MAILBAG

SILICON CHIP,
PO Box 139,
Collaroy Beach 2097.

Caution on the Party Light

I recently purchased the May edition of SILICON CHIP and on the whole found your magazine very readable. However, I was rather alarmed by your "Party Light" project and felt compelled to write.

Whilst the idea and project are fine, an essential warning to your readers has been omitted. High intensity flashes at a slow rate are exceedingly hazardous to people suffering from epilepsy; flashing lights can trigger epileptic fits. This is a serious situation indeed and one which should have been mentioned.

S. Verlander
Wanneroo, WA

We checked the contents of your letter with a medical specialist who has confirmed that flashing lights can trigger seizures in some epilepsy sufferers. Indeed, even the innocuous effect of sunlight flashing through trees as a car drives along a country road has been known to bring on an epileptic attack.

However, there are flashing lights everywhere; beacons, advertising signs, car traffic indicators and so on. How do these unfortunate sufferers avoid all these instances? For the record, the Discolight featured in this issue would present a similar hazard.

Further questions on the MEN system

In the April issue of SILICON CHIP, we published a letter from the NSW Department of Energy which commented on our article entitled "Your House Wiring Could Kill You". As noted there, we were not happy with that letter and wrote to the Secretary of the Department as follows:

Dear Sir,

I refer to your letter on the subject of our article entitled, "Your House Wiring Could Kill You". As such, the comments in the letter are patronising without really addressing the subject raised by the article. I have asked your Mr A. McCarroll if he would like to add anything to your letter, since we intend to publish it, but he declined.

I cannot understand how you can refuse to admit, as it seems in your point 4, that loss of earth and neutral due to corrosion is not a normal course of events. If metals are dissimilar, they must corrode.

Nor can I understand the general attitude of complacency about the safety of the MEN system. Your Mr McCarroll seems to take the attitude that since this occurence of lost neutral and earth connections has not been commonly reported (to his knowledge), it is not a problem. Correspondence published in SILICON CHIP in the January and March issues indicates that the problem is real and one which officialdom has yet to acknowledge.

I would maintain that there are hundreds of thousands of MEN installations which have not been inspected for 20 years or more and which now must be getting to the point where they are becoming hazardous.

In view of the fact that all installations must become more hazardous with the passage of time, will you please respond to the following questions:

(1). Does your Department have a policy whereby County Councils are required or recommended to inspect consumers' neutral and earth connections on a regular basis?

(2). If there is no present policy on this topic, will your Department now develop such a policy?

(3). In view of the distinct possibility of a hazard developing with the MEN system, will your Department consider modifying the execution of the MEN system in domestic electrical installations?

Leo Simpson
Silicon Chip Publications

The Department's reply

I refer to the letter published in the April issue concerning the article entitled, "Your House Wiring Could Kill You"and your following letter to this Department. Prior to answering the three specific questions asked in your letter, some general comment on the safety of the MEN system of earthing is necessary.

The MEN wiring system is preferred by electricity supply authorities throughout Australia. It has a sound safety record with no recorded fatalities in NSW that can be solely attributed to the malfunction of the system. The satisfactory performance of the system can generally be attributed to its use of a minimum of two leakage/fault paths. In installations wired since 1976 the number of leakage/fault current paths has been increased to three by the addition of an earth electrode. Other systems of earthing do not offer such a simple but effective arrangement.

The MEN system is utilised with the knowledge that a problem of 'nuisance' shocks often detected as 'tingles' on taps and the like may occur if the neutral connection should break or develop a high resistance. The Department of Energy monitors the 'nuisance' shocks that are reported to and investigated by supply authorities. Experience has shown that the number and consequences of such shocks are relatively minor, and if compared to the number of installations connected to supply, it would be difficult to argue that the MEN system is not working satisfactorily.

It is important that persons who receive a minor shock recognise it as a warning of a possible hazard and report the instance to their local electrical county council for investigation and repair. Alternatively, the services of an electrical contractor could be engaged to rectify the problem.

On the issue of corrosion of connections due to dissimilarity of metals such as copper and aluminium, electricity supply authorities have developed work practices utilising corrosion inhibitors to overcome this problem within their reticulation systems. In regard to connections within the consumer's installation, it is pointed out that copper or copper compatible materials are practically universal. In any other case, the SAA Wiring Rules require that earthing conductors be protected from corrosion by means of suitable insulation or enclosure.

In respect to the specific questions asked by you, the following comment is offered:

(1). The Department of Energy does not currently have a policy which

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recommends or requires the states' 25 supply authorities to carry out routine inspection of the consumer's neutral and earth connections.

(2). There is no basis at this time for the development of a policy requiring routine inspections of the neutral/earth connections associated with the MEN system. It is further pointed out that domestic electrical installations are frequently extended or altered in order to accommodate additional electrical equipment. It is not uncommon for the neutral/earth connection to be effectively checked in such situations where the overhead service, meter or main earthing systems are affected.

(3). The 'nuisance shock' factor was known when the MEN system was first introduced into common use. The nuisance shocks reported to this Department are both low in shock hazard and incidence. Notwithstanding this experience, the changing environment has seen that the requirements for equipment associated with the earthing system have been modified in a number of ways since the adoption of the MEN system. These include the use of an earth electrode, the duplication and improved design of connectors used at the attachment of the aerial service to the dwelling, and the deprecation of aluminium as a conductor for consumers' wiring.

I trust this information will further clarify this matter.

N. C. Watson
Secretary
NSW Department of Energy.

Unfortunately, you still miss the point. The thrust of our November article was that old MEN installations are becoming hazardous with the passage of time. They do not have the benefit of the third electrode introduced since 1976.