

NATIONAL OFFICE

Level 4,
30 Atchison Street,
St Leonards NSW 2065
Locked Bag 1818,
St Leonards NSW 1590

T +61 2 9439 8523
F +61 2 9439 8525
E necanet@neca.asn.au
W www.neca.asn.au
ABN 78 319 016 742



national
electrical and
communications
association

NECA NSW

Response to CMIG consultation on Metering Installation Requirements November 2019



FOREWORD:

NECA NSW cannot support the Requirements in the current form. As outlined below, we have serious concerns with the proposals.

We intend to present these concerns to relevant NSW authorities.

In particular:

- Adoption of the proposed rules would essentially require abandoning the NSW service rules. NECA NSW does not support this, and we believe the NSW government would also object. ‘
- CMIG’s document confuses the role of the different parties operating within the NSW contestable works market. The Requirements must address this or they will not be fit for purpose in NSW.
- We have serious concerns about the cost implication for consumers that would result from the proposal to have a switchboard dedicated to metering equipment at every customer installation free of any customer equipment. This is an extremely unnecessary and onerous requirement that doesn’t fit with current industry practice.
- It is apparent that different states have different standards, but the standards in NECA’s view in NSW are among the best and seem to be more practical than the one offered. It is interesting to note that Victoria are not participating in this and that the ACT don’t participate in the recognised electrician licence scheme in play now. This document in its current form will not be accepted by many states.
- There are unnecessary and onerous conditions put on the customer to upgrade their installations at the behest of retails / metering providers.
- Upgrades include providing meter mounting facilities and meter panels free of customer equipment which means a considerable extra burden on over 95% of

current whole current metered customers whose installation does not meet these requirements.

- Until there is an adequate public consultation period and adequate involvement by all members of the working group, this document will not achieve the balance required to be universally adopted by the states.

Comments on specific clauses

Clause 1.2 (page 7)

This clause refers to an installation that does not meet the requirements of AS3000. Many installations throughout NSW do not meet the current requirements of these rules.

There is no differentiation stated in this document between customer initiated metering upgrade and installation, as opposed to Retailer/MC/MP initiated meter upgrade, other than Clause 1.8 for example. There should be detailed reference as to who is responsible, as well as when and what they are responsible for.

Clause 1.7 (page 8)

This clause states that for safety reasons, all whole current and Network Device terminals shall be directly connected to isolating devices. The problem, however, is that a network device such as an FIR (Frequency Injection Relay or hot water timeclock) is already connected to the Service Fuse directly, or via a meter terminal or sealed active link. Upon further reading of this document, it is stated that an MPD (meter protective device) can only protect the meter and nothing else. That means an FIR will have to have a fuse or circuit breaker added. The MPD should be there to protect metering equipment not just whole current meters. Historically the SPD fuse has always done this job, as well as protecting the installation. In many cases with existing installations, the switchboard panels themselves cannot accommodate extra equipment, as shown in the diagrams as mentioned.

Having too many different joins in conductors is creating an increased possibility of connection failure. As NECA advisors have experienced countless times, fuse terminals (especially the service fuse) fail, and catastrophically. This includes metering terminals. adding more joins is not beneficial in NECA's view.

Clause 1.8 (page 9)

The fourth paragraph of this clause relates to replacing not only the panel, but the entire meter box. While there is no issue with replacing asbestos panels or timber panels, the main problem is that many meter boxes are already in fixed locations. However, in review of the S&I rules of NSW, if the metering location does not comply to the current S&I rules annexure, then the meter box would have to be replaced. The existing board could stay in most circumstances. In circumstances where there is no room, there should be provision for Metering Providers or Distribution Authorities to provide a "meter mark" which is something that Network Inspectors did for customers where they could not comply with the rules.

Clause 1.9

This needs to be a lot clearer and the cost of repair and responsibilities spelled out in detail. There should be provision to upgrade metering without necessarily withholding supply for minor issues, and MPs should pass on AS/3000 responsibilities to the DNSP and fair trading Inspectors to write a defect to the customer. See SIR's annexure document cl 1.3 regarding guidelines of what needs to be looked at / scope of possible items to upgrade.

The customer, as is stated, may be responsible for payment of their meter equipment because the retailer or the meter provider have a problem with what would be for all intense purposes, their own equipment

Replacing a meter box and its contents is not a cheap exercise. Depending on what needs to happen you can start looking at a very basic cost of 2000, but generally you are looking at 3,000 to 4,000 to replace a meter box and bring it up to code.

