The way the problem was solved was innovative with respect to time, within the parameters stipulated by the National Electric Energy Agency (NEEA), that is, the recovery of the network took less than 3 minutes.

In Table II it can be noted that the time to perform the ANN training was adequate to what NEEA establishes.

The time in excess of that established can be explored in the treatment of other variables, such as in the communication between the automation and the keys.

5 Conclusion

Through the DSS, the IEEE 123 nodes test feeder network was selected. Some adaptations were made, including keys that were disabled in the default configuration, which enabled them to be fed, in order to increase the reliability of the system.

For the study, these secondary feeds are capable of supplying the entire system's needs, given the new reality, since a defective part is isolated and will no longer participate in the total system load.

Another important point is how the failures were selected, the same by sectors, classifying them in five, that is, any failure within that region will provide the same switching solution to isolate it, although there may be alternative power sources through the faults.

No simultaneous faults were considered, but the method can be applied in other systems to solve other faults in electricity distribution networks.

Thus, it is necessary to perform other experiments, to confirm the efficiency of the method in real time and make known this new technique.

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