



Back to Tom —

O.K. — set up a meeting as you suggest, contingent upon Duane's availability — you can check my schedule with Bev.

Ernie  
8-8-78



inter-office correspondence

8/78 1978  
HOME SMK DET.  
APPENDIX

date: August 8, 1978

to: Ernie Lovelady

from: Tom Bellinghausen

subject: Statitrol Battery Monitoring Patent  
Versus NFPA "Household Fire Warning  
Equipment", Standard 74-1975

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Ernie, I just received the attached committee report from Duane and would like to give you some information on the background of this issue. Actually, if it didn't have such serious implications, the whole business would be rather humorous.

First, the NFPA Standard 74 defines how a smoke detector must operate in order to meet the requirements of this Standard. Once this Standard has been approved, it then becomes the basis for the various testing requirements for smoke detectors at Underwriters Laboratories in both the United States and Canada. When U.L. gives a listing to a battery powered smoke detector, they are actually certifying that it meets the NFPA Standard 74.

A few years ago, when we were developing the Model 800 detector, Paul Staby designed a battery monitoring circuit that actually monitored the internal and external resistance of the batteries since this appeared to be the most foolproof way to generate the low battery warning signal. A patent was applied for on this particular circuit and was granted. The patent attorneys have indicated that this is a very strong patent that applies not only to monitoring of batteries for smoke detectors, but for any other application where it's necessary to know the current delivery capacity of a battery or a series of batteries.

One of the reasons that the Model 800A is expensive is due to the fact that it requires a number of components to do this job. Therefore, when we designed the Model 805, this feature was not incorporated.

However, in 1976 Pyrotronics introduced their battery model smoke detector and utilized this same concept except that they did not use a LED to give a visual indication that the circuit was being checked. They have made a big marketing effort to play up this feature, even to the point of insisting to Underwriters Laboratories that they shouldn't approve any device unless this feature was a part of the device. They make the claim that anyone could add this feature to their battery powered detectors and the cost would not be greater than 25¢.

What has happened is as follows:

Pyrotronics has officially requested that the Committee issue a formal interpretation of Paragraph 2-1.3 of NFPA Standard 74, and asked the Committee to publish a formal interpretation of the question. (The two



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questions are shown on the attached papers from NFPA.) The NFPA Committee was formally balloted and have said that it was the intent of the Committee, at the time that this Standard was written, that a battery powered detector must monitor both internal and external battery resistance and give off an audible trouble signal when the resistance might prevent the battery from delivering sufficient power for operation of the smoke detector.

You will note that Pete Dubivsky, who represents Underwriters Laboratories on this Committee, voted yes to question #1 dealing with internal resistance, but voted no on the question of external resistance.

Now that this formal interpretation has been made, U.L.I. and U.L.C. will be required to change their U.L. standards and require future detectors to incorporate this battery monitoring feature. Unless the Committee can be made to reverse itself, we can expect to incorporate this monitoring feature in future detectors sometime within the next twelve to twenty-four months.

Possible Actions:

- 1) I believe that we should officially notify Pyrotronics of their possible infringement on our patent, as both Paul Staby and I recommended to Emerson a year ago. To my knowledge, we have not formally advised Pyrotronics.
- 2) It would appear that everyone in the industry producing battery powered detectors (ionization and photoelectric) will be forced to incorporate this battery resistance circuit in the future if they expect to have U.L. listing. This includes Statitrol.
- 3) We might want to consider advising the Committee Chairman that we do hold a patent on this technique and give them a chance to reverse themselves on this formal interpretation. However, it's my feeling that the "die has been cast" with the Committee going on record as saying it was the original intent that this type of monitoring was mandatory. We know that this is really not true, since there was no way to do this until discovered by Paul Staby. However, the Committee has certainly "put their foot in their mouth" -- officially.

I would recommend that for background, you, Duane Pearsall, Paul Staby and I sit down and discuss this immediately and decide what action we might want to take. This could certainly influence our future development of a replacement for the Model 805, as well as the third generation Amway detector. I would suggest that the Emerson Patent Department jump into this quickly and make a real determination on the validity of our patent.



Tom

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