It is NECA's view that only in very limited circumstances should a customer be burdened with extra cost, and indeed if a private company wants to replace or repair

something because they say so, It is NECA's opinion that they be responsible for charge.

Clause 2.1 (page 11)

The first paragraph of this page mentions "Distributors Service and Installation Rules (SIR's), when in fact, the State Service Rules is an Industry Stakeholder document managed by the state government.

The distances and clearances need to be standardised and consistent with current rules. In the dot points toward the end of this clause, the heights are too low. The NSW annexure SIR's state as per clause 2.2 (c) "Provide a vertical clearance of not less than 2 metres from the ground". This is written as such to reflect the 'Wiring Rules' definition clause '1.4.3 Accessible, readily', rules i.e. 500mm min height from the ground, 2000mm max height from the ground for MPD, SPD, Metering equipment to avoid breaching 'wiring rules'. In effect, the 2100mm max height and the 400 mm min height is in breach of the 'Wiring Rules' that was clearly stated that this document would not override in clause 1.2 of the NMIR. Other states have different rules however and standardisation into a universal system is difficult. Discussions need to be had as to how this can be achieved in some circumstances.

Currently MPDs are not catered for in the NSW Service rules regarding min and max heights. This should be included in this document as well as distances around the metering equipment at a minimum of 10mm, and 35mm min from the hinged meter panel.

Clause 2.2

Ideally, this should read 'locking system' not just lock, similar to the NSW Service rules.

Clause 2.3

It should be specified here that escutcheon plates shall be provided for HCS fuses, with all available sealing points sealed, to prevent unauthorised access and so as to allow the removal of fuses without having to break seals.

Clause 3.1 (page 12)

The fifth paragraph on this page refers to multiple tenancies and access.

The clause should reflect that the meter provider has to seek authority by the customer to enter an individual tenancy for the purpose of testing.

Clause 3.2.1 (and other clauses)

This requires a reference of existing installations compared to new installations: Upgrades, additions and alterations.

Clause 3.3.1 (page 14)

Customer equipment should be mentioned as a consideration in this section. There is no mention of existing premises compared to new: installations, upgrades, alterations and additions.

Clause 3.3.2

There is no mention of minimum space around metering equipment. Nor is there mention of minimum space from the hinged metering panel. There is indication later on that minimum clearance is 20mm in the clearance diagrams.

Figure 7 (page 18)

The diagram shows the SPD/MIL adjacent the Distributor Equipment, this is not ideal. If there is a fault in the SPD or the Equipment, heat transfer can, in effect, damage the other component. Clarity is required in these diagrams to show that metering equipment includes network devices and that only one MPD can protect multiple devices.

Clause 3.3.3 (page 21)

In discussing table 3, the dimensions should be a minimum of 600 x 600 meter box or similar, with the panel being slightly less. This should be indicated in appendix A, typical panel layouts. This should be an example only rather than a mandatory minimum size. Also, there are other factors at hand here, specifically the distance between studs in a house is up to 600mm centres. This makes sense to leave the meter box at this size so that the electrician can securely fix the meter box to the frame. In general, the standard meter box and panel has worked well and has been in use for a considerable amount of time. It can accommodate all equipment including Distribution, Metering and Customers.

This paragraph is worded as shall when it should be a should

The paragraph under table 3 states that 'where the customer can demonstrate no upgrades'. Our experience is that this is not a good outcome, as it may be a cost saving initially to the original owner, but then ten years and ten owners later it turns to a disaster.

Clause 3.4.1

This clause means that MSBs require an upgrade to adequate meter mounting facilities where they don't comply with the stringent specified requirements, at the behest of retailers and meter providers. This is an unnecessary and onerous requirement, that requires re-wording and consideration. There is also no mention of existing installation compared to new installations, alterations, additions or repairs.

Clause 3.4.2

Same concerns as above.

Clause 3.4.2.1 (page 22)

Second dot point, the panel should be opened at no less than 90°. There is no reason for change here. It makes sense to open the board wider than 90°, but in some cases due to short cable ends, this will be the minimum.

Penultimate dot point also requires re-wording. Fasteners are not the only way of securing panels closed.

In regard to the last dot point on page 23 of this clause, there is no reason for a switchboard panel to be sealed if all of the metering equipment is sealed. This is not practical when adding customers equipment and cabling. You would have to break the seal to work on the switchboard. It may be possible to require sealing for over 100-amp switchboard with unmetered portions. However, this should be worded more accurately.

Clause 3.4.2.2

AS/3000 references labelling regarding the relationship to electrical equipment, as well as corresponding labelling, and indelible labelling. AS/3000 should be referenced here as a cross reference. This clause could be re-worded to detail “corresponding labelling between the main switch, meter, and entrance to the premises” or in a manner acceptable to the metering provider.

