A PANEL OF THE TYPE SHOWN IN FIGURE 2-C

Some FPE Stab-Lok® panels have 100-amp main breakers that feed into the bussbars through the same plate and post system. In this design, the two main breaker output terminals do not have the stab type contact. Instead, each one is screwed down to a plate the same size as the stab socket plate, but which has a threaded hole in it instead of the stab openings. As with the plate and post assembly, the screws clamping the main breaker terminals are size 8-32, which is absurdly small for clamping the terminals of a 100-amp main breaker.

To put the diameter of the 8-32 screw in perspective, it is the same size as used on common receptacles for connecting #14 or #12 copper wire (for 15- and 20-amp circuits), and has a diameter of only about $5/32$ ". An FPE panel and main breaker of this type is shown in Figure 6. The main breaker's output terminal mounting screws and the tiny Allen-wrench that fits them are shown in Figure 7.

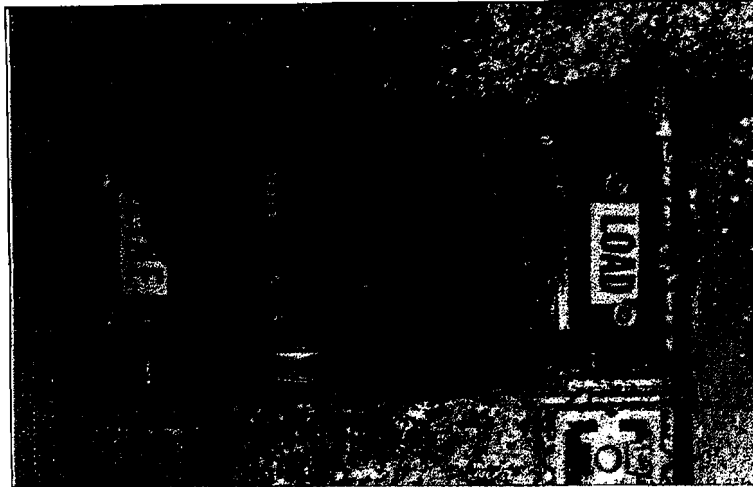


FIGURE 6 - FPE 100-AMP MAIN BREAKER CONNECTS TO THE BUSBARS THROUGH THE PLATE & POST CONFIGURATION, USING ONE SOCKET-HEAD 8-32 SCREW AT EACH TERMINAL TO ATTACH TO THE CONTACT PLATE.

(The heads of the 8-32 terminal clamping screws are seen above and below the "LOAD" label.)

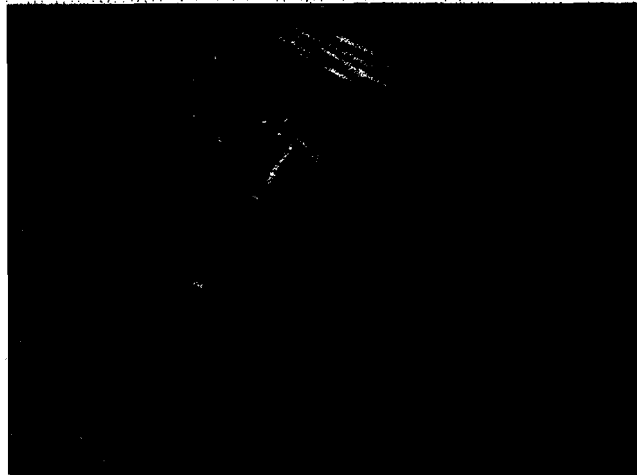


FIGURE 7 - ONE LOAD-SIDE CONTACT AND ITS 8-32 CLAMPING SCREW, ON THE FPE 100-AMP MAIN BREAKER OF FIG. 6. THE SCREW-HEAD TAKES A $3/32$ " ALLEN WRENCH, WHICH IS ONLY SLIGHTLY LARGER THAN THE LEAD OF THE #2 PENCIL.

(The larger hole provides clearance for the screw protruding from the stab contact plate)

7. FPE STAB-LOK® PANELS WITH NO MAIN BREAKER

Many of the FPE Stab-Lok® panels that are in homes today do not have any main breaker. This was allowed under the so-called "Rule of Six" in the National Electrical Code (NEC), which states, typically, that "The service disconnecting means ... for each set of service entrance conductors ... shall consist of not more than six switches or six circuit breakers ..." (NEC 1981, section 230-71a, for example.) This reduced the cost of the panel at the time of initial installation, but its nasty side effect is to totally eliminate the safety factor provided by having a main breaker. In the event that a branch circuit breaker jams on an electrical fault, a main breaker would still provide a measure of circuit protection at a higher current trip point. Without the main breaker, there is no circuit protection at all if certain breakers jam. An FPE Stab-Lok® panel with the "rule of six" configuration, normally called a "split bus" type, is shown in Figure 8.

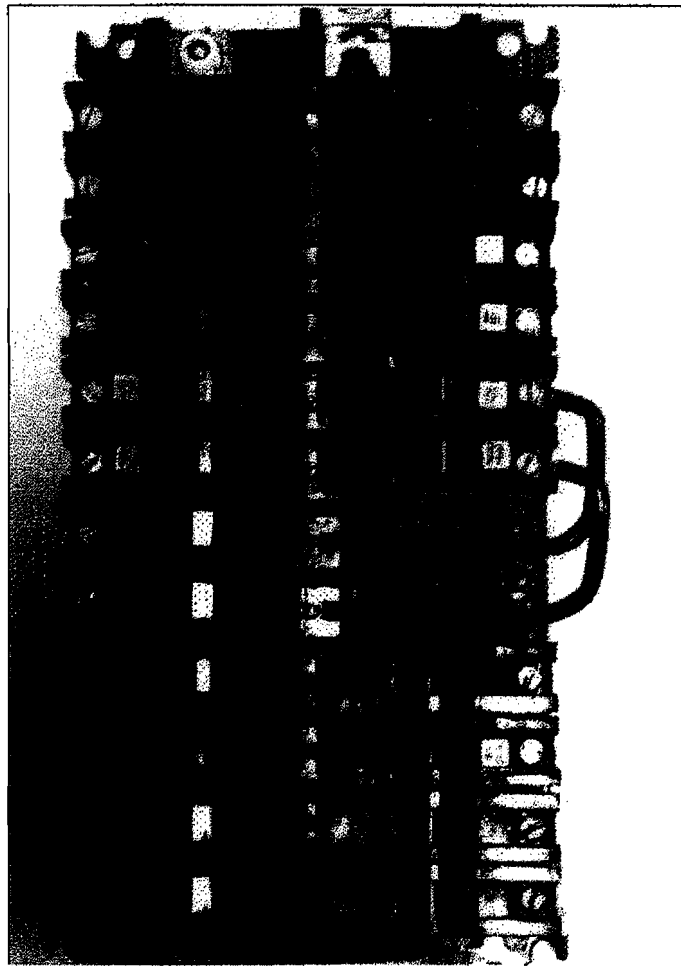


FIGURE 8 - FPE STAB-LOK® "RULE-OF-SIX" (SPLIT-BUS) PANEL WITH NO MAIN BREAKER. THE JUMPER CABLES ON THE RIGHT SIDE FEED THE LOWER SECTION.

There are many different design variations, but the essential element is that in these "rule of six" panels there is no main breaker, and, typically, the lower section of the panel is fed from jumpers coming from the output of one of up to six double-pole breakers in the upper section. The FPE Stab-Lok® double pole breakers have a relatively high probability of jamming when called on to trip, however, as previously demonstrated by the test results presented in Section 2. That means that the home with an FPE "rule-of-six" panel has an unacceptably high probability of having one or more circuits that are totally unprotected, in which the maximum current flow is only limited by what the transformer on the pole can deliver. This is likely to be of the order of 1,000 Amps or more.

7. HAZARDOUS FAILURE - AN EXAMPLE

On first glance, the FPE Stab-Lok® panel previously shown in Figure 8 looks normal. In fact, however, it clearly demonstrates several of the hazardous failure modes discussed in the previous sections. It is one of 28 collected for the recent testing. It is from a home built in 1974, whose new owners had determined in 1999 that it should be replaced. Their decision to replace it was in part prompted by information available on the internet regarding FPE breaker problems.⁷ According to the homeowner, who sent it to me for examination and testing, *"We recently had it replaced and found the breaker to the dryer fried in just the way described. Our electrician was astonished. Two others we had bids from dismissed our concerns with contempt."*⁸

Viewing the panel from the front, some subtle signs of overheating (as previously discussed) are evident. These are subtle compared to the view looking down at the top right (dryer) breaker, as in Figure 9. The main service cable connector has been rotated out of the way for better visibility of the damage. The plastic insulator is burnt and cracked. The breaker's internal mechanism can be seen through the hole burned through its side. Figures 10 and 11 show the damage to the separate items.

FIGURE 9 - VIEW DOWN TOWARD UPPER RIGHT OF PANEL SHOWN IN FIG. 8.



THE FPE STAB-LOK® TWO-POLE 30-AMP BREAKER FED THE CLOTHES DRYER.



FIGURE 10 - THE DAMAGE TO THE INSULATING STRUCTURE OF THE PANEL (FIG. 8) IS MORE CLEARLY VISIBLE WITH THE BREAKER REMOVED.

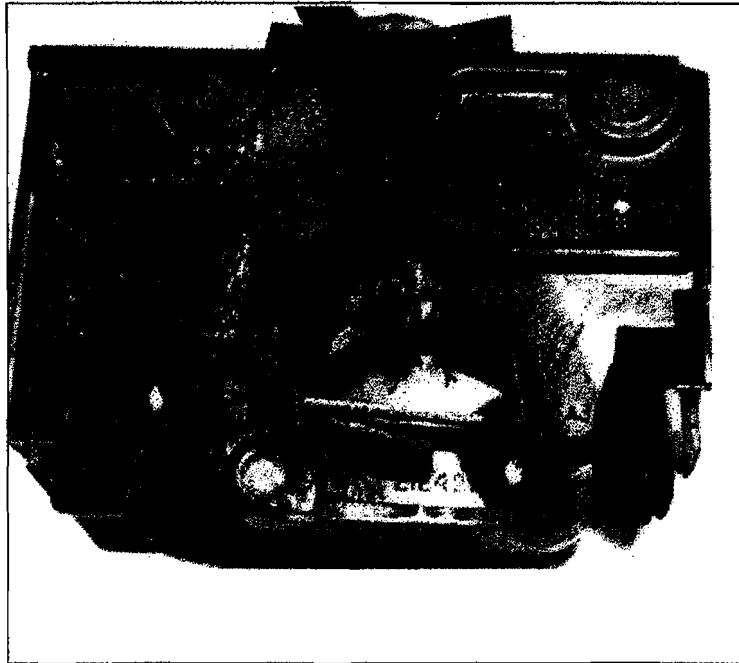


FIGURE 11 - THE FAILED FPE STAB-LOK® DRYER BREAKER (UPPER RIGHT, FIG. 8)

The damage to the breaker, from some previous short circuit or failure event, is exactly as had been demonstrated in the tests done for CPSC.^{2.3.4} Those tests demonstrated that, when an FPE breaker jammed and the current exceeded about 300% of the breaker's rating, the side of the breaker disintegrated and/or ignited from the heat being generated within the breaker. This is due to resistive heating of the breaker's internal current-carrying components, mainly the bimetal element and the flexible copper braid that connects to it. This is not an arcing failure, although the damage to the insulating materials of the breaker and panel sets the stage for an arcing fault to occur.

