

Comments of HPSEB

On

**Draft Proposed Regulations on
Terms & Conditions of Tariff
for the Tariff Period 2009-14**

Chapter-2

Procedure for Tariff Determination

Tariff Determination

- It is in line with the tariff order 2004-09 and is in order.

Regulation 5

Application for Determination of Tariff

- Provision of the projects which are likely to be completed within 6 months from the date of application has been included in the proposed regulation which is a welcome step.

Regulation 6

Truing up of capital expenditure and tariff

- This concept of truing up of capital cost in the terminal year of Tariff period shall facilitate the process of determination of tariff for the following tariff periods

Chapter-3

General Provisions for Tariff Determination

Regulation 7

Components of tariff

- With the deletion of moratorium period availed by the Generating / Transmission Company, the load of interest of capital cost will not pass on to the beneficiaries and hence Advance Against Depreciation (AAD) which has been deleted from the proposed regulation is in the interest of beneficiaries

Regulation 8

Capital Cost

- (2b) The concept of provision to include 10% contribution towards RGGYY in the affected area in the capital cost of hydro project by the developer is a good preposition but need to revisited on two counts (1)% is on higher side, (2) the beneficiary state(s)if constructs the project themselves may be excluded from making such contribution.

Regulation 9

Initial spares

- The ceiling norms for initial spares in case of transmission system only has been increased with a view to improve the voltage profile and hence line efficiency by installing latest technology based equipments on the HVDC S/Stn. and line compensation, therefore, this aspect is in the benefit of the beneficiaries as they may get improved voltage.

Renovation and Modernization

- It is a very good concept proposed as the life of the existing power plant can be increased by way of renovation and modernization of the project / lines and the beneficiaries may get the energy at cheaper rate from such existing generating plants. as compared to the new power plants to be established .However such provision be extended for replacement of outdated equipment during useful life periods also.

Sale of Infirm power

- **The accountal of infirm power in UI shall benefit the beneficiaries as well as Generator because the Generator shall recover the part of capital cost earlier and the beneficiaries may get power at cheaper rates.**

Regulation 13

Debt-Equity ratio

- **It is in line with the tariff order 2004-09 hence no comments.**

Regulation 14

Foreign Exchange Rate Variation

- **It is in line with the tariff order 2004-09 hence no comments.**

Chapter-4

Computation of Fixed Charges

Regulation 15

Return on equity

- **It is in line with the tariff order 2004-09 hence no comments.**

Regulation 16

Interest on loan capital

- **It is in line with the tariff order 2004-09 hence no comments.**

Depreciation

- **The provision to adopt two line depreciation method in proposed tariff instead of straight line method as approved in the tariff order 2004-09 is in favour of beneficiaries, as the major part of the interest on capital shall be recovered in first 15 years and thereafter the rate of depreciation may decrease and the beneficiaries have to pay less accordingly.**

Regulation 18

Interest on working capital

- **This is in line with the tariff regulations 2004-09. Only difference is that the receivable have been calculated on 45 days basis instead of 60 days, which will reduce the interest on working capitals.**

O&M Expenses - Hydro Generating Stations

- **The escalation rate percentage has been increased from 4%(2004-09) to 5.17%(2009-14) per annum due to increase in the price of equipment and hike in staff salary due to revision of pay.**

Transmission System

- **The norms fixed for O&M expenses per Km. basis and per bay basis at different voltage level is better preposition.**

Regulation 20

Expenses on secondary fuel oil consumptions & lime stone consumption

- **This concerns thermal generating stations hence no comments.**

Energy charges (hydro generating stations)

- **The formulae proposed to calculate the capacity / energy charges are simplified as compared to the one used in tariff order 2004-09. The capacity charges in tariff order for the period 2004-09 was on cumulative basis whereas in proposed tariff these charges are on non-cumulative basis and inclusive of incentive, hence in the interest of beneficiaries.**

Regulation 24

Unscheduled Interchange (UI Charges)

- **It is in line with the tariff order 2004-09 hence no comments.**

Chapter-5

Norms of Operation (Hydro Generation Stations)