Clause 3.4.2.5 (page 23)

This clause means that a switchboard dedicated to metering equipment will need to be installed (if not already) at every customer installation free of any customer equipment. This is an extremely unnecessary and onerous requirement that doesn't fit with current industry practice. Is the customer SPD considered a network device? It is not specifically mentioned.

Non-metallic bolts/screws are not ideal. They're not robust enough and our harsh climate impacts on these, but usually there is only the top fixing that is exposed so the other fixing points can be metallic and uninsulated. Insulated caps can be used over metallic conductive fixings. There needs to be a better way of fixing meters though and still comply with rules such as NSW SIR cl 4.5.9, and AS/NZS 3000 1.5.5.1. Steel bolts/screws and nuts should be used, such as where the protruding

end should be filed off flush or a non-conductive screw cap be installed. Also, the majority of screws/bolts that hold equipment on is behind a sealed plastic cover, therefore there is no access to conductive parts. Plastic screws and fixings should not be the only method used. This clause requires re-wording.

Clause 3.4.3.1

The minimum clearance from the front of the meter to the meter enclosure door of 175mm is an extremely unnecessary and onerous requirement that doesn't fit with current industry practice.

Clause 3.5

Max conductor size should be 35 mm, as per current industry practice, although it may be good to restrict to 25mm which can be downsized from 35mm or 50 mm at the MPD or unmetered active link. It should be specified as to whether this is in reference to Compressed or hard drawn conductors and whether this means that only flexible cable is permitted to be connected to meter terminals.

Clause 3.6

This clause states that a meter neutral link is required. Currently in NSW, all installations have to have a service neutral link and a consumer neutral link. If a meter neutral link is installed, that means more cost, more work, and another point of electrical failure. The service neutral link can only contain the incoming neutral from the street and the metering neutrals as well as the neutral feeding the consumer link. All consumer neutral wiring is attached to the consumer neutral link including the MEN, being the main earth in this link.

NECA does not agree with the methods used for connection. The first dot point states soldering or crimping neutrals together is appropriate. This used to be done in the early days of electricity up until about the 60's, until links became more common and better designed to handle multiple cable connections. All neutral and active

connections are under one or two screw terminals in a brass link. They are excellent method of connection and allow for modification and additional cables without disturbing the electrical integrity of the installation.

The wiring rules states that it is acceptable for neutrals to be soldered, but this is not done at the switchboard and is only done on a sub circuit as in connecting the neutrals behind a light switch. The reason it is not done at the switchboard is so that fault finding and electrical testing can be completed without the need to unsolder and resolder cables, and with metering, it makes it easier to remove a damaged metering neutral from a screwed terminal.

The use of lugs is only done on large cables in large switchboards, that generally are installed for high current installations or for voltage drop reasons. Service mains cables are limited to five sizes in NSW. Again, this is for voltage drop and all cables are restricted to 100 amps as is the supply availability to each customer stated by the NSW SIR's. Flexible cables are the only reason to use bootlace crimps, however this type of cable is not allowed to be used for service mains but flexible cable is allowed for use as general wiring and switchboard wiring.

Clause 3.7

Meter isolation link required per phase.

Clause 3.9.4 (page 27)

So long as it doesn't impede access or interfere with the operation of the metering and associated wiring, installing comms equipment that monitors power usage and the like on their switchboard should be allowable.

Clause 4.1 (page 28)

The current NSW SIR's, the customer must provide only the facilities for mounting of CT equipment and the initial purchase.

Clause 6.1.1 (page 28)

If this is a national set of standards for metering, why then is Far North Queensland isolated and given the archaic system of Card Metering? This should never be introduced and should be withdrawn from any form of metering. Also, it is unclear why Ergon have a say in metering locations. In NSW, both government owned and privately-owned distributors have no say in metering locations now.

Concluding comments

As far as the figures on pages 30 to 41, it is NECA's view that the standard minimum panel should be set at what is the current industry standard here in NSW.

Spacing, where available, should be given to service fuses/MPD's to a maximum from the associated metering to prevent thermal interference if there is a faulty fuse. 20mm space seems a little close.

However, on switchboards for multiple customers, spacing is a premium, so this is a tough call. Maybe some distinctions should be made between single and multiple residential whole current customers.

It is NECA's view that it is disagreeable that the meter box/switchboard panel/meter panel, be used wholly and solely for the meter provider. This may have been interpreted incorrectly, but it appears as if that is what is being said.