There are additional problems in this panel. Overheating damage occurred to the insulation on the backside of the panel. Further, in addition to the dryer breaker that failed (jammed) in the home, two other two-pole breakers from this same panel failed in the lab testing. All this in a panel that looked OK from the front!

Everything in the home was functioning. The dryer worked. Why wouldn't it, since the circuit breaker was jammed with its contacts closed? Keep in mind that this panel is one of the "rule-of-six" configuration. Before they replaced this panel, the homeowners unknowingly had a situation where, essentially, the clothes dryer was wired straight through to the power line transformer on the pole, with no functional circuit protection at all.

9. SOME MOMENTS IN THE HISTORY OF THE FPE PROBLEM

In about 1978, the Consumer Product Safety Commission started a project on circuit breakers. CPSC worked together with the National Bureau of Standards (NBS, now NIST), to develop equipment that would allow the testing of breakers in place in a home. Some in-home measurements on various brands, including FPE, were made prior to mid-1980.

In mid-1980, Reliance Electric Company, FPE's parent company, notified CPSC of problems with the FPE two-pole Stab-Lok® circuit breakers. Shortly thereafter, a complex legal tangle began involving several companies, including Exxon, Reliance, UV Industries, and Sharon Steel, centering on allegations of corporate misrepresentations by FPE. See Reference 6 (copy attached) for some of the details as reported at the time. It is reported that, according to Reliance Electric, UL "delisted" virtually the entire line of FPE circuit breakers. Reliance, FPE's "parent" company, reported problems with the full-size FPE two-pole Stab-Lok® breakers to CPSC. They did not report the problems in the rest of the Stab-Lok® line of residential breakers to CPSC.

In 1981 CPSC initiated a specific investigation of FPE's full-size two-pole Stab-Lok® breakers. The results clearly demonstrated that a significant number failed the UL standard tests, and that some would jam with the contacts closed on individual pole overcurrent conditions. There was no basis for disagreement by FPE/Reliance as to the nature of the defects, but they claimed that there was no safety hazard associated with the defective circuit breakers and that the jamming was a result of the applied test and would not occur in normal service.

Initially somewhat cooperative with CPSC, FPE/Reliance eventually refused to take any voluntary action toward recall or warning the public. They challenged the validity of virtually everything that CPSC had done in their investigation, and they took legal action to block CPSC's ability to respond to requests (under the Freedom of information act) for the test results and other documentation related to their FPE Stab-Lok® investigation.

In early 1983, CPSC closed its investigation of FPE breakers, and issued a press release to that effect.⁹ The Commission's press release indicates that it was "unable at this time to link these failures to the development of a hazardous situation," that "The Commission staff believes that it currently has insufficient data to accept or refute Reliance's position," and that they did not have the money to develop the required data. The press release provides no information as to the performance defects that CPSC found in their tests, and no information on the possible hazardous consequences.

CPSC did not have the data necessary to rigorously prove a direct relationship between the defective breakers and specific incidents of fire, injury and death. A rigorous connection between defects and injury was required, since the manufacturer of the defective breakers steadfastly refused to cooperate with CPSC toward any recall or consumer safety advisory, claiming that there was no hazard associated with their breakers. The manufacturer essentially challenged the agency to develop the data required to a level that could prevail in court, or drop the issue. CPSC did not have sufficient resources to support the multi-million dollar program that would have been required at that time to develop the data connecting breaker malfunction to injury, and it closed its investigation of the defective breakers.⁹

CPSC's inability to "connect the dots" between FPE Stab-Lok® circuit breaker malfunction and fire/injury incidents stems primarily from the fact that fire investigation and reporting is focused on the cause (ignition source) and its origin (location in the structure). Conventional fire investigation and reporting seldom goes to the depth required to prove with hard evidence that a circuit breaker did or did not function properly. As an example, a fire might start in a bedroom as a result of a short circuit in a table lamp. A fire investigator may suspect that circuit breaker malfunction was a contributing cause, but the ability to prove it is generally lacking. For CPSC, the cost of developing the required methodology, protocols, investigator training, and equipment, and then implementing a program to develop the required data was beyond the reasonable reach of the agency's budget.

Two important events had occurred prior to the Commission's vote that no doubt influenced their decision. In 1981, President Reagan took office. The political climate under the new administration was very much pro-industry, and CPSC was on the chopping block from a budget standpoint. The Commission did not have - and was not likely to get - the funds required for a protracted technical and legal battle with FPE/Reliance.

Equally important as background is that, in early 1982, CPSC lost a major battle in court on another electrical product - aluminum wiring. Kaiser Aluminum had challenged CPSC's jurisdiction over house wiring, claiming that it was not a consumer product. After a seesaw series of court decisions and appeals, Kaiser ultimately prevailed. Irrespective of any demonstrated hazard, the final ruling was that CPSC did not have jurisdiction unless it could prove that a substantial percentage of new home buyers contracted directly with the electricians for the installation of the wiring system. That is generally not the case. It is much more common to have the electrician working under contract to the builder or general contractor. After spending a significant portion of its energy and budget on that project over a period of about eight years, CPSC had to abandon its case on aluminum wiring hazards due to that ruling. In terms of the contractual relationships in home construction, the service entrance panel is analogous to the aluminum wiring. Although other aspects are quite different, the Kaiser appeal could serve as a model for FPE. No matter what level of hazard CPSC might be able to demonstrate associated with the defective Stab-Lok® breakers, they had some chance of losing if FPE chose to challenge their jurisdiction over the product. A precedent of a sort had been set in the aluminum wiring case.

Although a revision of their consumer safety information on FPE has recently been proposed, CPSC has not been seriously active in the FPE circuit breaker issues since their original investigation. Some of their technical documentation is available through the CPSC Freedom of Information Act Office.

The legal tangle involving Exxon, Reliance, FPE, etc., was eventually settled, with very little information made public. Most of the court records from that case are sealed. FPE was out of the circuit breaker manufacturing business by 1986, and the company continues today in the United States only as a legal entity. The contact address is an attorney's office.¹⁰

In Canada, Federal Pioneer (Schneider Canada) manufactures Stab-Lok® circuit breakers and panels. A recall was announced (by Schneider and The Ontario New Home Warranty Program) of two of their 15-Amp models manufactured between mid-1996 and mid-1997. The announcement states that *"In some circumstances these breakers may not trip. ... If the circuit breaker does not perform as intended, there is potential for property damage and/or personal injury."* (Note: I have included this item because of the quote, which reflects a proper concern for electrical safety, and it is not intended to imply any broader problem with the Federal Pioneer Stab-Lok® line.)

In the 1990's, the emergence of the Internet as a practical means of information retrieval and exchange resulted in renewed attention to the FPE Stab-Lok® circuit breaker performance problems. As a positive result of Internet communications, information on the problem has been made widely available, failure reports are being accumulated, and samples from homes are being made available for testing. As a negative result, a marketplace for used FPE Stab-Lok® breakers and breaker/gfi's has emerged. Given the data presented in the previous sections of this report, the purchase of used FPE Stab-Lok® equipment is risky.

In 1999, attempting to counter adverse information posted on the Internet regarding the FPE Stab-Lok® breakers, an article was written for the IAEI News (the monthly publication of the International Association of Electrical Inspectors).¹⁰ The author of the article is not identified except as "the former quality manager of FPE, who is a consultant to the company ...", and the article contains a disclaimer that the information that it contains "is neither approved nor disapproved by the International Association of Electrical Inspectors."

The IAEI article does not provide any details regarding the nature of the circuit breaker performance defects and malfunctions that had been uncovered by the FPE, CPSC, and other testing; it only points to UL "listing and labeling" as indicating that they are OK. In its summary, it says, "The gist of this article is that FPE Stab-Lok® load centers and circuit breakers are listed and labeled, and suitable for the usage intended." The article does not mention the fact that UL essentially de-listed virtually the entire FPE line of circuit breakers for a period of time, nor does it deal with the question of the fraudulent testing practices employed by FPE in obtaining and maintaining their UL listings and labels.^{6,11}

The anonymity of the author together with the disclaimer regarding IAEI agreement with the article's content make this article very unusual among articles in IAEI News. Nevertheless, electrical inspectors, having read the article in their own professional organization's publication, are likely to reflect the article's position when dealing with inquiries on this subject. Considering the New Jersey Court's finding of fraud on the part of FPE, the article that FPE/Reliance provided to IAEI news may be viewed as an extension of the fraud -- an effort to "whitewash" a serious breach of corporate and individual ethics and help protect the companies involved.

Presently, there is a class action lawsuit under way against FPE/Reliance in New Jersey. This legal action, initiated about ten years ago, has documented and proven FPE's fraud, that they (FPE) misrepresented to the public that their circuit breakers met the applicable (UL) standards when, in fact, they did not.¹¹

10. SHOULD FPE STAB-LOK® PANELS BE REPLACED?

If you inspected your own home and found that it had a fuse box with 1/3 of the circuits over-fused or with pennies behind the fuses, how long would it be before you had it corrected? Would you sleep tight without it being corrected? Would the fact that your house had not had any problem (burned down yet) because of the over-fusing and pennies influence your decision as to whether or not to take corrective action?

Unlike over-fusing and pennies behind the fuses, defective FPE Stab-Lok® breakers cannot be spotted by an inspector or tested by an electrician or homeowner. Without doing a functional test (at overload and short-circuit conditions) on each breaker, one pole at a time for the two-pole breakers, one cannot actually determine the present operating characteristics of a breaker. Which of the 20-Amp breakers really have the trip characteristics of 30-Amp breakers (same as over-fusing)? Which will not trip at all (same as a penny behind a fuse)?

Most electricians or electrical inspectors can only look at the breakers ("they look OK to me"), and operate the toggle ("they click on and off OK"). But without doing live-current functional testing on all of the breakers, it is impossible to determine which of the breakers in the panel are defective. Will they all trip safely and properly on electrical overload or short circuit? Electrical contractors and inspectors are generally not equipped to do that type of testing, and homeowners or potential purchasers are not likely to have the required budget for extensive specialized testing. In fact, thorough testing would most likely cost far more than changing the panel.

The presence of an FPE panel in a home should be classified as a "Safety Defect". The FPE Stab-Lok® breakers are primary safety devices of questionable operating reliability. It is not quite correct to call the non-tripping breaker a "fire hazard". That term should be reserved for the electrical failure that causes ignition. The breaker's function is to stop certain electrical sequences that could, if allowed to proceed, lead to fire in the building. If an electrical fire hazard involving excess current develops somewhere in the building, the breaker is supposed to trip and minimize the possibility of fire ignition. If the breaker is defective, fire is more likely to result.

There is no question but that the FPE Stab-Lok® panels should be replaced. There is no practical and safe alternative.

