

Example 8D(A): Connection of housing development with load transfer

An additional variation shows the arrangements that will apply where it is necessary to reconfigure the Distribution System so that existing demand may be transferred in order to release capacity for the new connection.

A new housing development has a Required Capacity of 2MVA to serve 900 plots. The local 11kV feeder has a network capacity of 7.7MVA based upon the limitation of the existing 400 Amp circuit breakers at Primary Substation A. The existing load on the circuit is 7.6MVA. It is therefore not possible to connect the new load to this circuit as presently configured.

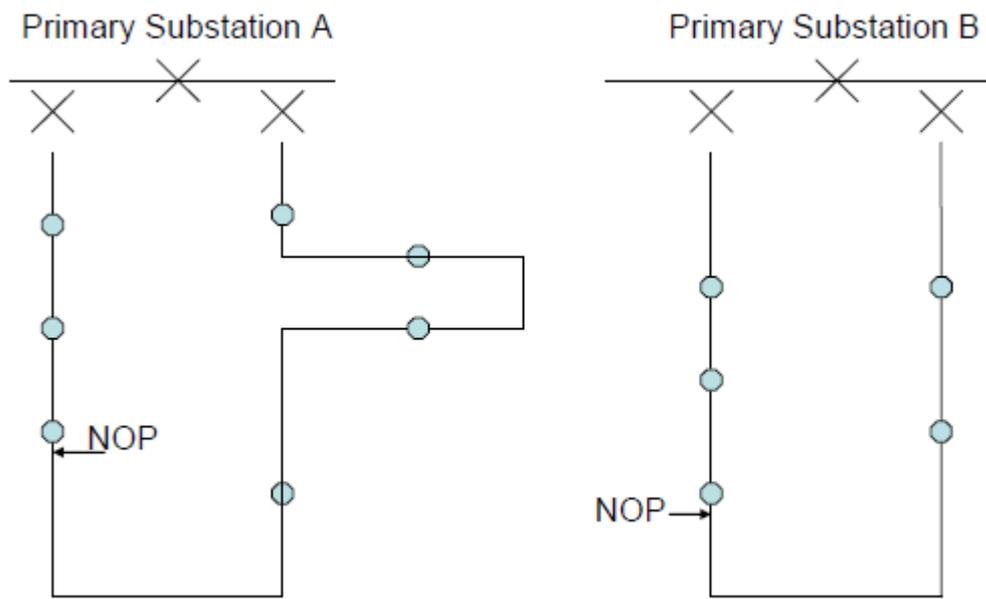
It is proposed to reconfigure the Distribution System such that two existing substations may be transferred on to an adjacent network, in order to release capacity so that the new connections can be made. Primary Substation B has sufficient spare capacity to accommodate the two existing substations. New cables are to be installed between points A – B and E – F. The existing circuit will be cut at point BE so that the new joints can be made. The total cable length between points A – B, and E - F is 100m. The network will be reconfigured by installation of two short straps C – D and G - H in order to maintain connectivity.

This transfer of existing demand (which can effectively be considered as a form of reinforcement since the capacity was not originally available in order to accept the new load connection.) will allow a POC to be taken from the local 11kV circuit to supply the new development. The newly installed cable to connect the development from the POC is 1200m long. Three 800kVA distribution substations are to be established onsite. The above work represents the Minimum Scheme to provide connections to the new site.

