



KERALA STATE ELECTRICITY BOARD LIMITED

(Incorporated under the Indian Companies Act, 1956)

Power System Engineering

CIN: U40100KL2011SGC027424

Office of the Director (Transmission & System Operation)

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Date: 01.09.2016

To,

- 1) **Sri. Pardeep Jindal**
Chief Engineer (SP&PA-1)
System Planning & Project Appraisal Committee
Central Electrical Authority
Sewa Bhavan, R.K Puram
New Delhi - 110066.
- 2) **The Chief Operating Officer**
Power Grid Corp. of India Ltd
"Saudamini", Plot no.2, Sector - 29
Gurgaon 122001, Hariyana.

Sir,

Sub: Implementation of 400kV Madakkathara - Malaparamba - Nallalam feeder - Reg.

Ref: Nil.

Sanction was accorded in the 39th meeting of the Standing Committee on Power System Planning for Southern Region, for the construction of 400kV Madakkathara - Areekode and 220kV Madakkathara - Malaparamba - Nallalam feeder, utilizing the RoW of existing 220/110kV feeders as 400/220kV multi-voltage multi circuit feeders by KSEB Ltd. The sanctioned scheme is designed with the following elements:

1. Construction of two additional 400kV bays at existing 400kV Substation, Madakathara.
2. Construction of additional 220kV bays at Madakathara, Malaparamba and Nallalam.
3. Construction of a 220kV Switching Station at Mavoor (Ambalaparamba) with ten line bays for providing a pooling point by LILO of following 220kV feeders:
 - Areakode - Nallalam D/c
 - Areekode - Kaniampetta S/c and
 - Madakathara - Areekode D/c.

As per the agreed scheme, it is proposed to import the power from existing 400kV substation at Madakathara. In this context it may be noted that the 400 / 220kV MCMV lines from Madakathara to Areekode / Nallalam is having Twin ACSS conductor with 2000MW / circuit capacity for 400kV and Single ACCC Drake equivalent conductor with 500MW / circuit capacity for 220kV.

At present Northern part of Kerala is facing severe power shortage and this issue is expected to multi-fold in the near future leading to severe power crisis in the region. Many of the upcoming inter-state and intra-state transmission networks have been held up due to severe RoW issues inside the state. Hence, power from multiple sources will be required for a stable and reliable supply in the region. Meanwhile LILO of 400kV Madakathara – Cochin East (Quad Moose) line is proposed for the evacuation of 2000MW power from the planned HVDC station at Madakathara. In order to improve the efficacy and security of the transmission system and to ensure availability of corridor, at least to a lesser extent, for evacuating power from this station even under the non availability of the 400kV corridor, additional outlets needs to be provided at the HVDC Station.

Taking all the above matters into consideration, it is felt that construction of 220kV Madakkathara – Malaparamba - Nallalam D/c feeder from the 2000MW HVDC station at Madakathara will be an ideal solution to improve the corridor availability, which will require additional two 220kV bays in the proposed station. It is understood that PGCIL is expected to install two nos 400/220kV Transformers for providing auxiliary supply in the HVDC station. It is recommended that the same may be planned with 2x315MVA 400/220 ICT's with two 220kV bays for KSEBL, since it will also address KSEBL's requirement for providing power at 220kV Level. Further, this arrangement will also suffice in providing an alternate auxiliary support at 220kV level from the KSEB grid which will enhance the reliability of Station auxiliary in the proposed HVDC station.

Hence, sanction may kindly be accorded for the following in the upcoming Standing Committee on Power System Planning for Southern Region.

1. Providing two additional 220kV bays by CTU in the upcoming 2000MW HVDC station at Madakathara for implementation of 220kV Madakkathara – Malaparamba - Nallalam feeder.
2. Installation of 2 X 315MVA 400/220kV transformer in the proposed HVDC station.

Yours faithfully,

Sd/-

**Director
(Transmission & System Operation)**