REFERENCES

1. "Failure Analysis of Residential Circuit Breaker Panel", Wright-Malta Corp., (by J. Aronstein, for U.S. Consumer product Safety Commission, Project #CPSC-C-81-1455), May 20, 1982 (Contains failure analysis of FPE Stab-Lok® panel that ignited, due to failure of buss-bar interconnections in the backside of the panel.)
2. "Final Report: Calibration and Condition Tests of Molded Case Circuit Breakers", Wright-Malta Corp., (by J. Aronstein, for U.S. Consumer product Safety Commission, Project #CPSC-C-81-1429), December 30, 1982 (Extensive calibration and functional testing of FPE breakers. Substantial percent failures to trip on overload.)
3. "Status Report - Evaluation of Residential Molded Case Circuit Breakers", Wright-Malta Corp., (by J. Aronstein, for U.S. Consumer product Safety Commission, Project #CPSC-C-81-1455), August 10, 1982 (Contains analysis of mechanism of failure of FPE two-pole Stab-Lok® breakers.)
4. "Phase II Report, Evaluation of Residential Molded Case Circuit Breakers", Wright-Malta Corp., (by J. Aronstein, for U.S. Consumer product Safety Commission, Project #CPSC-C-81-1455), March 10, 1984 (Contains experimental analysis of materials, construction, and performance of molded case circuit breakers, including FPE.)
5. Reliance Electric Company press release re: FPE Breakers, July 5, 1980
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7. <http://www.inspect-ny.com/fpe/fpepanel.htm>
8. EMail to D. Friedman (manager of site of Reference 7)
9. CPSC press release, March 3, 1983
10. "Federal Pacific Electric Co. Stab-Lok® Update", IAEI News, May/June 1999 p. 16
11. Partial Summary Judgement decision dated 8/15/02 by Judge Bryan D. Garruto, J.S.C., Superior Court of New Jersey, Law Division: Middlesex County, Docket No. L-2904-97

60 BUSINESS WEEK: July 21, 1980

Exxon buys a scandal along with a company

Exxon Corp.'s \$1.2 billion purchase of Cleveland's Reliance Electric Co. last year was designed to give Exxon a base for developing a new energy-saving technology to improve the efficiency of electric motors. What the purchase seems to have bought as well, however, is custody over a burgeoning scandal that involves the charge that defective electrical equipment may have been installed in perhaps 10% of all homes built or renovated over the past decade or more.

The charge, startlingly enough, is being made by Reliance itself. In a little-noticed suit filed in U. S. District Court in Cleveland on June 26, the company accused its own subsidiary, Federal Pacific Electric Co., of having employed "materially deceptive and improper manufacturing, testing, and certification practices" in the production of one of the nation's most widely used lines of circuit breakers. The suit asked the court either

to rescind Reliance's March, 1979, purchase of Federal Pacific from UV Industries Inc. or to order UV to repay the \$345 million purchase price, plus damages.

A week later Reliance notified the Consumer Product Safety Commission (CPSC) that in-house testing of its Stab-Lok line of two-pole, 220-volt circuit breakers indicates that some are prone to failure after repeated use "at relatively low over-current conditions." Reliance says it has not yet determined whether there is a significant hazard in using the device, and there have been few public complaints against it. But the company has stopped shipment of the product and requested distributors to halt further sales until tests are completed. Other unspecified problems also have been identified on three-pole Stab-Lok and molded-case circuit breakers. Says Reliance President B. Charles Ames: "The circuit breaker business at Federal Pacific has virtually ground to a halt."

Who is responsible? That may be only the beginning. The items involved cost only \$16.60 apiece. But if the CPSC determines that they should be recalled, the outlay could be enormous since it would require the services of professional electricians. The cost per house could be as much as \$100, trade sources say.

The underlying question in the Cleveland case is who bears the responsibility for this substantial potential liability. The principal defendant is UV Industries, which, after its sale of Federal Pacific, profitably liquidated itself last year over the strong objections of its major stockholder, Sharon Steel Corp. Following the liquidation, Sharon, controlled by Miami financier Victor Posner, bought the remaining assets—and presumably the liabilities—of UV for \$518 million in cash and debentures. Distribution of the proceeds was scheduled to take place on July 21, but Reliance is asking for the imposition of a "constructive trust" to prevent "dissipation" of UV's assets. Aside from Sharon's 22% interest in UV's liquidating trust, most of the company's shares are now in the hands of Wall Street arbitrageurs.

Procedural delays. UV Chairman Martin Horwitz strongly denies that he knew anything about Federal Pacific's alleged problems and says the case will be contested. A hearing on a motion to dismiss or transfer the case to New York was set for July 11, probably only the first of a long series of procedural maneuvering.

The Reliance complaint is vague in its allegations of what went on at Federal Pacific. Reliance charges that the company's financial success "was due substantially, if not entirely, to a pattern of materially deceptive and improper practices in the manufacture, testing, and sale" of its circuit breakers. Specifically,

the suit claims Federal Pacific used such practices to obtain certification for its equipment from Underwriters Laboratories (UL), whose label is usually required for a product to meet local electrical codes. The CPSC has not yet been told details of the alleged deceptive practices, but a commission staff engineer who

Exxon's new company is suing its own subsidiary for 'deceptive' practices

once worked for UL suggests that the practices may have involved rigging equipment at Federal Pacific's own test facilities in a way that would mislead UL's on-site inspectors.

UL professes surprise at the charge that its inspectors were somehow duped, and its general counsel, David Hoffman, insists that "there is no evidence to support the conclusion that products out in the field pose a substantial hazard to the user." Hoffman further says that because relationships between UL and its client, Federal Pacific, are "proprietary," he cannot even publicly confirm Reliance's open statements that its subsidiary's circuit breaker products were delisted after failing various tests.

The delisting occurred after UL changed testing procedures for circuit breakers following CPSC concern that the product might pose fire hazards. The commission last year asked the National Bureau of Standards to design new test equipment to determine performance under actual conditions in the home. The Reliance case could thus turn into an inquiry affecting the entire \$600 million circuit breaker industry.

It was apparently UL's action last fall in delisting nearly 400 circuit breaker labels that started the whole legal process. Reliance says it was originally told that such delisting was routine. But sales had slid so much by early May that it was obvious that the real problem was not the failure of circuit breakers to gain UL approval but "deception" in obtaining certification over a long period of years.

Reliance has suspended with pay Federal Pacific President Harry E. Knudson Jr. and four other key executives. "The men are long-term employees and their integrity is not being called into question," Reliance said in a statement distributed on July 1 to all Federal Pacific employees. Contacted at his home in Watchung, N. J., Knudson refused comment.

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DEFECTIVE RESIDENTIAL CIRCUIT BREAKERS,
A COMPANY THAT COMMITTED FRAUD,
and CPSC'S OUTDATED "SAFETY" INFORMATION

*A summary as to why CPSC's public safety information on
FPE circuit breakers needs to be revised.*

It is universally recognized that properly-sized and functional circuit protection devices are necessary for residential electrical fire safety. Defective circuit breakers in a home increase the likelihood of fire ignition in the event of an electrical overload or short circuit. CPSC recently stated this fundamental principle of electrical fire safety as follows (<http://www.cpsc.gov/CPSCPUB/PREREL/prhtml07/07036.html>):

"The U.S. Consumer Product Safety Commission ... announced a voluntary recall of the following consumer product ... The recalled circuit breakers ... ***might not trip when they are overloaded, posing a fire hazard to consumers***" *(emphasis added)*

In the above instance, the companies involved cooperated with CPSC. The CPSC statement is crystal clear and correct as to the safety hazard posed by defective circuit breakers. An older press release centers on defective circuit breakers manufactured by a company that refused to cooperate with CPSC. In that instance, a press release was issued that conveys a contradictory message, seeming to state that breakers that do not trip properly when they are overloaded do not pose a fire hazard to consumers. That older press release is presently the only CPSC information on a line of proven-defective breakers.

During the period from the mid-1960's to the early 1980's, Federal Pacific Electric Company (FPE) manufactured and marketed a line of residential circuit breakers which had an abnormally high defect rate. Their line of breakers sold well because of low price, and were installed in more than 20 million residences during that time.

Prior to 1980, FPE ownership had changed. A complex set of lawsuits developed in about 1980 centering on fraudulent information provided by FPE management to the buyers. In layman's terms, the companies that purchased FPE wanted their money back because of misrepresentations that FPE was a "going concern" with a sound product line. There were claims of fraud in the testing of the circuit breakers, and UL suspended most of FPE's listings, pending correction of various problems. Eventually, the legal actions were resolved, and the records of those lawsuits were sealed as conditions of the settlements. The public was never warned of the safety exposure that resulted from the installation of the defective circuit breakers that FPE produced and sold over the years.

In the early 1980's, CPSC investigated Federal Pacific Electric (FPE) circuit breakers and found that they did not reliably trip as required. Under certain conditions some would jam completely. CPSC did not have the data necessary to rigorously quantify the relationship between the defective breakers and incidents of fire, injury and death. A rigorous connection between defects and injury was required, since the manufacturer of the defective breakers steadfastly refused to cooperate with CPSC toward any recall or consumer safety advisory, claiming that there was no proveable hazard even though their circuit breakers did not operate as intended. The manufacturer essentially challenged the agency to develop the data required to a level that could prevail in court, or drop the issue. CPSC did not have sufficient resources to finance the work required to connect FPE breaker malfunction to specific injuries, and the agency closed its investigation of the defective breakers. (CPSC press release, March 3, 1983.)

The inability to "connect the dots" between circuit breaker malfunction and fire/injury incidents stems primarily from the fact that fire investigation and reporting is focused on the cause (ignition source) and its origin (location in the structure). Conventional fire investigations seldom go to the depth required to prove that a circuit breaker did or did not function properly. As an example, a fire might start in a child's bedroom as a result of a short circuit in a table lamp. A fire investigator may suspect that circuit breaker malfunction was a contributing cause, but the ability to prove it is generally lacking. For CPSC, the cost of developing the required methodology, protocols, investigator training, equipment, and then implementing a program to develop the required data was beyond the reasonable reach of the agency's budget. The opening paragraph of the 3/3/83 press release ambiguously conveys an entirely different message, however:

"The Consumer Product Safety Commission announced today that it is closing its two year investigation into Federal Pacific Electric Stab-lok type residential circuit breakers. This action was taken because the data currently available to the Commission does not establish that the circuit breakers present a serious risk of injury to consumers."

How many different ways can that paragraph be interpreted? Considering the information that CPSC had at the time, and the additional information that has since been developed, that paragraph is misleading, and it encourages consumers to retain, rather than replace, circuit breakers that have been proven to be seriously defective. The information that CPSC had at the time is as follows:

1. Extensive test data from CPSC's own lab, FPE, Reliance Electric, Southwest Research Institute, and Wright-Malta Corp. (contract testing for CPSC) identified the nature and extent of the breaker defects. There was no contradictory test data. Both new and used breakers (from homes) were tested
 2. Initial statistical analysis toward estimating fires and injuries due to the defective breakers.
 3. Knowledge that the defects extended over a broader portion of FPE's product line than had been reported by FPE and/or Reliance.
 4. Work by NBS (National Bureau of Standards, now NIST), both theoretical and experimental toward determining the threshold of overcurrent for fire ignition in residential wiring.
-

Since that time, the following additional information has been developed:

A. The underlying reason for the presence of defective Federal Pacific Electric ("FPE") Stab-Lok® circuit breakers in millions of homes today is now publicly known, through evidence and Court findings (published in 2005) in a class action lawsuit in New Jersey. For a long time, while this line of circuit breakers and panels was in production, FPE cheated on its testing to cover up the fact that the product did not reliably meet the applicable UL (Underwriters Laboratories, Inc.) safety standard requirements. Because of the cheating, defective breakers got into the market, past the normal electrical safety system of checks and balances. Although the company ceased manufacturing these breakers in the mid-1980's, their defective circuit breakers remain today in millions of homes, presenting an increased risk of fire and injury.

B. The body of test information as to the defects now includes recent results from FPE breakers that had been installed in homes across the country. The data encompasses about 500 samples from 28 homes.

