



BEFORE THE 'POINT OF CONTROL', BEYOND THE 'POINT OF CONSUMPTION' ... AND SOMEWHERE IN BETWEEN

IN my previous column, we looked at the definition 'electrical installation'. And we concluded that it means "any machinery, in or on any premises, used for the transmission of electricity from a point of control to a point of consumption anywhere on the premises, including any article forming part of such an electrical installation irrespective of whether or not it is part of the electrical circuit, but excluding

(a) Any machinery of the supplier related to the supply of electricity on the premises;

(b) Any machinery which transmits electrical energy in communication, control circuits, television or radio circuits;

(c) An electrical installation on a vehicle, vessel, train or aircraft; and

(d) Control circuits of 50 V or less between different parts of machinery or system components, forming a unit that are separately installed and derived from an independent source or an isolating transformer..."

During our limited 'encounter', however, what we didn't discuss were all the excluded bits and parts – that is, what happens before the 'point of control' and/or beyond the 'point of consumption' ... and sometimes in between.

Let's pause for a while and attempt to figure out how many definitions are actually locked up inside the definition of an electrical installation. And, by this, I mean only the unique definitions mentioned and not the ones that one finds inside those definitions ... I count six unique definitions and another three that are repeated at least once.

You will find these definitions elaborated upon either in the Occupational Health and Safety Act (Act 85 of 1993) (OHS Act) itself, or somewhere in the Regulations. Most of these definitions appear verbatim in SANS 10142-1 or with slightly altered wording to make them more comprehensible.

Can you just imagine how difficult it would be to read the OHS Act and Regulations if those explanations (definitions) had to be written out in full every time? But it also underlines how important it is for those definitions to define exactly what and where certain limits find themselves. This is why I am a big fan of using definitions (including the explanatory paragraphs) of the OHS Act and the Regulations when it comes to settling a difference of opinion. I find that in 99.9% of cases, arguments arise due to blatant ignorance and the incorrect understanding or interpretation of a definition.

Now, if we look at the excluded bits as defined, we see that the 'machinery' (supply cable) from Eskom or local authority to my point of control is excluded. And to prove machinery can be a cable, we will quickly look at the definition from the OHS Act:

"... 'machinery' means any article or combination of articles assembled, arranged or connected and which is used or intended to be used for converting any form of energy to performing work, or which is used or intended to be used, whether incidental thereto or not, for developing, receiving, storing, containing, confining, transforming, transmitting, transferring or controlling any form of energy..." In short, it's a cable... But what the supplier of electricity can expect from me is that I take custody of the supply cable and treat it as if was part of my installation where the point of supply is not the point of control, whether it is overhead or underground, mainly for the purposes of safety and to prevent abuse – and this goes for the metering equipment, too. You will find there are specific references to earthing of television antennas in SANS 10142-1, for the purpose of lightning protection for instance. The authors of SANS 10142-1 have noted that even though the antenna per definition does not form part of the electrical installation as defined, it does come into contact the normal electrical installation somehow and can allow

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uninvited 'guests' – such as lightning – to gate-crash my electrical installation and, therefore, special precautions are required.

Then the exclusion of trains and planes ... The exclusion – in a roundabout way – tells me that an electrical installation as defined can only be found in premises that do not move around all the time, thus in a building of sorts.

And, to prove that point from the OHS Act – 'premises' includes any building, vehicle, vessel, train or aircraft: The exclusion of the control circuits of 50 V or less recognises the fact that these circuits are a requirement on intricate manufacturing equipment for instance, but the installation methods differ widely from that of a traditional 230/400 V installation. This is not to be confused with low voltage (12 V) lighting circuits, however...

If you read SANS 10142-1 carefully, you will notice most of the low voltage lighting installation rules revolve around the fact that even though such circuits may not be able to kill you in the event of inadvertent contact, the high currents in those circuits with the resultant high temperatures create the perfect conditions for fires. The balance of the definitions in the above will be addressed as we progress further down the list of definitions.

The next definition... and what have we here? "Electrical Installation Regulations, 1992" means the Electrical Installation Regulations, 1992, promulgated by Government Notice No. R. 2920 of 23 October 1992..."

At last, something that is self-explanatory ... but, what follows next has its own issues, believe me.

" ... 'electrical tester for single phase' means a person who has been registered as an electrical tester for single phase in terms of regulation 11 (2) for the verification and certification of the construction, testing and inspection of electrical installations supplied by a single-phase electricity supply at the point of control, excluding specialised electrical installations ..."

I had a very irate contractor phone me the other day. He was upset because he had lost a contract to a one-man operation for the long-term maintenance of a fairly old block of flats. His argument was that "you must be an installation electrician to work on such an installation". Unfortunately, he is right and he is wrong.

So, as I knew the guy from way back, I contacted him and he told me that this particular block of flats does have a three-phase supply to the meter room but, from there, the units themselves are wired single-phase including the metering. Therefore, technically, because the main switch is in the distribution board inside the individual flats (the point of control), it is considered a single-phase installation and a 'single phase tester' can legally work on it.

When I asked about the three-phase supply side of things, he told me that the meter room is under the control of the supply authority as it holds the keys. And, in the event that the supply authority ever gives up those keys (which is very likely as the block is being sold under sectional title), he will contract a person who can legally work on three-phase installations. There's nothing wrong with that argument.

Until we pick up the 'one and three' debate again, stay safe.

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