Regulation 25

Norms of Operation

- **Preamble only**

Regulation 26

Norms of Operation for Thermal Generating Station

- **This concerns thermal generating stations hence no comments.**

Norms of Operation for Hydro Generating Stations

- In the tariff period 2004-09, normative annual plan availability Factor (NAPAF) has been taken as fixed for all the projects whereas in the proposed regulation it has been fixed project wise keeping in view the actual performance of the projects for the last 3 to 4 years. Capacity charge apportioning factor (CCAF) has been proposed in the regulation in order to share the hydrological risk as the capacity charges has been apportioned with energy charges on fifty-fifty basis. By doing so the load of capacity charges which otherwise used to come on beneficiaries has been reduced.

Regulation 28

Normative Annual Transmission System Availability Factor

- The concept of TSAFM has been introduced which welcome, however, it is proposed that this this availability factor of 98% & 95% may be calculated on daily basis instead of monthly basis, particularly during winter months i.e. 15th Nov. to 15th Feb when the constituents are highly precarious about the availability of power. There is a need for stringent regulations for non-availability of Transmission lines especially during the winter months. In the past too, there had been catastrophic effect due to failure of Transmission lines which is detailed in the ensuing slides.

Critical Corridor

In Northern Region Central UP to western part is a critical corridor having the following lines:

1. HVDC Rihand-Dadri Pole-I
2. HVDC Rihand-Dadri Pole-II
3. 400 kV Kanpur-Agra
4. 400 kV Kanpur-Ballabgarh
5. 400 kV Kanpur-Auraiya D/C
6. 400 kV Allahabad-Mainpuri-Ballabgarh-I
7. 400 kV Allahabad-Mainpuri-Ballabgarh-II
8. 400 kV Lucknow-Moradabad
9. 400 kV Panki-Muradnagar
10. 400 kV Unnao-Agra
11. 400 kV Unnao-Bareilly-I
12. 400 kV Unnao-Bareilly-II
13. 220 kV Kanpur/Panki-Mainpuri D/C

Probability of all lines available is only 72.3% going by the target availability as per CERC (95% for HVDC and 98% for AC lines)

Incident on 27th January 2007



- Heavy Fog in North West India (rail, road, air traffic)
- Tripping/Auto Reclosure started from 0300 Hrs.
- Maximum impact in Delhi, Western UP and Haryana areas.
- Most critical period between 0745 Hrs to 1130 Hrs.
- Max 53 (400 & 220kV) lines were out at 0812 Hrs.
- Western UP/Uttaranchal (approx 1200 MW load) area was being fed through 400 kV Agra-Muradnagar and 400 kV Lucknow-Moradabad lines only for more than 2 hours.