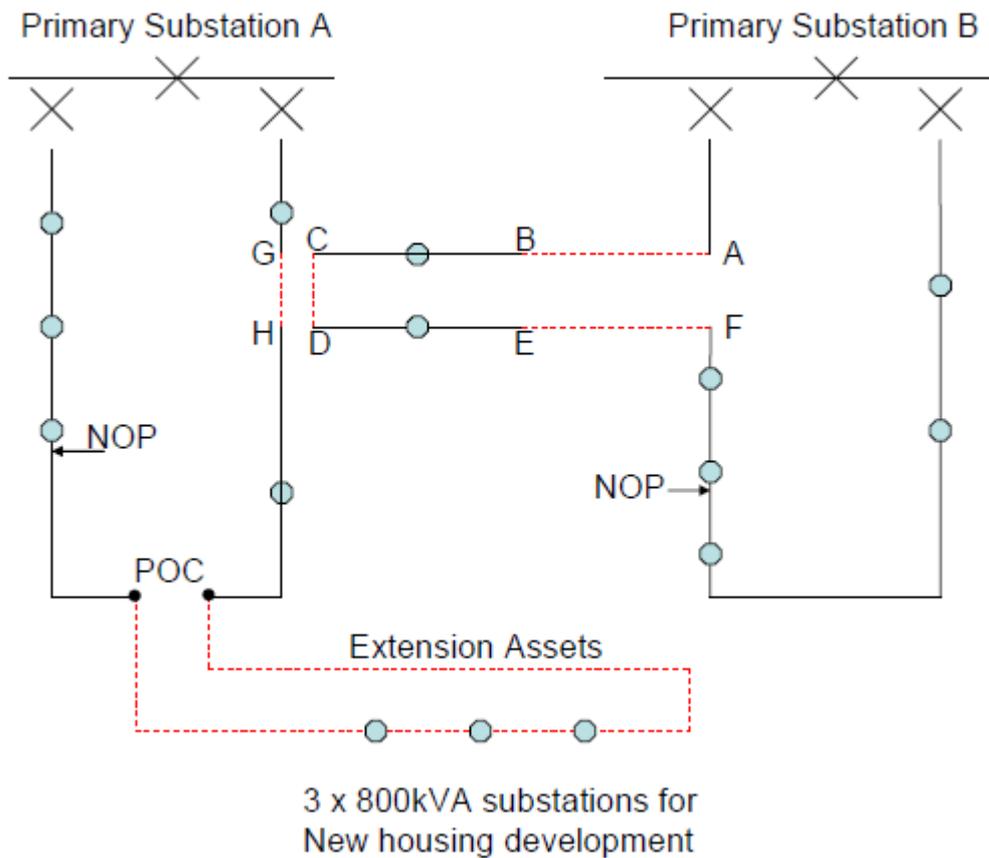
It is of note that :-

1. Capacity is created on the relevant section of network – otherwise the new load could not be connected.
2. The transfer of load to Primary Substation B will facilitate the new connection to the network connected to Primary Substation A.
3. The transfer of load to Primary Substation B will be at least the minimum to facilitate the new connection and (depending on immediate and future network requirements) could be more than the minimum load required to facilitate the immediate requirements.
4. The charging methodology suggested within this Change Proposal ensures that the applicants will only be required to fund the apportioned costs associated with reinforcement to facilitate the connection of the new load.
5. Conversely, the applicants will not be required to fund potentially unlimited reinforcement costs.
6. It is of further note that had the minimum scheme be considered to be reinforcement of the network from Primary Substation A, then there would be no doubt that the costs of that reinforcement would be treated under the CAF Rules. Hence the proposals here provide and support consistency of approach.
7. The denominator in the CAF calculation will remain the 'capacity of the network following reinforcement'

Original network:



Proposed Network:



Reinforcement:

The RSN for the Reinforcement

For the Reinforcement CAF the RSN is considered to be the two feeder 11kV network comprising the two original feeders from Primary Substation A. noting that the deloaded circuit was this new feeder is capable of feeding either of the existing circuits. The numerator in the CAF calculation is based upon the Required Capacity of the new development, i.e. 2MVA. In this case, the New Network Capacity (under N -1 conditions) following the Reinforcement works is calculated at (and remains under n-1) as 7.7MVA.

Fault Level CAF calculation: This Scheme does not have any significant Fault Level contribution to the existing shared use distribution network and Fault Level CAF is therefore not applicable here.

The Connection Charge for this Scheme is calculated as follows :

Reinforcement & Extension Assets

	Cost	Apportionment	Customer Contribution
1300m of 11KV cable including A-B,C-D,E-F, G-H	£100,000	2/7.7 th	£25,974
PoC to the development	£20,000	n/a	£20,000
3 by 800KVA distribution substations	£150,000	n/a	£150,000
On site LV Mains and services	£330,000	n/a	£330,000
8 by 11KV closing joints at A,B,C,D,E,F,G,H	£20,000	2/7.7 th	£5,195
2 closing joints at PoC	£5,000	n/a	£5,000