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MiPower – Certificate of Performance

This is to certify that MiPower power systems analysis software was procured on behalf of WBSEB & ASEB for the MasterPlan study of these States awarded to Electrowatt-Ekono by the Asian Development Bank in May 2000. The software has been used by us on these major transmission system studies and on several other studies since that time.

The primary use of the software for the WBSEB/ASEB studies was for load-flow and short-circuit analysis of their transmission and distribution systems. Developments of these core modules have resulted in products that are easy to use, flexible and powerful. The graphical interface can be used to construct the system model or alternatively drawings can be developed after data has been entered directly into the database. This gives a flexible approach that allows for drawings of various levels of detail or areas of interest to be produced. For validation of the database data and connection it is best to produce separate reports from the Access database. Reporting features allow for a filtered analysis of large networks i.e. only parameters out of range need be highlighted, definition of contingencies and batch-mode operation of the load-flow program enable a large number of studies to be executed within a few minutes. Load-flow studies with element outages can also be initiated from the graphical interface.

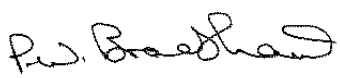
On other studies we have made significant use of the Transient Stability, Free Programmable Blocks and Autocad drawing interface modules. The built-in governor and AVR models are sufficient for most occasions – the FPB module has been used for special applications or where alternative models were provided by the manufacturer.

Performance is not an issue with systems having 200 busbars, 70 transformers, 160 transmission lines and 20 generators (each with AVR and governors) solving in all modules in a matter of seconds on a 266 MHz PC. We have confidence in the accuracy of the results that are produced.

The basic modules can be used without training by an engineer experienced in the use of power systems analysis programs. However, it is expected that to make full use of the many program options and capabilities some follow-up support/training by PRDC will be advisable.

Support by PRDC has been exceptional with many suggested improvements being incorporated within a few days and any bugs found in the code being fixed by return.

Based on our experience in the use many other similar programs available internationally we are able to say that MiPower is a worthy contender with the best.



Group Head – Transmission & Distribution