C. The jamming defect of the FPE 2-pole breakers, which was originally found in the lab testing after application of a mechanical endurance test, has been proven to manifest itself in the breakers actually present in homes. FPE's claim that the jamming noted by CPSC was an artifact of the accelerated life test has been proven false. This is the most serious safety defect of the FPE breakers.

Today, CPSC's old FPE press release is frequently employed to counter recommendations made by many electrical contractors and home inspectors that the FPE panels should be replaced. As a result, the rate of replacement is relatively low. Should CPSC change its perceived position on these breakers, bringing it into line with fundamental electrical safety concepts, then the rate of replacement of the FPE panels will increase. Based on the data and methods that will be discussed in the April 10th meetings, I have estimated that if CPSC revises its FPE information appropriately, the cumulative effect over the next ten years will be as follows:

Reduction of Fires = 7, 825
Reduction of Injuries = 320
Reduction of Deaths = 36
Reduction of Property Loss = \$112 million

The desired consumer safety improvement could be effectively accomplished by issuing a new statement, by a modification of the old press release, or by a "correct the record" release. With a very few sentences, CPSC can substantially improve electrical fire safety in this instance.

I do recognize that development of an appropriate statement is not a trivial matter. It appears that FPE has CPSC hog-tied, however, and nobody has been assigned the task of developing such a statement. I do believe that it can be done, and trust that the Chairman's office will see to it that CPSC's consumer safety advice regarding FPE breakers is brought into line with established fundamentals of electrical safety.



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U.S. Consumer Product Safety Commission
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April 3, 2006

Subject: FPE Circuit Breakers - CPSC 1983 Press Release Confusion and Misrepresentation

Dear Mr. Stern:

Although the subject CPSC FPE press release was issued almost a quarter of a century ago, it is currently being used to justify keeping defective FPE "Stab-lok" circuit breakers in homes across the country. This CPSC press release is unique in the field of electrical safety, as it is the only published public statement by an authoritative source to suggest that circuit breakers that fail to operate properly do not increase the risk of fire damage and personal injury. CPSC stands alone in the world of electrical and fire safety on this point.

Ample evidence exists to demonstrate that FPE breakers and panels are actually failing and contributing to hazardous incidents in homes. My previous letter (March 7, 2006) contained 50 examples of failure incidents of FPE equipment, some of which resulted in fire and personal injury. I previously provided up-to-date test data on FPE circuit breakers from homes across the country that shows a very high defect rate for such a critical safety device.

Consumers are most often alerted to the safety defects of FPE circuit breakers at the time of sale, modification, or inspection of a home. Many electricians and home inspectors warn present and potential homeowners of the defective performance of FPE breakers. Countering such warnings, some realtors, electricians, and inspectors state that there is no safety exposure attributable to FPE breakers and therefore no reason to replace them. The underlying basis for that position invariably includes an erroneous interpretation of the CPSC 1983 press release.

Except for the CPSC press release in question, it is universally accepted that circuit breakers which do not operate properly represent an increased risk of fire and injury. That is clearly stated, for instance, in the following quote from a Canadian Safety Advisory Bulletin regarding a circuit breaker recall by CSA and Schneider Canada (which, coincidentally, is the present manufacturer of the "Stab-lok" line of circuit breakers):

"In some circumstances these breakers may not trip. ... If the circuit breaker does not perform as intended, there is a potential for property damage and/or personal injury." [1]

The first part of that statement mirrors the defective circuit breaker performance that CPSC uncovered in its FPE investigation, in which about 30% of the FPE breakers tested did not trip in some circumstances when they should have. The failures ranged from the most severe, breakers that jammed completely and would not trip at any current, to breakers that tripped only at current in excess of that allowed by the applicable standard.

The CPSC FPE press release, however, contains the following statements, which (often quoted out of context) imply that there is no hazard associated with FPE breakers when they fail to trip properly:

"... the data currently available to the Commission does not establish that the circuit breakers present a serious risk of injury to consumers. ... the Commission is unable at this time to link these failures to the development of a hazardous situation... failures of these FPE breakers to comply with certain UL calibration requirements do not create a hazard in the household environment. ... FPE breakers will trip reliably at most overload levels ... where FPE breakers may fail to trip under realistic use conditions, currents will be too low to generate hazardous temperatures in household wiring. ..." [2]

Those words, coming from CPSC, carry a lot of weight when people consider whether or not there is a safety risk associated with the FPE breakers in their home. Even within the context of the entire press release, those words convince many property owners, buyers, electricians, and inspectors that the FPE breakers are OK, that there is no cause for concern, and that there is no reason to replace them simply because they may not trip properly.

FPE breakers that do not trip properly create conditions exactly the same as overfusing or using overamped breakers. Worse, of course, are the FPE breakers that jam and will not trip at all. The above statements from the subject press release are in sharp contrast to CPSC's safety warnings on overfusing or overamped circuit breakers in the "CPSC Guide to Home Wiring Hazards", which states:

"WARNING OF POTENTIAL HAZARDS ...electrical panel contains fuses or circuit breakers rated at higher currents than the ampacity (current capacity) of their branch circuits, sometimes called overamped or overfused" (p. 5) ..."Your wiring may be exposed to overloading that can lead to fire" (p. 14) ... "Overloading that leads to fire can occur" (p. 15) ... "These overrated devices allow overloading of your branch circuits that can lead to fire." (p. 16) [3]

How can it be that, according to the CPSC guide, fires can occur from circuit overloading, due to overfusing or overamped breakers, but, according to the CPSC FPE press release, there seems to be no safety risk when circuit overloading occurs due to FPE breakers not tripping properly? CPSC contradicts itself on this fundamental concept of electrical safety!

As an important example of its misuse, the CPSC press release serves as the cornerstone of an article that appeared in the May/June 1999 issue of IAEI News (the magazine of the International Association of Electrical Inspectors). The entire CPSC press release is reprinted at the end of the article in support of the position that electrical inspectors should disregard information that implies that there are safety problems associated with FPE circuit breakers. [4,5] On the basis of that relatively recent article, many jurisdictional electrical inspectors take the position that, according to CPSC, there is no problem with FPE breakers. The article's success in delivering that message depends on the fact that few people reading the article will actually take the time to read the full text of the CPSC press release, and, even if they do, they are likely to misinterpret its message.

The body of the IAEI article misrepresents the CPSC press release in that it quotes only the statements that support its message. Some people may catch that if they bother to read the full text of the press release, but most will not. It should be noted that the article was placed in IAEI News on behalf of FPE and its successor companies. The article is unlike others in the magazine in that it contains a disclaimer by IAEI and the author is not identified by name. The article says that its unnamed author was the quality control manager for FPE. (It should be mentioned that FPE recently was judged guilty of fraud in a class action lawsuit in New Jersey. The company was found to have committed fraud by labeling and marketing their circuit breakers as meeting the applicable UL standard when, in fact, they did not.)

From an electrical safety standpoint, the major consequence of the ambiguous CPSC press release is confusion among homeowners, electricians, and inspectors as to whether or not the FPE circuit breakers are defective and should be replaced. Following are some examples.

"I have recently purchased a home in the city of Springfield, MA. During the home inspection my inspector brought to my attention the Federal Pacific Panel. He warned us of the possible fire hazard associated with these specific panels. ... The seller checked with local electrical inspectors and was informed that the panel met code for existing equipment. ..." [6]

"I am in the process of purchasing a house and my inspector pointed out that the house has a Federal Pacific electric panel. The seller refuses to replace it. ... The thing I thought was interesting was that the only information that even remotely supported the safety of the panels, the CPSC press release, really only said that the CPSC decided not to pursue the issue, not that they really said they are safe. ..." [7]

"I am a home inspector in St. Louis, MO. I inspected a home about a month ago which had a FPE panel in it. I reported the panel as a 'latent safety defect'. I received a call from the buyer's agent stating that she will never use me again, citing another ASHI inspector who reported the panel as 'no problem'. ... I have a couple of VERY upset agents and a very upset seller who have contacted another inspector and several electricians. They all say everything is fine. Am I wrong?" [8]

CPSC is not consistent and clear in its message on this important safety issue. Its information regarding FPE circuit breakers should be updated to eliminate any chance that it can be interpreted as promoting the continued use of defective breakers.

Yours truly,

(original signed by)

Jesse Aronstein, Ph.D., P.E.

References

1. Safety Advisory Bulletin, Office of the Fire Commissioner - Ministry of Public Safety, British Columbia, Canada (Example of one of many outlets for the same recall information), www.pssg.gov.bc.ca/firecom/safety/sa39.htm
2. CPSC Press Release, 3/3/83, <http://www.cpsc.gov/CPSCPUB/PREREL/prhtml83/83008.html>
3. CPSC Guide to Home Wiring Hazards, <http://www.cpsc.gov/CPSCPUB/PUBS/518.pdf>
4. IAEI News, May/June 1999, p.16
5. IAEI Website, http://www.iaei.org/subscriber/magazine/99_c/stablok.htm
6. EMail, 3/30/99, to D. Friedman
7. EMail, 7/16/01, to D. Friedman
8. EMail, 2/21/01, to D. Friedman

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Richard Stern
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March 7, 2006

Subject: FPE Circuit Breakers - Field incidents of fire and personal injury.

Dear Mr. Stern:

Regarding my request for CPSC to update its information on FPE circuit breakers, you have asked for supporting information on two points; that failing FPE circuit breakers are contributing to fire and personal injury losses, and that CPSC's 1983 press release on its FPE investigation is being misinterpreted and/or misused. This letter responds to the first point, and a companion letter will follow responding to the second.

Following are 50 summary accounts of some of the incidents that I am aware of. Most of these come to me via Mr. Daniel Friedman, who maintains a website for home inspectors and homeowners. Copies of the original documents are enclosed. Please note that the names and EMail addresses of the people involved should not be used or made public without their consent.

The hazards that are depicted in these incident reports are predictable from the results of the original CPSC investigation. I trust that this collection of fire and incident reports will motivate CPSC to revise its outdated and ambiguous consumer safety information on FPE breakers and panels.

Yours truly,

[original signed by]

Jesse Aronstein, Ph.D, P.E.

I. Newspaper Article, 2/3/99, "Home Fire Attributed to Circuit Breaker" (NJ, Dateline Journal)

"A Washington Avenue fire may have been caused by a faulty circuit breaker that has a long history of being undependable according to Fire Prevention Officer David Meisenberg, ..." "... when rafters in the space between the attic and the ceiling of the room below caught fire from overheating wires." "...what probably happened at the Washington Avenue home is that the circuit breaker did not stop the flow of electricity through an abnormally stressed circuit. The wires overheat, like those in a toaster. Instead of burned toast, burned beams resulted, since the wires were tacked to them in accordance with the code. ..." "...identified the trouble prone switch box as an old Federal model ..."

2. EMail 8/7/99

"Last month a co-worker was responding to an apartment maintenance request ... he found the breaker on ... and no lights, he said he had power on the load side. Thinking that there was a loose connection at the first fixture he returned to the shop for a ladder. What we didn't know was that the problem was a short and that the Federal Pacific breaker had failed to trip. We never had a chance to return with the ladder, the fire department interrupted our repair. Nobody was at home so nobody was hurt. Five homes were left uninhabitable and the damages will probably reach \$500,000. Not bad work for one faulty 15 amp breaker. ..."

