

**POWER GRID CORPORATION OF INDIA LTD.**  
**CORPORATE SYSTEM OPERATION DEPARTMENT**

From : ED(SO) To : ED (Engg.-II)

Date : 27-01-09 CC : GM, ERLDC

Sub : **Network strengthening requirements in Eastern Region**

Eastern Region experiences occasional and seasonal transmission constraints at two identified pockets in transferring power to NR and NER. The following proposals are suggested in order to overcome these constraints:

A) Strengthening of 400kV Farakka- Malda-Purnea D/C line

During the low hydro period (December to February), the total availability from Teesta, Tala and NER hydro stations reduce to a minimum. The total drawal by Northern and North-Eastern regions at times exceeds 2000MW. Under such conditions, the power flow through 400kV Farakka-Malda-Purnea D/C line attains very high values, as a significant part of the thermal surplus of Eastern region tends to follow this corridor.

The influence of NR and NER drawal, and generation from Teesta, Tala and Farakka on Farakka-Malda loading is illustrated by the enclosed plots.

These lines being of twin moose configuration, have inherently lower power carrying capacity than that of Tala transmission system. Based on stability, thermal and voltage regulation limits, the allowable power transfer through any circuit of Farakka-Malda line needs to be limited within 800MVA, thus, restricting the total allowable power flow through Farakka-Malda D/C to around 850MW, so that on the contingency of loss of one of the circuits, the other circuit can survive.

During the recent outage of 400kV Malda – Purnea -II, which is a likely contingency, flow through the other circuit has at times touched 600MW.


In view of the above stated facts, there is a need to strengthen Farakka-Malda-Purnea section under system strengthening scheme of ER system.

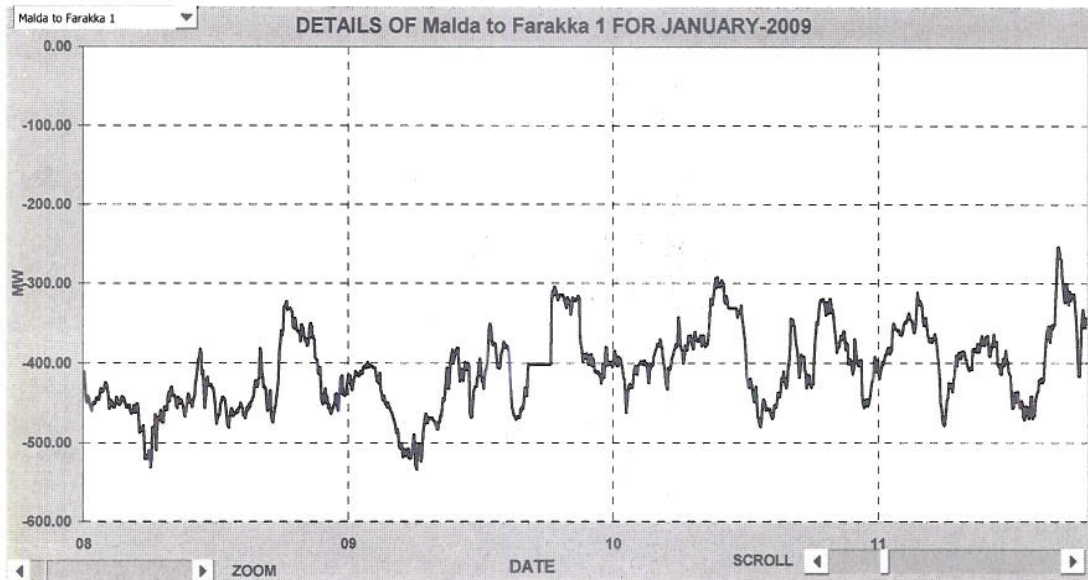
B) Strengthening of the AC by-pass link at Sasaram

The East bus of Sasaram S/Stn is connected to rest of Eastern Region by two circuits of 400kV Sasaram – Biharshariff line (twin moose) while Sasaram – Sarnath and Sasaram – Allahabad 400kV lines connect the Northern bus to Northern region. However, the East and North bus are mutually connected by only one twin moose connector (diagram enclosed for ready reference).

