1.3 OPERATING INSTRUCTIONS FOR SEMs AND DCDs

1) SEMs Data Collection

Every Monday morning data is to be collected using a Data Collecting Device (DCD), a small hand held unit though an Optical Coupler Cable

The same is used to dump the SEM data into a PC using a Serial Port Communication Cable with the help of a manufacturer supplied software.

The text form of the data is to be created through this software and is to be checked for proper format and syntactic correctness.

Voltage failure flags (*) are to be correlated with PT supply failures due to feeder shutdowns / Blown fuse, Switching operations etc.

Time Correction flags (aa/rr) are to be correlated with the Time Advance/Retard commands given through DCD.

After all the above checks, the binary coded file (*.MRI in case of SML meters or *.DCD and *.DAT in case of L&T meters as the case may be) is to be transmitted to SRLDC through e-mail

The reasons for Voltage Failure flags shall be intimated to SRLDC for incorporating necessary adjustments for under recording. Time correction flags shall also be intimated so that the same can be analysed further.

The data along with above information and site observations shall be e-mailed to sem@srldc.org., sreasem@vsnl.com , sreasem@hotmail.com , and sreasem@gmail.com

2) Data collection in case of feeder outage

In case the feeder is in 'out of service' condition the meter will not communicate with DCD as the power supply to the meter will not be available. In such cases for enabling data collection a single phase supply of 63.5V may be extended between any of the phase and neutral points of the voltage terminal of the meter through a means like 'Variac' or any such transformer which gives the required output. While doing this, permission may be obtained from local operational staff and due care may be taken to effect necessary isolations like removal of PT fuse or corresponding PT input wiring to the meter etc.

In case of L&T meters a battery back up button is provided for data collection during the feeder outage conditions. The same may be kept pressed and data shall be collected. This button is to be sparingly used to conserve the battery back-up and is to be kept pressed while data collection is going on

3) Periodical Checks :

SEMs

- Special energy meter may be periodically checked for any low voltage LED indication. If the LED becomes steady, it indicates the average voltage falling below 70%. PT inputs may be checked for any blown fuse etc.

- The push button display on the front panel may be made use of, for periodical checking of various parameters measured by the meter

- Time Drift checking

  Since the data recorded by SEM is time stamped (15 min. block data), it is very important to maintain the time of the meter, as it is prone to drift due to inherent variation of parameters like temperature, humidity etc. The time of the meter (Real Time Clock) as shown on the display panel of the SEM may be periodically checked for its correctness with respect to GPS/AIR time. When the time drift is more than 1 minute, necessary correction through the DCD may be carried out. It may be noted that time correction through DCD can be done by only 1 minute in a week and if the drift is more than 2 minutes, correction may be carried out in successive weeks. Due care may be taken regarding the type of correction i.e. ADVANCE or RETARD depending on whether the meter is SLOW or FAST. All the sites have to send monthly reports on the time drift of the SEMs as on the 1st Monday of the month and also the Time corrections carried out during the month.

DCDs

- Manual for DCD shall be thoroughly studied to ensure proper operation of DCD.

- DCD may be carefully handled and preserved in a suitable cover, when not in use.

- Healthiness of Data Collecting Device (DCD) and associated cables, accessories like charger, battery etc. shall be maintained to avoid last minute emergencies.

- It is preferred to use a fully charged battery with the DCD before data collection.

- In case of Analogic DCDs, the DCD may be kept in charged condition for at least 24 hours before data collection.

4) Special precautions

SEMs

i) Never keep the SEM in De-energised condition for long durations, to avoid drain on the internal battery. In case of spare meters, the SEM may be kept in charged condition by extending the supply to the voltage terminals.

ii) Never leave the optical window uncovered. Otherwise entry of dust particles on the window glass may result in problems in data collection because of improper communication of DCD with the meter.

iii) Never remove the optical cable from the meter while data collection is in progress. Doing so may result in hanging of the internal processor because the same would be in handshaking mode with the DCD till the data collection process is completed.

iv) Never subject the meter to extreme climatic conditions. It may be suitably guarded in a safe panel free from dust and water ingression.

DCDs

i) Never use a non-chargeable/disposable Battery cell in the DCD as it is prone to improper drain characteristics.

ii) Never fold the optical cable used for data collection or data dumping cable as this may result in cutting of the internal strands or opening of the soldered joints.

iii) Never leave the Analogic DCDs (supplied with L&T and SML new meters) in uncharged condition for a long time as it may result in corruption of the internal software.