3. EMail 8/17/99

"We sustained a horrible fire in January of this year. It was stated by the fire officials in our county that it was a BX blow out. Electrical wiring in the wall. We did have a FP electrical panel at the time. We were later told that the fire may not have occurred IF the FP electrical panel had done its job of "shutting" activity down so to speak. Forgive my poor terminology and my novice perspective. We have spoken to many electricians in the interim and were told that FP electrical panel was a horror. ..."

4. EMail 2/4/02

"I have a Federal Pioneer panel in my house with stab lock breakers. On two separate occasions breakers have failed to trip under a short circuit condition. One was a 15A single pole and the other was a 20A double pole. I am quite concerned about this ..."

5. EMail 6/24/02

"Doing an inspection last week, I found a Federal Pacific main panel with Stablock Breakers in place. No service disconnect, house not occupied, so I decided to trip some breakers. I tripped a 50 amp breaker to the kitchen oven and microwave unit in a newly remodeled kitchen. The breaker clicked to the off position with no problem, but the circuit stayed hot. Tripped it off and on several times and no change or loss of power to the oven set. I then tried the dryer circuit. Tripped a 30 amp breaker to the dryer then checked outlet with a stinger and found this circuit was still hot. Two out of three two-pole breakers were faulty. That's scary if you think of a home owner doing some repairs and modifications to something and expecting the circuits to be dead after flipping the breakers off. These things just don't work properly."

6. EMail 7/12/02

"We had a fire in my home Tues. due to over-current and FPE Stab-Lock Panel 100amp service. The panel failed to trip and fire occurred within a wall. We have been in this home one month. the home was inspected and we were given no warning about FPE panel. ..."

7. EMail 8/19/02

"I had the fuses in our home replaced by a Federal Pacific panel and breakers approx. 25 years ago. There have been 3 occasions when I thought the breaker should have tripped and it did not. The last time this happened was about 3 weeks ago. I consulted a electrician and he stated that these breakers are defective and should be replaced. ..."

8. EMail 10/22/02

"This story really helps to put in perspective that experiment that Alan, John, and I did a few years ago, where the FPE breakers wouldn't trip even though the service wires were whipping around from the high currents being carried through those breakers."

9. EMail 12/24/02

"... A gal in her 90's had an electrical fire a few nights ago. I removed a burnt-up 240v electrical baseboard heater and discovered that the circuit remains hot with the main switched off. It is a 200 Amp (doublethrow 100 amp) Federal Pacific Electric breaker. ..."

10. EMail 4/30/01

"I have made a report that has opened up a lot of discussion and concerns about FPE breakers and panels. These are located in all the ICBM sites. It seems (nobody is admitting, yet) a bad fire took place at one of the sites and the strong suspect is the FPE breaker/panel. ..."

11. EMail 5/2/01

"My neighbor has a 1974 mobile home, the FPE panel is in... ... The Main breaker switch on the panel has been tripping during operation of - or when turning up the thermostat on - the furnace. The circuit breakers (4 ganged to two of 2 ea.) have not been tripping. Only the Main trips. ... "

12. EMail 5/14/01

" ... Just as I was screwing down the panel it blew up and flames shot out. It kept on arcing and buzzing. It kept on going and the main breaker didn't trip. Finally, I heard a power line fuse blow somewhere in the neighborhood and it finally stopped. ... "

13. EMail 10/13/01

" ... I have been a practicing electrician in Philadelphia for 15 years and have experienced some anecdotal evidence of problems with the FP single pole breakers... in each case, large scale fire involvement of the homes was prevented only by metallic wall cases which contained fire until the conductors themselves had melted 'open', thus interrupting current flow. The circuit breakers remained on! ..."

14. EMail 11/10/01

"If I had received this info sooner I would have held on to what was left of FPE TYPE-NEJ 240 VOLT 150AMP breaker and sent it to you ASAP. The inside of that breaker was in incredible condition, the rust was unbelievable it was like opening a rotten peanut ..."

15. EMail 1/7/00

" ... Last week I had to work on an electric furnace in an older mobile home that has a 200 amp FPE entrance panel in it. The problem turned out to be the 100 amp breaker that feeds the furnace. It was apparently original to the trailer and would not hold. The customer was able to locate a new 100 amp FPE breaker at a local home center (I was very surprised about that!) which they bought and I installed. This morning they called in to the office and said that the fire dept. had just left, and that the furnace had caught on fire. ... The customer told me that he heard what sounded like a loud firecracker and when he opened the front of the furnace he said that sparks were flying everywhere so he shut off the main breaker and threw water on the furnace. What I found was that something (chaffing?) had caused the wire to short and the new 100 amp breaker never did trip. It had arced enough to melt a hole in the bottom of the box where the electric feed enters the furnace. ..."

16. EMail, 5/16/00

" ... I was inspecting a project in Vancouver, when the manager was paged to respond to a fire that had just started in one of the units! Hot Damn! It was the 2-pole breaker for the clothes dryer that caught on fire. The bus bar was just about black in places. ..."

"Last year, I was inspecting a run-down shack that a friend of mine had just bought. ... I spied a Stab-Lok panel with its cover missing and cut live wires sticking out of it like a porcupine. I asked if we could do an experiment. We laid a pipe across an ironing board and touched the live wires to it. It made a dandy welder. We could make arcs all day and that breaker stayed in the on position like a real champ. Six out of the ten breakers in that panel behaved that way. The other four tripped reliably over and over."

17. EMail, 2/7/04

"... I just replaced a Stab Lock panel on 2/4/04. I've had some problems with breakers fail to trip."

18. EMail 7/3/04

"Here is a picture of a FPE panel where the aluminum single strand wire overheated for the AC condenser while I was inspecting it and the breaker did not trip. I tripped the breaker manually three times before the condenser would shut off."

19. EMail, 9/13/04

"I just found and read your articles about faulty circuit breaker boxes. They were very interesting to me as our house in Madera California burned down in Oct. of 1980 due to a faulty Reliance/Exxon circuit breaker. (It didn't trip.) Our fire inspector was Sam Garza who found the problem. Our insurance company (Farmers) ended up winning a lawsuit against Reliance/Exxon ..."

20. EMail 12/19/95

"I am a electrical contractor in south eastern Idaho ... my experience with FPE panels is they will not trip which causes fires and numerous other problems."

21. EMail 3/30/05

"... I found out for myself these things do not work. I was fortunate there was no fire. Had I not been there when it happened, there probably would have. It does not trip."

22. EMail 2/23/03

"... Also, we recently installed a window air conditioner in the master bedroom. We have used it plugged into a 15 amp wall duplex. At first it would trip the breaker if anything else plugged into the circuit was turned on. Recently, I checked it by turning on other appliances with the AC in operation. The 15 amp breaker did not trip but the AC seemed to load down when the compressor came on. Turning off other appliances on the circuit made the AC resume normal operation. In the test, the circuit breaker did not trip. ..."

23. EMail, 2/11/03

" ... I had a pair of Klein short handled needle nose pliers that I was using to remove a KO in the bottom of an old FPE breaker panel. I didn't know the side of a #10 wire of a dryer circuit was pushing outwards at the hole opening. It became trapped in my twisting motion.

A massive WAAAAUUUGGGGHHHHH arcing noise ensued and then stopped. The wire burned apart from the dead short I produced, burned a big notch in my pliers, and when I went to inspect the circuit it was still live. The 30 amp 2 pole FPE breaker turned steel to molten metal on my pliers in a dead short but did not trip."

24. EMail 3/7/03

"I'm an electrical contractor in the SF Bay area and have a lot of exposure to FPE panels. I will not work on one nor add any circuits to it unless the client absolutely cannot afford to replace it, and even then only with a letter of release of liability.

I did one service change for clients in Berkeley, where they were getting some very strange electrical behaviors, odd dimming and brightening of lights, trouble with computers, etc. until half the house went dead. They had a 100A, 240V main (FPE) in which one hot leg was very hot to touch, discoloration and cracking of the outer shell of the breaker, the breaker handle in the 'on' position, and the other hot leg open. It appeared that there had possibly been an overload condition on the one hot leg, the breaker had tried to trip and had jammed, and the clients had moved a lot of their loads to the other hot leg creating an overload condition on it. The breaker was not tripping. Pretty much the classic FPE failure."

25. EMail 4/26/03

"I am an electrician in Colorado Springs. While moving a single pole breaker in a Federal Stab Lock panel it caught fire. It completely melted the buss bar and smoked the homeowners home. It appears to be a buss bar failure. ..."

26. EMail 11/5/05

" ... I have had 2 instances where one could have expected a tripped circuit breaker. One was a locked rotor on my HVAC system outdoor unit fan. While this motor is impedance protected, I am suspect. The other instance was where a console TV set burned out.

I am a licensed master electrician in Virginia with 30+ years of experience ..."

27. EMail 2/3/98

" ... Back in late 1981 or early 1982 I accidentally drilled into my range feeder. Although I had recently exercised my breakers, and in spite of the fact that I vaporized the tip of an Irwin Speedbore drill bit, and about 3/8 inch of one side of a No. 6 service entrance cable, neither the feeder nor the 150 amp main tripped."

28. EMail 11/22/97

" ... I have tested a 20 amp FPE breaker with 72 amps on a 12 gauge wire. The explosion that occurred when I tried to turn off the breaker left permanent scars on my right hand and left arm. Also, a 3 pole 70 permitted a 10 HP 3 phase motor to melt the Allen Bradley Contactor, the load wires, and part of the line wiring, without tripping. The motor melted internally. ...

29. EMail 10/16/9

" ... Federal Pacific Electric ... I have some experience with them that may be interesting to you.

I have been working on making portable circuit breaker testers for a few years now. I tested one of them on my home' panel's breakers and it worked great. Then I went to my parents' house to show them the great thing their son had mad and no matter what I did their breakers did not respond (they would not trip). ... I did experiments where I would drop an 800 amp resistive load (virtually a short circuit) for a short period of time and also where I placed a 40 and 80 amp resistive loads for extended periods of time. I even wired up a separate circuit next to the panel with 12g wire so I wouldn't have to take the old wiring into account.

Nothing had any effect. They behaved as if they were pieces of wire. In fact, I have not been able to get them to trip under any circumstances! ... I purchased new FPE breakers, but they performed no better. ... Personally I can't believe there is still any sort of debate about all this. It's crazy."

30. EMail

"Back in 1993, my employee with ten years experience had to tackle a Federal panel. The problem was the main breaker had burnt up and it was during the winter months here in NJ. Being that we did not have a replacement he bypassed the main. After getting the power back on, as he was pushing and reseeding the breakers and all of a sudden the panel blew up in his face causing him to have first and second degree burns on his face and hands. Although bypassing the main wasn't the smartest thing he had done but for a temporary solution getting the power back on so that the pipes would not freeze. Just so you know this job was done at 11:30 PM so that a panel change or service change was out of the question. ... There is no doubt in my mind that Federal Pacific breakers and panels are dangerous ..."

31. EMail

" ... these panels fail at the contact point of the bus, causing extreme heat and cause the entire panel to fail."

32. EMail 1/4/99

" ... I have two FPE panels in my home installed around 1989. I have single pole 120V breakers that will not trip. I recently took a hot line and touched it to ground. The circuit draw was so large that every light in the house dimmed but the breaker never tripped. After this incident I began to check further. I placed a 40 amp load on a 20 amp circuit. Same result no breaker trip. ... I know I am sitting on a fire waiting to happen."

33. EMail 2/10/99

" ... Our insured owns a large chicken broiler barn that is wired with FP panels and Stab-lok breakers. He is worried about an electrical fire as he has had more than one failure on those breakers. ..."