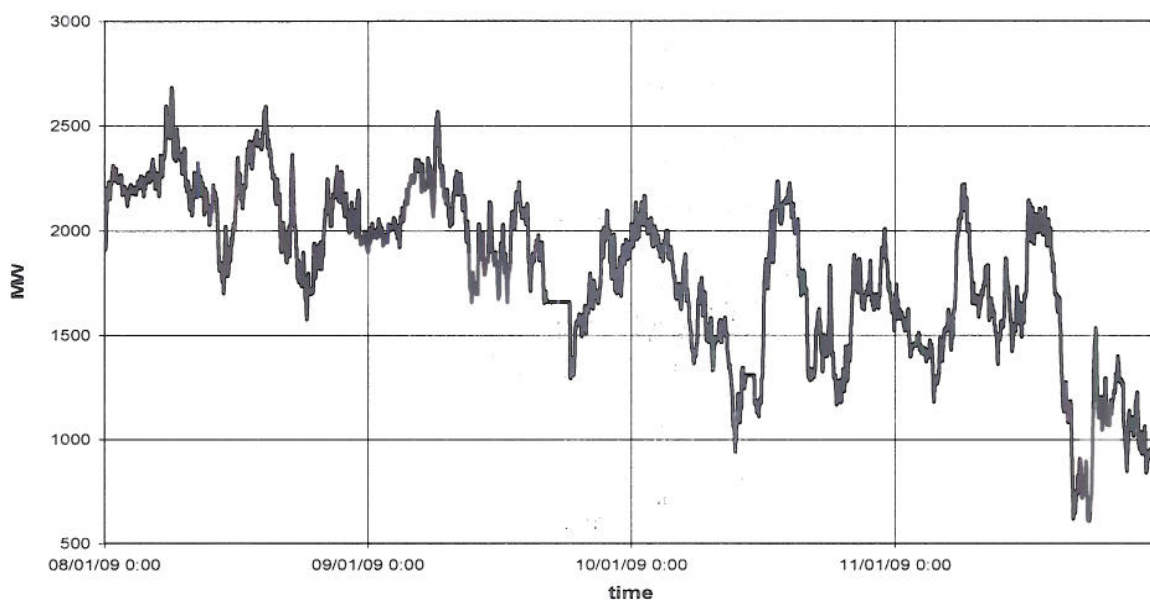
As such even though there are two 400kV circuits on each side, the feasible power transfer gets restricted to that of one circuit only. In order to effectively utilize the AC bypass link, it is proposed that the twin moose conductor be replaced by invar conductor, having significantly higher capacity.

