

# पावर सिस्टम ऑपरेशन कारपोरेशन लिमिटेड

(पावरग्रिड की पूर्ण स्वामित्व प्राप्त सहायक कंपनी)

## POWER SYSTEM OPERATION CORPORATION LIMITED

(A wholly owned subsidiary of POWERGRID)



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National Load Despatch Centre : B - 9, Qutab Institutional Area, Katwaria Sarai, New Delhi - 110016

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NLDC/CEA-CTU/

Dated: 31<sup>st</sup> Dec 2012

To, The Member (Power Systems), Central Electricity Authority, Sewa Bhawan, R. K. Puram, New Delhi-110 066	The Chief Operating Officer (CTU) Power Grid Corporation of India Limited, 'Saudamini', Plot no 2, Sector-29, Gurgaon-122 001
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**Sub: Feedback under section 4 (j) of the National Load Despatch Centre Rules 2004—  
reliable operation of the Mundra generation pocket in coastal Gujarat.**

Sir,

Three large power stations with an aggregate capacity of close to 10,000 MW have come up near Mundra in coastal Gujarat as under with the indicated evacuation:

- i. APL Mundra having 4620 MW capacity (entire capacity commissioned) planned with eight (8) 400 kV outlets with Twin Moose and one 2 x 1250 MW HVDC bipole as well as four (4) 220 kV outlets.
- ii. CGPL Mundra UMPP having 4150 MW ultimate capacity (3320 MW synchronized as on date with the fourth 830 MW unit not yet in commercial operation) planned with six (6) 400 kV outlets with Triple Snowbird conductors.
- iii. Essar Vadinar having 1200 MW capacity (entire capacity commissioned) planned with four (4) 400 kV outlets with Twin Moose.

The Mundra area in Kutch Gujarat is also a high wind zone with substantial wind generation capacity which peaks during the April-August period. The following transmission system planned by the CTU and STU as per the status available on CEA website is yet to be commissioned.

- 400 kV CGPL Mundra-Jetpur D/C line (Triple Snowbird)
- 400 kV APL Mundra-Zerda 2 x D/C (Twin Moose)
- 400 kV Essar Vadinar-Amreli D/C (Twin Moose)

Apart from the delay in commissioning of the above eight (8) AC lines out of eighteen (18) AC lines originally planned, the dedicated nature of the 2 x 1250 MW HVDC bipole from Mundra to Mohindergarh has also led to a situation of lack of redundancy in the parallel AC system. If N-1 security criteria is considered, not more than 1250 MW can be securely transferred over the 2500 MW HVDC bipole. This aspect has already been raised earlier before CEA and CERC.

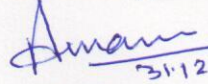
The above gaps in the transmission system have shifted the problem to the operating horizon as the market players have an expectation of full power station evacuation even without the full transmission system in place. System Protection Schemes (SPS) have been installed at APL Mundra to take care of the eventuality of tripping of any of the lines from the Mundra complex. However the limitations of the System Protection Schemes (SPS) and how it cannot be made a part of planning criteria has been voiced in earlier feedback. The SPS at APL Mundra are essentially based on local measurements and would not cover contingencies beyond one hop from APL Mundra.

Considering the above limitations in system operation, it is requested that the transmission plan of the above area is reviewed in a comprehensive manner considering all possible scenarios and the loadable limits for long transmission lines with shunt compensation at both ends. The transmission planning might also duly consider National Electricity Plan 2007 which envisaged N-2 criteria for large generating complex of 3000 MW and above.

Pending a review of any strengthening schemes, contingency plans covering inter-alia System Protection Schemes (SPS) may be made mandatory for all power stations greater than 2500-3000 MW capacity to take care of contingencies greater than N-1. Needless to mention, these contingency plans would at best be a stop gap arrangement to take care of the delay in commissioning of the transmission system. As outage of a large generating station complex such as Mundra would have an impact on reliability of the entire grid, an urgent action is requested on all the above issues.

Thanking you,

Yours faithfully,



31.12.2012

(A. Mani)

**Additional General Manager**

Copy to:

- 1) Member (GO & D), CEA, New Delhi
- 2) Member Secretary, WRPC, Mumbai
- 3) Member Secretary, NRPC, New Delhi
- 4) Member Secretary, ERPC, Kolkata
- 5) Member Secretary, SRPC, Bangalore
- 6) Member Secretary, NERPC, Shillong
- 7) Executive Director, SRLDC, Bangalore
- 8) General Manager, WRLDC, Mumbai
- 9) General Manager, NRLDC, New Delhi
- 10) General Manager, ERLDC, Kolkata
- 11) Additional General Manager, NERLDC, Shillong