34. EMail 2/17/99

" ... I didn't know anything about FPE circuit breakers until I read on a local newspaper that a house fire was due to FPE breaker failure. Two days ago, my kid was playing Nintendo and suddenly the lights went off. Quickly, I went to check the service panel and the FPE breaker for that circuit failed to trip. I touch the circuit breaker and it felt hot. I manually shut the breaker off. A few hours later, I opened the service panel and the 12 gauge wire was completely burned. The 15 amp breaker had a hole burned on both sides. ... Also, I had to replace the breaker above and below it, because of burned damage. I am planning to replace the service panel to avoid a fire waiting to happen. ..."

35. EMail 3/19/99

" ... The 1974 house we moved into last July had this box. We recently had it replaced and found the breaker to the dryer fried in just the way described. Our electrician was astonished. Two others we had bids from dismissed our concerns with contempt. ..."

36. EMail 2/8/97

" ... There is a Federal Pacific main/distribution panel on the exterior and a Federal Pacific subpanel in the garage. The garage subpanel failed, either with a 240v breaker or at the connection to the bus bars. This caused a direct short (enough that when we energized it the service drop wires to the house bounced several FEET in the air from the suddenly induced magnetic fields). The FPE breaker feeding this subpanel did not trip, even under this direct short circuit condition. All it did was make a violent buzzing/clicking sound. So we had a multiple FPE failure. ..."

37. EMail 8/15/97

"In all my years as an electrician, since 1978, I have never witnessed anything so unreliable. I've seen 20A single pole breakers with dead shorts that just sat and buzzed and stank, but they did not trip. ... "

38. EMail 11/8/98

" ... My home was equipped with Federal breakers and on the morning of October 24th of this year they nearly caused a serious loss ... Life! The circuit that was supposedly "protected" failed to trip causing a fire in my sons bedroom and had he not awakened because of the heat and alerted the household to the fire, we surely would not be here today. ... "

39. EMail 3/25/98

"Dan, ran into a FP "stab-lok" yesterday. House built in mid 1960's, evidence of scorching at the main breakers behind the dead front panel. ..."

40. EMail 5/13/98

" ... An inspector I helped train in the Reading PA area was changing a door frame in his basement. With the jamb removed he gazed into the wall cavity and was dumbfounded when he observed that the wiring within the wall cavity was devoid of any insulation. It had all burned away. He called me to discuss this. My first question was what type of panel did he have? Federal Pacific Stablocks. The fried circuits were for his basement shop where he had always been amazed that he could run so many tools simultaneously and never cause the breakers to trip. ... "

41. EMail 8/4/98

" ... my wife was home doing the laundry, when all of a sudden the dryer was smoking profusely. She immediately pulled the plug and called me. I had her check the circuit breaker and sure enough, it was not tripped. The dryer motor was completely burned out. ... "

42. EMail 2/4/03

" ... I recently installed a ceiling fan and accidentally shorted the circuit, and no breaker kicked. ... "

43. EMail 6/18/98 (Towson University)

" ... We have been increasingly concerned over the past 5 years regarding the FPE breakers as during maintenance shutdowns and testing we found a number of them unable to open and at least half did not pass the most basic of tests.

On June 13, 1998 , we had a major failure in one of the 50 amp breakers causing a fire in our University Union building doing several thousand dollars worth of damage, fortunately no one was injured. Our failure occurred when the third leg of the switch failed to open and welded the contacts shut, the secondary breaker failed to open as well and the problem went straight to the primary.

Upon testing prior to restart of the system, we found that over half of the 18 breakers and switches in the panel would not pass.

We are in the process of removing all of the Federal Pacific breakers in our buildings as quickly as we can."

44. EMail 8/3/04

" ... a couple of months ago, my commercial field underwriter mentioned the problems with FPE equipment and, since my residence had been updated with a 200 amp FPE system in 1079, I thought perhaps I should have an electrician check things out.

The findings were identical to what you indicated in your article including but not limited to a "fried" 100amp main breaker in the sub-feed panel. ... It's just a shame the general public is not more aware of this very serious potential problem."

45. EMail 4/1/04

"Last week I was performing a service call and I tried to trip out a 1 pole, 15 Amp FPE circuit breaker at the receptacle side so that I could easily locate said circuit in the panel.

This is the honest to goodness truth, I COULD NOT trip out the circuit. ..."

46. EMail 3/8/04

" ... I accidently shorted the hot wire to the neutral and the wires welded themselves together, momentarily and the insulation on the wires actually flamed up! I couldn't believe the breaker didn't trip. ..."

47. EMail 3/8/04

"I am a homeowner who was looking for a replacement breaker for my panel and came across your information concerning the Federal Pacific double pole breakers. Approximately a year ago I had a 30 amp double pole that had actually been on fire enough to have charred the plastic. This was a breaker for my clothes dryer. ..."

48. EMail 3/12/03

"Recently there was a minor electrical fire in my house. ... The equipment is from Federal Pacific."

49. EMail 2/13/06

" ... and one of the Stab-Loc connectors had been previously arcing and had melted. ..."

50. EMail 5/10/97

" ... I do have one FPE tale to tell: A few years ago I was working on an old split bus panel. A 2 pole breaker was open circuited. There being no main in a split bus I began to pry out the offending breaker. To my horror I saw, too late, that the breaker had burned out leaving nothing but charred bakelite ... "

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Hal Stratton, Chairman
U.S. Consumer Product Safety Commission
Washington, DC 20207-0001

March 18, 2004

Subject: Misuse of a CPSC press release regarding FPE circuit breakers and panels.

Dear Chairman Stratton:

A CPSC press release regarding Federal Pacific Electric (FPE) circuit breakers has been used in a manner contrary to the interest of consumer safety. I am requesting that the Commission issue a clarification or a revised press release on the subject. Enclosed, as supporting information for this request, are a copy of the 1983 CPSC press release, a copy of an up-to-date report that summarizes recent testing and related information, and a copy of an article from IAEI News (1999). Additional information is available.

CPSC tested certain FPE circuit breakers in the 1980 time frame and found that a substantial percentage failed the standard tests. Many of the failing breakers jammed, becoming totally unable to trip at any level of over-current or short circuit condition. While the manufacturer did not contradict the findings as to the defective circuit breakers, they refused to initiate a voluntary recall, claiming that there was no serious hazard due to the faulty breakers. Faced with a limited budget, an uncooperative manufacturer, the prospect of a lengthy court battle over the question of "hazard", and a probable challenge to CPSC's jurisdiction over the product, the Commission closed its project on FPE circuit breakers. A press release to that effect was issued March 3, 1983.

The CPSC press release did not fully describe the nature of the failures that the tests had revealed, or the high probability of failure. The problem of mechanical jamming that CPSC had uncovered was not mentioned at all. The press release was ambiguous as to whether or not there is a safety risk to people who depend on these breakers for electrical fire safety in their homes.

In 1999, IAEA News, the magazine of the International Association of Electrical Inspectors, published an article which suggests that the Commission's closing of the project and their press release support the conclusion that there is no safety problem associated with the FPE circuit breakers. The article was written by a former FPE manager. As a result of the publication of this article, homeowners and prospective home buyers are being told by well-meaning electrical inspectors that FPE breakers are OK, and that CPSC found no problem with them. This is seriously - and dangerously - incorrect.

Most recently, additional test results on FPE residential circuit breakers demonstrate that the defective performance extends across a broader range of their product line than was tested by CPSC. A summary of that testing is contained in the enclosed report. In the interest of public safety, I believe that it is important for CPSC to issue a new statement that takes the ambiguity out of its original press release and gives the public a clear picture of the defects found in their testing.

Yours truly

Jesse Aronstein, Ph.D., P.E.

SUPERIOR COURT OF NEW JERSEY

CHAMBERS OF
BRYAN D. BARRUTO
JUDGE



MIDDLESEX COUNTY COURT HOUSE
P.O. BOX 984
NEW BRUNSWICK, NEW JERSEY 08903 - 1864

MEMORANDUM OF DECISION ON MOTION
Pursuant to Rule 1:6-2(f)

TO: Jeffrey L. Chase, Esq.
James Crawford Orr, Esq.
Gerald A. Liloia, Esq.

RE: Yacout v. Federal Pacific, et. al.
MD-1-2904-97

NATURE OF MOTION: Plaintiffs' Motion for Summary Judgment,
Defendant Federal Pacific's Motion for
Summary Judgment, and Defendant Reliance
Electric Company's Motion for Summary
Judgment

Having carefully reviewed the moving papers and any response filed, I have made the following findings of fact and conclusions of law in support of my determination:

Plaintiffs' motion for summary judgment is granted as to the issue of whether FPE violated the Consumer Fraud Act. Plaintiffs' motion for summary judgment is denied on the issue of whether Reliance violated the Consumer Fraud Act. FPE's motion for summary judgment on the statute of limitations issue is denied. Reliance's motion for summary judgment as to the issues of successor liability and the statute of limitations is denied.

Plaintiff is entitled to summary judgment on the issue of whether Defendant FPE violated the Consumer Fraud Act. The Consumer Fraud Act provides in part:

(t)he act, use or employment by any person of any unconscionable commercial practice, deception, fraud, false pretense, false promise, misrepresentation, or the knowing, concealment, suppression, or omission of any material fact with intent that others rely upon such concealment, suppression or omission, in connection with the sale or advertisement of any merchandise or real estate, or with the subsequent performance of such person as

aforesaid, whether or not any person has in fact been misled, deceived or damaged thereby, is declared to be an unlawful practice . . .

N.J.S.A. 56:8-2.

Defendant FPE knowingly and purposefully distributed circuit breakers which were not tested to meet UL standards as indicated on their label. This constitutes an unlawful practice proscribed by the Act. Accordingly, Plaintiff is entitled to summary judgment on this issue.

Plaintiff is also entitled to summary judgment as to Defendant FPE on the issue of the imposition of treble damages. Defendant FPE's mislabeling of the circuit breakers constitutes an affirmative representation and therefore, Plaintiffs are entitled to treble damages, regardless of Defendant FPE's intention. Gennari v. Weichert Co. Realtors, 148 N.J. 582, 605 (1997). This court notes that Plaintiffs' "ascertainable loss" is the cost of replacement of the circuit breakers. Imposition of treble damages upon Defendant Reliance is necessarily contingent upon the issue of whether or not Reliance has successor liability. Since this court has determined the issue of successor liability to be one of fact (see infra), the resolution of this issue must await a full hearing.

The issue of whether or not Defendant Reliance has successor liability is a fact issue. The general rule in New Jersey is that the purchaser of stock is not liable as the successor to the company whose stock was acquired. Dep't of Transportation v. PSC Resources, Inc., 175 N.J. Super. 447, 453 (Law. Div. 1980). However, there are fact issues as to whether or not Reliance acquired FPE's assets in addition to the stock. Furthermore, even if Reliance did not acquire FPE's assets, under New Jersey law, a corporate veil can be pierced, and liability imposed upon a corporate parent for the acts of its subsidiary, where the parent so dominated the subsidiary that it had no separate existence and the parent used the corporate form to perpetrate a fraud. See Karo Marketing Corp. v. Paydrome America, 331 N.J. Super. 430, 442 (App. Div. 2000). This inquiry is a fact sensitive one that must be resolved by the finder of fact.