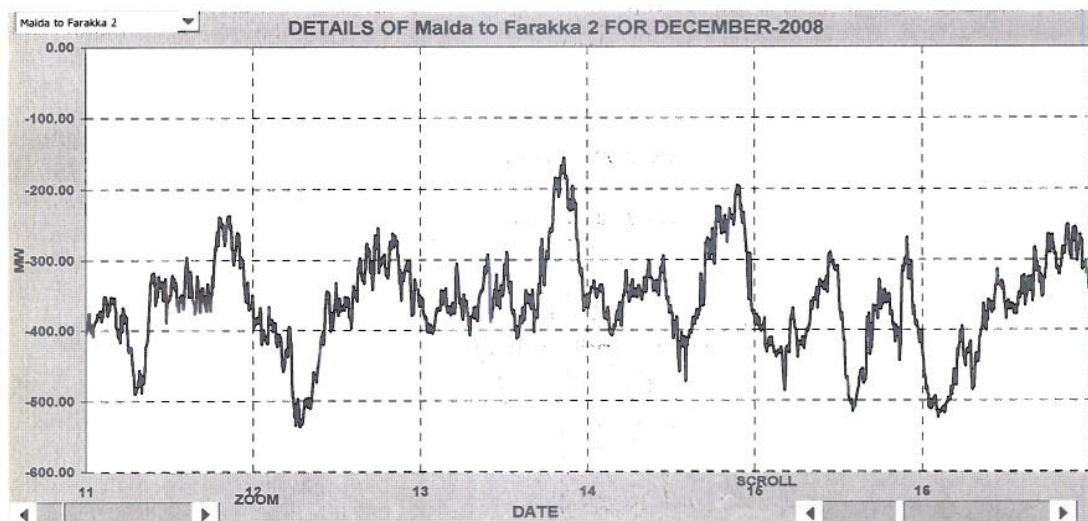
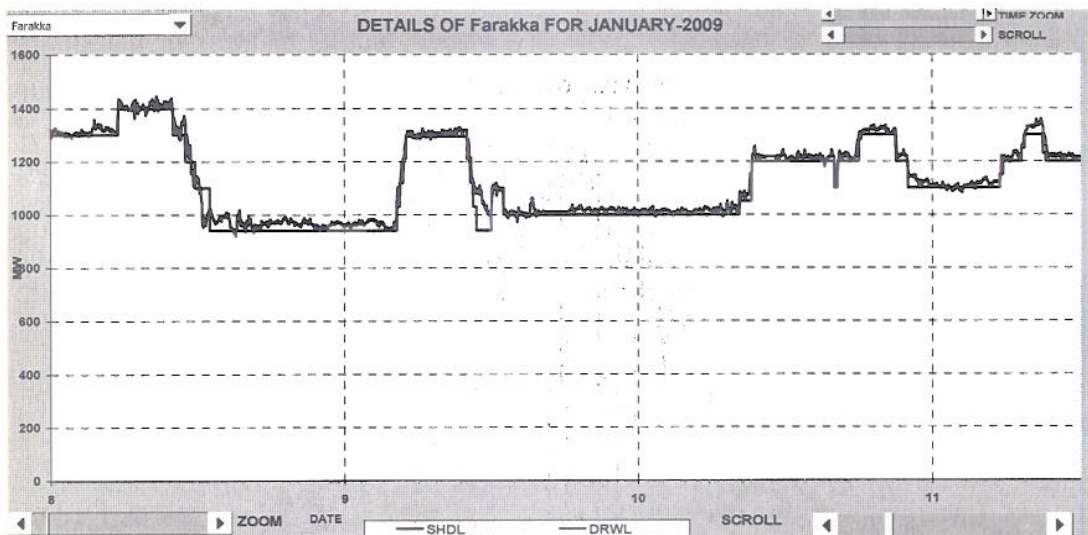
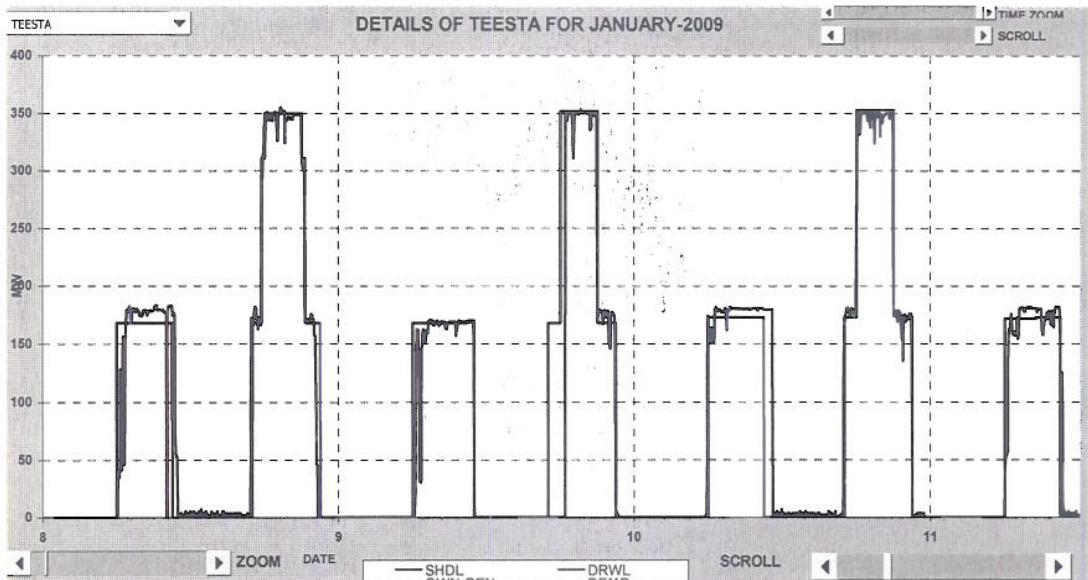
It is requested that the above proposals for the system strengthening schemes may please be got examined.

  
(S. K. SOONER)  
6/5/07  
~~(Dr. L. Hari)~~



**NR+NER total export**





### NER+NR total export

