COLUMN FOR NOVEMBER 9, 2003.
HEADLINE; FUSES AND BREAKERS

Q; *We were looking at an older home outside of Sterling Ontario and it has a fuse panel with, we are told, a 100 amp supply. It is a grey coloured box with two doors that says 100 amps on the sticker on the right door. There are five of us in the family and we were also told this would have to be replaced with a breaker panel. What is wrong with fuses and what would this cost to change over?*

A: There is a considerable amount of confusion presently about electrical systems, their size and what is proper and what is not proper. The majority of the confusion has been created by the Home Insurance Companies in Canada and coupled with our "addiction" to electricity these days has brought this issue near the top of the pile for home insurers. The first consideration is the size of your entrance supply. The box as you describe it is likely an Amalgamated Electric entrance panel. These were very common in the 60's and 70's and it is very likely that you do in fact have a 100 Amp entrance as it is called. While there is considerable talk about every home is required to have a 100 Amp entrance, in actual fact a home of just under 800 Sq Feet is permitted to have a 60 Amp entrance according to the electrical standards in Ontario. Provided your fuse panel is wired correctly, correct sizes of fuses and no "creative" wiring has been added to it there is nothing wrong with this panel.

The main issue that has caused the home insurers to take a tough stand on this electrical issue is the fact that anyone can change a fuse to a larger size, therefore circumventing the safety of the wire size and causing more amperage to flow thru the wire than is recommended. Unfortunately nearly all fuses ranging from 15 amps to 30-amp screw in style fuses will fit the same socket. This will cause overheating and possibly a fire in the wiring. With a breaker panel, the average homeowner is not familiar with changing a breaker and the wire size to breaker sizes are very specifically laid out in the electrical code. Hence this becomes a safer supply to the home branch circuits. The real reason that homeowners get frustrated with a breaker panel is actually not the panel, rather the lack of supply. A brand new home is commonly wired with a 100 Amp panel, the same as the reader has. Where the new home has the advantage is the access to this 100 Amp. Most new homes have a panel that is 24 branch circuits; some go up to 32 circuits. There are larger panels that go to 48 circuits, but they generally are wired with a 200 Amp supply. The majority of homes I see with a panel like the reader describes have anywhere from 8-14 branch circuits and herein lies the problem. In most cases a smaller sub-panel taken off one of the pull blocks in the fuse panel and a half-dozen new breakers with properly wired circuits through-out the home will alleviate the homeowners frustrations with their electrical system. The insurance companies are protecting themselves at the source by demanding a breaker panel, but they are not correcting the access to the supply in the home.

With five people in the family and considering the demands of a modern family with respect to electrical use our reader should consider a chat with a reputable electrician. He can get a feel for the use in the home, the amount of appliances you have and any other factors like a large home workshop that could draw on the present system. A minimum upgrade would be to a small sub-panel with 6 breakers and then whatever additional wiring is recommended. If you keep the fuse panel, take the time to go over the panel with your electrician and have him identify the correct fuse size for each circuit. One small tip here, you can buy a fuse called a time delay fuse. These are marketed under a number of names; Fusetron, Tritonic and Mini-Breaker are three common makes. What this fuse does is accept a short-term increase in the amperage and not blow immediately. Where this helps is when an appliance or an electric motor is turned on they draw their maximum for what is called start-up amperage, they do not always need the same amount of amperage to operate. These can reduce the amount of nuisance blowing that happens with a conventional fuse. A change such as this should not exceed 500.00 unless the access for the new wiring is difficult. Remember that fuses properly sized are not unsafe and

there are cases where breakers have “locked up” and caused overloading and the possibility of a fire. A fuse will not do this.

The next possibility is to change the panel to a breaker installation. This will not give you more supply but it will control the access and eliminate the fuse issue. Now you will have at minimum the access to 24 branch circuits and these can be added at any time. Some panels, Square D is one that actually makes a “cheater breaker” that will increase the capacity over the 24 circuits if needed. This changeover is commonly priced in the 6-900.00 range provided the entrance stack does not have to be replaced or moved. Now you can add whatever number of circuits and I have seen a panel change and the addition of a few new circuits run in the 1200-1500.00 range.

The issue of electrical supply, insurance companies and some “old wives tales” has clouded the real facts with respect to home systems. If in doubt, call a reputable electrician and discuss your needs with him. Most good electricians will not sell more than the customer really needs and if your electrician is a master, he can sign his own work and I find these licenses are generally the cream of the crop in this trade.

Are you considering a new home? A Professional Home Inspection by a Registered Home Inspector as licensed by the Ontario Home Inspectors Act is a wise part of your home buying plans. Go to www.oahi.com and click on the area you are moving too.

Cam Allen L.I.W. RHI is a former builder/contractor and now owns a Private Inspection Company. He can be reached at cam.allen@sympatico.ca.