The issue of whether Reliance's own conduct violated the Consumer Fraud Act is necessarily contingent upon whether or not Reliance has successor liability. If Reliance is determined to have successor liability, then Reliance's own conduct may be used to support a claim. The Act provides in relevant part:

[t]he act, use or employment by any person of any unconscionable commercial practice, deception, fraud, false pretense, false promise, misrepresentation, or the knowing, concealment, suppression, or omission of any material fact with intent that

others rely upon such concealment, suppression or omission, in connection with the sale or advertisement of any merchandise or real estate, or with the subsequent performance of such person as aforesaid, whether or not any person has in fact been misled, deceived or damaged thereby, is declared to be an unlawful practice . . .

N.J.S.A. 56:9-2 (emphasis added).

The statute indicates that the subsequent performance language only applies to the person making the original representations to the consumer. See Annunziata v. Miller, 241 N.J. Super. 275, (Ch. Div. 1990) ("subsequent performance" language refers to an affirmative representation of a future act by the promisor); See also D'Erocola Sales, 206 N.J. Super, at 25-31 (finding that "subsequent performance" language applies to actions of the original seller of product who subsequently disavows a warranty given in conjunction with original sale). However, if Reliance is determined to have successor liability, then Reliance stands in the shoes of FPE in that Reliance and FPE will be considered one and the same. Thus, while the FPE circuit breakers were advertised, warranted and sold by FPE, if Reliance is determined to have successor liability, then Reliance is the person making the original misrepresentations to the consumers. Accordingly, Reliance would be "such person" within the meaning of the Act. On the other hand, if Reliance is not determined to have successor liability, then Reliance is not "such person" within the meaning of the act. Therefore, this issue must await a full hearing on the issue of successor liability.

Finally, if successor liability is found to exist, any act on the part of Reliance that implicates the Consumer Fraud Act would necessarily be considered continuous/ongoing conduct on the part of FPE/Reliance. Therefore any concealment on the part of Reliance regarding the fraudulent nature of the UL labels, would be considered continuous and thus, would impact upon Defendants' statute of limitations defense.

Defendants also seek summary judgment based on the statute of limitations. This relief is denied. A claim for a violation of the New Jersey Consumer Fraud Act must be brought within six years from the date on which the claim accrues. N.J.S.A. 2A:14-1; See Mirra v. Holland America Line, 331 N.J. Super. 86, 90 (App. Div. 2000). Plaintiffs complain that Defendants sold them circuit breakers with fraudulent UL labels. Thus, Plaintiffs' claims accrued when the circuit breakers were sold. Therefore, for some members of the Plaintiff class, the statute of limitations began running as early as 1965, well beyond the six year statute of limitations period. Nevertheless, the discovery rule can be applied to postpone the accrual of a claim when a plaintiff does not and cannot know the facts that constitute an actionable claim. Grunwald v. Bronkesh, 131 N.J. 483, 621 A.2d

459 (1993). As a result, a cause of action will accrue when the injured party discovers or by the exercise of reasonable diligence and intelligence, should have discovered, that he or she may have a basis for an actionable claim. Mancuso v. Neckles ex re, Neckles, 163 N.J. 26, 747 A.2d 255 (2000). Here, the Defendants actively and publicly addressed the issue of fraudulent labeling in the early 1980's via press releases, 49,000 notification letters, and national and local newspaper and magazine articles. Nevertheless, whether or not Defendants' widespread publicity of the matter from 1980 to 1983 forward was sufficient to put a reasonable person on notice that they may have a cause of action, is a fact issue. The burden of demonstrating that each plaintiff lacked such knowledge of a potential claim is placed on the plaintiff. Accordingly, A Lopez hearing must be held to determine whether the statute of limitations barred any of the plaintiffs claims. The statute of limitations issue will necessarily be impacted upon by the jury findings on Reliance's successor liability.

In light of the required Lopez hearings, the Plaintiff class may ultimately be dissolved. This Court notes that the class representatives do not even meet the class criteria, and therefore, cannot represent the class. Therefore, the issue of class certification may be revisited due to the statute of limitations issues which may destroy the commonality prong of class certification.

Defendants Federal Pacific Electric and Reliance's motions for summary judgment are granted as to any claims based on sales of the circuit breakers that occurred before 1971, as well as any claim asserted by subsequent purchasers of homes or buildings in which FPE circuit breakers were installed part and denied in part.

Defendants are entitled to summary judgment on any claims based on sales of the circuit breakers that occurred before 1971. Prior to 1971, the New Jersey Consumer Fraud Act did not confer a private right of action and the Attorney General had the sole authority to enforce the Act. Skear v. EMK Motors, Inc, 187 N.J. Super. 465, 472 (App. Div. 1982); D'Ercole Sales, Inc. v. Fruehauf Corp., 206 N.J. Super. 11, 24 (App. Div 1985). The Act was amended effective June 29, 1971 to permit private plaintiffs to assert claims. N.J.S.A. 56:8-19. Thus, any plaintiff whose claim is based on a sale of the circuit breakers that occurred before 1971, may not assert a claim under the Act, because the statute did not permit such a claim at the time the conduct occurred.

Furthermore, Defendants are entitled to summary judgment on any claim asserted by subsequent purchasers of homes or buildings in which FPE circuit breakers were installed. These plaintiffs

lack standing to assert a claim under the Consumer Fraud Act. In Chattin v. Cape May Greene, 216 N.J. Super. 618 (App. Div.), cert. denied, 107 N.J. 148 (1987), the Appellate Division held that subsequent purchasers of homes containing allegedly defective doors and windows could not bring claims under the Consumer Fraud Act because they were not the people to whom the misrepresentations had been made. Absent an assignment from the original purchaser, subsequent purchasers of homes and buildings that contained the FPE circuit breakers cannot bring a claim under the Consumer Fraud Act because they were not the people to whom the misrepresentations were made. As a result, Defendants are entitled to summary judgment on these claims.

The Defendants also seek summary judgment for post 1976 claims. This relief is denied. The case of Katz v. Schacter, 251 N.J. Super. 467 (App. Div. 1991), wherein the Appellate Division held that misrepresentations made by a real estate broker prior to a 1976 amendment to include real estate transactions, were not actionable when the misrepresentation was discovered after 1976, is not applicable to this case. The matter at hand does not deal with the misrepresentations of real estate brokers and therefore, Katz is not relevant to this matter.

In light of the foregoing discussion, Plaintiffs' motion for summary judgment is granted as to the issue of whether FPE violated the Consumer Fraud Act. Plaintiffs' motion for summary judgment is denied as to the issue of whether Reliance violated the Consumer Fraud Act. FPE's motion for summary judgment on the statute of limitations issue is denied. Reliance's motion for summary judgment on the issues of successor liability and the statute of limitations is denied. Defendants Federal Pacific Electric and Reliance's motions for summary judgment are granted as to any claims based on sales of the circuit breakers that occurred before 1971, as well as any claim asserted by subsequent purchasers of homes or buildings in which FPE circuit breakers were installed part and denied in part.

DATE OF DECISION: 8/15/02


BRYAN D. GARRUTO, J.S.C.

Order is attached

Proposed form of Order and envelope to be submitted pursuant to R.4:42-1 by James Crawford Orr.

Reliance Electric Company, et al., Appellants v. Consumer Product Safety Commission, et al.

No. 89-5396

UNITED STATES COURT OF APPEALS FOR THE DISTRICT OF COLUMBIA CIRCUIT

288 U.S. App. D.C. 30; 924 F.2d 274; 1991 U.S. App. LEXIS 803

November 2, 1990, Argued
January 22, 1991, Decided

PRIOR HISTORY:

[**1] Appeal from the United States District Court for the District of Columbia (Civ. No. 87-1478).

DISPOSITION: Affirmed in Part and Vacated and Remanded in Part.

CASE SUMMARY

PROCEDURAL POSTURE: Appellant manufacturers filed an action against appellee Consumer Product Safety Commission (commission), under the Consumer Product Safety Act, after the commission decided to disclose information under the Freedom of Information Act (FOIA), 5 U.S.C.S. § 552. Both parties sought summary judgment. The United States District Court for the District of Columbia granted summary judgment for the commission. The manufacturers sought review.

OVERVIEW: The commission investigated the manufacturers' product and determined that it did not pose a serious risk of injury to consumers. The manufacturers objected to the commission's disclosure of information under FOIA, claiming that some of the documents should not be released because they contained trade secrets or data that was submitted to the commission in confidence. In its response, the commission mostly agreed with the manufacturers; however, it decided to disclose a portion of the requested information. The commission indicated that, in order to assure fairness, it would provide the FOIA recipients with a copy of its finding that the product posed no serious risk. In granting summary judgment for the commission, the district court refused to consider the disclosure de novo and sustained the commission's decision. In vacating the judgment in part, the court held that the district court erred in sustaining the commission's decision, as the commission did not explain the steps that it took to verify the accuracy of the information, as required under the Consumer Product Safety Act. In affirming the judgment in part, the court found that de novo review was properly refused.

OUTCOME: The court affirmed the district court's decision to refuse de novo review of the commission's decision to release the information under FOIA. The court vacated the district court's decision to affirm the commission's findings, directing the district court to remand the case to the commission for an explanation of why the manufacturers' accuracy objections were not well-taken.

UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

FILED ✓

RELIANCE ELECTRIC COMPANY,
et al.,

SEP 19 1989

CLERK, U.S. DISTRICT COURT,
DISTRICT OF COLUMBIA

Plaintiffs,

v.

CA No. 87-1478 (HHG)

CONSUMER PRODUCT SAFETY
COMMISSION, et al.,

Defendants.

MEMORANDUM AND ORDER

In this "reverse FOIA" action, the Reliance Electric Company seeks to prevent the disclosure of information related to a Consumer Product Safety Commission (Commission) investigation of circuit breakers manufactured by Reliance's former subsidiary, Federal Pacific Electric Company (FPE).¹ The Commission received Freedom of Information Act requests for various documents describing and analyzing test results, and the raw data underlying those results, that were generated during the investigation. The requesters are primarily plaintiffs' attorneys involved in product liability litigation concerning the circuit breakers.

Pursuant to section 6(b)(1) of the Consumer Product Safety Act (Act), 15 U.S.C. § 2055(b)(1), the Commission

¹ FPE, formerly a subsidiary of Reliance, is now a unit of the other plaintiff, Challenger Electric Equipment Corporation.

These various reports and analyses were prepared both by Commission engineers and staff and outside organizations, such as the National Bureau of Standards. Reliance argues that release of these documents would be arbitrary and capricious and a violation of the agency's own regulations in two overriding respects. First, it contends that the test results contained in the documents have been refuted by later tests conducted by Reliance.

Next, Reliance argues that the Commission itself rejected the findings of these earlier tests when it announced in a press release that it was ending its investigation.⁵

calibration tests evaluating the performance of several FPE circuit breaker models which includes engineering laboratory reports, raw data and explanatory memoranda, *id.* at 5-17 through 5-131, 5-137 to 5-288, 7-59 through 7-62, and 7-150 through 7-153; a National Bureau of Standards (NBS) mathematical model designed to simulate the way electric cables overheat in insulated walls, 5-132 to 5-136, 5-289 to 5-305; an interim report prepared for the Commission by the Wright-Malta Corporation concerning the rate at which two-pole circuit breakers failed Underwriter Laboratory (UL) calibration tests, 7-15 to 7-22; a draft report describing NBS tests to determine whether FPE two-pole 15 amp circuit breakers present a fire hazard when wired to circuits in test walls, 7-53 through 7-62; certain "fire ignition scenarios" developed by the Commission's Department of Engineering, 7-170 through 7-234; a statistical risk analysis, 7-13; and a handwritten staff draft of investigatory options, 7-159 to 7-169.

⁵ The preamble to the Commission's regulations states that it will generally not disclose information refuted by other information in its files or information rejected by the Commission itself. 48 Fed. Reg. 57415.

The Court rejects both of these contentions. A review of the Commission's press release shows that the agency did not reject its earlier findings. Rather, the Commission there merely stated that it had insufficient data to determine one way or the other whether Reliance's subsequent tests demonstrated the safety of the circuit breakers and that the agency did not have the resources to make such a finding.⁶

Reliance's other argument concerning accuracy -- that Reliance submitted test data refuting the Commission's earlier tests -- raises a closer question. As noted, Reliance submitted test data that in various ways purports to show that under more "realistic" testing conditions, the

⁶ The press release stated, "the data currently available to the Commission does [sic] not establish that the circuit breakers present serious risk of injury to consumers." It further stated that while the Commission was "concerned about the failure of these FPE breakers to meet [Underwriters Laboratories] calibration requirements, the Commission is unable at this time to link these failures to the development of a hazardous situation." The press release also described Reliance's position, which was that its testing data, submitted to the Commission, showed that its breakers did not create a hazard in the household environment, that the breakers would trip reliably at most overload levels unless operated in a repetitive, abusive manner, and that at those few overload levels where FPE breakers may fail to trip under realistic conditions, currents will be too low to create a fire hazard. The press release concluded by stating that the Commission had "insufficient data to accept or refute Reliance's position" and that given the agency's limited budgetary resources, it would not pursue the investigation further.

Exxon buys a scandal along with a company

Exxon Corp.'s \$1.2 billion purchase of Cleveland's Reliance Electric Co. last year was designed to give Exxon a base for developing a new energy-saving technology to improve the efficiency of electric motors. What the purchase seems to have bought as well, however, is custody over a burgeoning scandal that involves the charge that defective electrical equipment may have been installed in perhaps 10% of all homes built or renovated over the past decade or more.

The charge, startlingly enough, is being made by Reliance itself. In a little-noticed suit filed in U. S. District Court in Cleveland on June 26, the company accused its own subsidiary, Federal Pacific Electric Co., of having employed "materially deceptive and improper manufacturing, testing, and certification practices" in the production of one of the nation's most widely used lines of circuit breakers. The suit asked the court either

to rescind Reliance's March, 1979, purchase of Federal Pacific from uv Industries Inc. or to order uv to repay the \$345 million purchase price, plus damages.

A week later Reliance notified the Consumer Product Safety Commission (CPSC) that in-house testing of its Stab-Lok line of two-pole, 220-volt circuit breakers indicates that some are prone to failure after repeated use "at relatively low over-current conditions." Reliance says it has not yet determined whether there is a significant hazard in using the device, and there have been few public complaints against it. But the company has stopped shipment of the product and requested distributors to halt further sales until tests are completed. Other unspecified problems also have been identified on three-pole Stab-Lok and molded-case circuit breakers. Says Reliance President B. Charles Ames: "The circuit breaker business at Federal Pacific has virtually ground to a halt."

Who is responsible? That may be only the beginning. The items involved cost only \$16.60 apiece. But if the CPSC determines that they should be recalled, the outlay could be enormous since it would require the services of professional electricians. The cost per house could be as much as \$100, trade sources say.

The underlying question in the Cleveland case is who bears the responsibility for this substantial potential liability. The principal defendant is uv Industries, which, after its sale of Federal Pacific, profitably liquidated itself last year over the strong objections of its major stockholder, Sharon Steel Corp. Following the liquidation, Sharon, controlled by Miami financier Victor Posner, bought the remaining assets—and presumably the liabilities—of uv for \$518 million in cash and debentures. Distribution of the proceeds was scheduled to take place on July 21, but Reliance is asking for the imposition of a "constructive trust" to prevent "dissipation" of uv's assets. Aside from Sharon's 22% interest in uv's liquidating trust, most of the company's shares are now in the hands of Wall Street arbitrageurs.

Procedural delays. uv Chairman Martin Horwitz strongly denies that he knew anything about Federal Pacific's alleged problems and says the case will be contested. A hearing on a motion to dismiss or transfer the case to New York was set for July 11, probably only the first of a long series of procedural maneuvering.

The Reliance complaint is vague in its allegations of what went on at Federal Pacific. Reliance charges that the company's financial success "was due substantially, if not entirely, to a pattern of materially deceptive and improper practices in the manufacture, testing, and sale" of its circuit breakers. Specifically,

the suit claims Federal Pacific used such practices to obtain certification for its equipment from Underwriters Laboratories (UL), whose label is usually required for a product to meet local electrical codes. The CPSC has not yet been told details of the alleged deceptive practices, but a commission staff engineer who

Exxon's new company is suing its own subsidiary for 'deceptive' practices

once worked for UL suggests that the practices may have involved rigging equipment at Federal Pacific's own test facilities in a way that would mislead UL's on-site inspectors.

UL professes surprise at the charge that its inspectors were somehow duped, and its general counsel, David Hoffman, insists that "there is no evidence to support the conclusion that products out in the field pose a substantial hazard to the user." Hoffman further says that because relationships between UL and its client, Federal Pacific, are "proprietary," he cannot even publicly confirm Reliance's open statements that its subsidiary's circuit breaker products were delisted after failing various tests.

The delisting occurred after UL changed testing procedures for circuit breakers following CPSC concern that the product might pose fire hazards. The commission last year asked the National Bureau of Standards to design new test equipment to determine performance under actual conditions in the home. The Reliance case could thus turn into an inquiry affecting the entire \$600 million circuit breaker industry.

It was apparently UL's action last fall in delisting nearly 400 circuit breaker labels that started the whole legal process. Reliance says it was originally told that such delisting was routine. But sales had slid so much by early May that it was obvious that the real problem was not the failure of circuit breakers to gain UL approval but "deception" in obtaining certification over a long period of years.

Reliance has suspended with pay Federal Pacific President Harry E. Knudson Jr. and four other key executives. "The men are long-term employees and their integrity is not being called into question," Reliance said in a statement distributed on July 1 to all Federal Pacific employees. Contacted at his home in Watchung, N. J., Knudson refused comment.

PRICE CHANGE MONITOR

TO: BIRL, STEEL & *Prof*

Caden-Hammer, ME-wires, increased prices by an average of 9% on factory-assembled panelboards, switchgear, switchboards and busway effective April 23.

UL TEMPORARILY SUSPENDS LISTING OF SOME FPE BREAKERS; CORRECTION SHORTLY

When certain circuit breakers in the Federal Pacific Electric line, including 1-, 2- and 3-pole breakers in NA and NB types, were tested by Underwriters Laboratories under standard control procedures earlier this year, they were found to be out of conformance with the specifications of their original UL listing.

UL, with cooperation from FPE, delisted the products, and production was halted. When this occurs, the manufacturer must correct the difficulty before permitting relisting and re-shipment. A UL source told EM that this is something that happens from time to time with other manufacturers also.

Sources at Federal Pacific told EM last week that many of the problems have been corrected and production has resumed on a number of relisted circuit breakers. Full production of all delisted breakers is expected to be underway shortly. Orders for all of the items in the FPE circuit breaker line are still being filled from stocks in regional warehouses. These are not affected by the delisting, and stocks are being augmented as new production moves into distribution channels.

Aids from obviously missing backlogs, the delisting brought on erroneous rumors that caused concern among installers as to whether there could be any question involved in using the UL-listed circuit breaker products now in FPE regional warehouses. UL says there are none. A source there added that UL-listed breakers have been consistently tested at the FPE factory and can be used with full assurance of UL compliance. It was also stated that UL monitoring of the circuit breaker line in no way reflects on other FPE UL-listed products.

EM was told by others that this was an instance where frequent UL monitoring of listed products promptly uncovered an unexpected technical irregularity. The electrical industry safeguard system worked, as it has done before in similar situations, sources noted. All breaker types leaving the factory have to be in full compliance with testing standards.

-Jim Morris

CONTINENTAL COPPER BRINGS SUIT AGAINST GROUP THAT HAS ACQUIRED 9% OF ITS STOCK

A complicated law suit has been brought by Continental Copper & Steel Industries, Cranford, N.J., parent company of Hunfield Wire & Cable, against an organization and individuals it accuses of acquiring about 9% of its stock on the open market last year under circumstances that it considers illegal. The suit, in a New York federal district court, aims to block further acquisition of Continental stock by the group and prevent it from voting the stock it already owns.

The defendants in the suit are R.W. & K. Copper, Inc.,

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New York, a private investment holding company, and four individuals: Herman Rogge, Martin Wright, Aaron Katz and Leonard Katz. Rogge and Wright have been described as owners of R.W. & K. Copper. The Katz brothers are said to be partners in an investment in Lybbe Wire, Inc., Cranford, N.J., a producer of bare copper wire, and Rogge and Wright are also said to have an investment in Lybbe, according to a Continental attorney.

The complaint alleges that required filings with the SEC were inadequate in their description of the "identity, background, sources of funds and interests" of the purchasers.

There is an additional allegation that, because of the relationship of certain defendants with Lybbe Wire, considered a competitor of Continental in the complaint, that there is also a violation of antitrust laws.

PRODUCERS SUPPORT LIGHTING DISTRIBUTORS WITH STRONG SPEAKER SLATE IN SAN DIEGO

More than 65 regular and associate members attended the second annual meeting of the National Association of Independent Lighting Distributors April 7-10 at the Hotel del Coronado in San Diego. The turnout of active associate members representing nine manufacturers of lamps, ballasts and other lighting products, was a substantial plus, according to James F. Busch, executive director. The headquarters of the association (NALID) is in St. Louis, where Busch is also an electrical manufacturer's representative.

About 18 representatives of lighting manufacturers were present and many gave talks. Clay Stephens, of GTE Sylvania, evaluated the position of the lighting distributor in the marketing channels of the electrical industry and stressed his importance in providing service to small and medium-sized purchasers of lamps and lighting products who may not find it convenient to deal with the larger full-line electrical distributor. Roy Jones, a West Coast Westinghouse lighting engineer, spoke on planning commercial and industrial lighting layouts with particular attention to retrofit applications. Bill Artard and Bob Graham, both of North American Philips Lighting Corp., spoke on sales strategy and techniques for the lighting distributor.

Dave Jankin, of Pacific Lamp Wholesale, Portland, Ore., and Ken Winkle, of Lite-Tronics, Inc., Pittsburgh, a lamp manufacturer, discussed proper applications for well-designed extended service lamps. Jules Schwartz, of Universal Manufacturing Corp. (ballasts), Paterson, N.J., and Mike Frey, of Moore, Lambert Industries, Los Angeles, a fixture producer, spoke on energy-saving ballasts and conservation through specially designed lighting fixtures. There was also a talk on credit matters by Al Meyer of Dan and Bradburne. As reported in a previous EM story (Feb. 5, p. 6), Steve Spahr, a St. Louis computer specialist, provided information about how distributors might make use of small computers.

The executive committee elected for 1980 is as follows: Jack Vils, Vils Lighting Supply, St. Louis, chairman; Tom Coore, Coore Lighting Supply, Indianapolis; Phil Ransiedel, Provident Lighting Supply, Carrollton, Ky.; Jim Hart, Hart Lighting Supply, Phoenix; and Ed Sang, AEM Electric Co., Louisville.

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