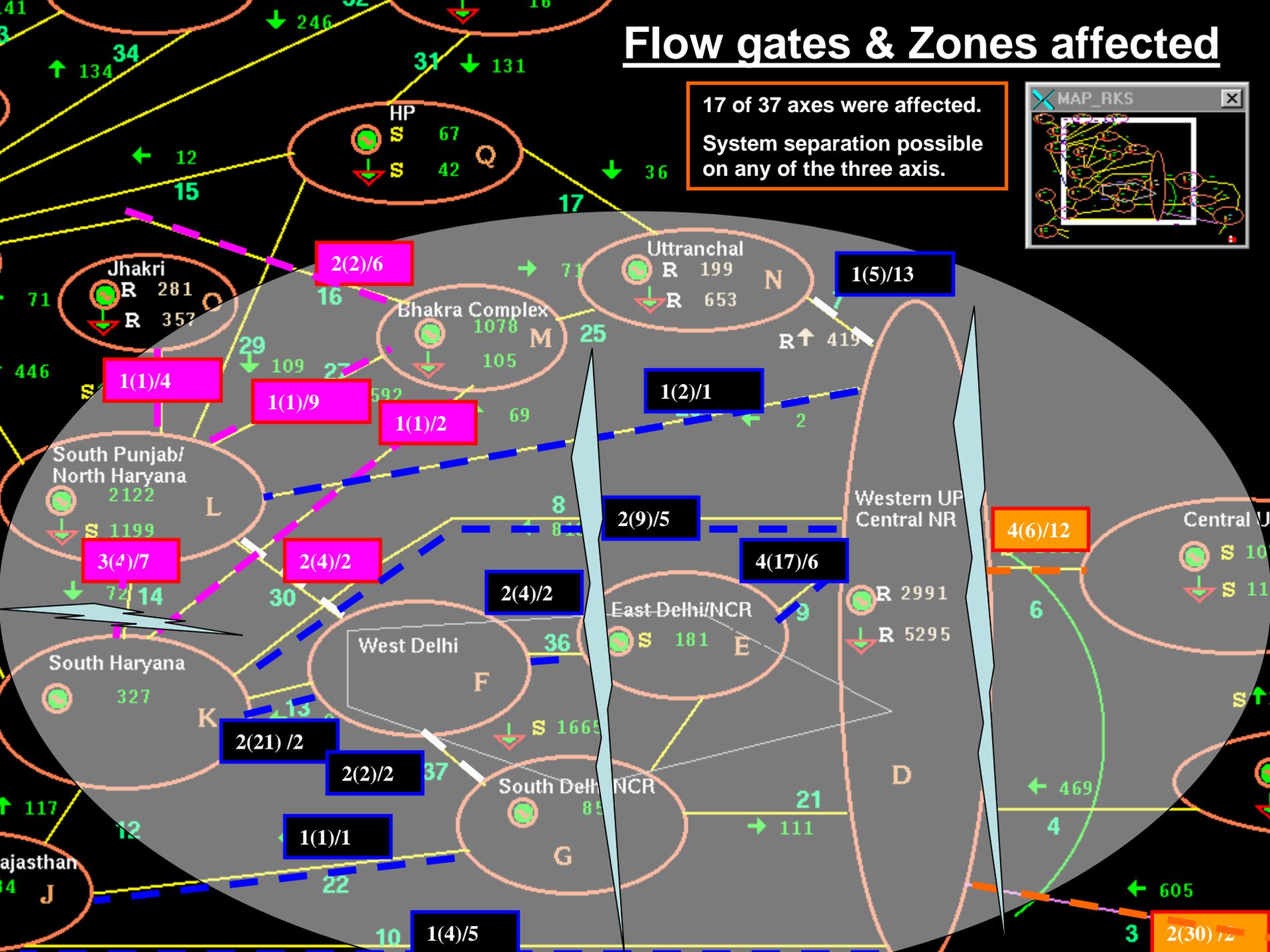
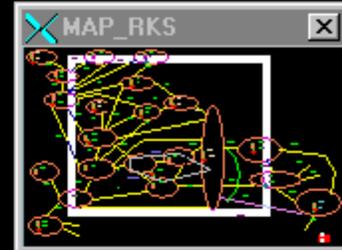
The Five hour '*Test of Nerves*'

- Time of incident: 0600 hrs to 1100 hrs
- Information overload
 - 3300 Alarms : **11/Minute**
 - 1200 Sequence of Events : **4/Minute**
- Situational awareness challenge
 - 17 number of corridors affected
 - 32 no. of lines out of 81 lines in these corridors affected
 - Total 82 no. of Auto-Reclosures on 17 lines
 - 400 kV Bus-II lost at Dadri at 08:12:22 hrs
 - 220 kV bus-II lost at Auraiya at 08:46:11 hrs
 - 220 kV Bus fault at Panipat (BBMB) at 09:00:51 hrs
 - 8 no. of 400 kV & 16 no. of 220 kV lines declared under breakdown
 - Auraiya 2 GTs and 1 STs & Panipat(Th) # 1, 2, 3 & 4 tripped
 - Backing down of generation at Singrauli, Rihand-1 & Rihand-2
 - Curtailment of Inter-Regional STOA transactions

Flow gates & Zones affected

17 of 37 axes were affected.

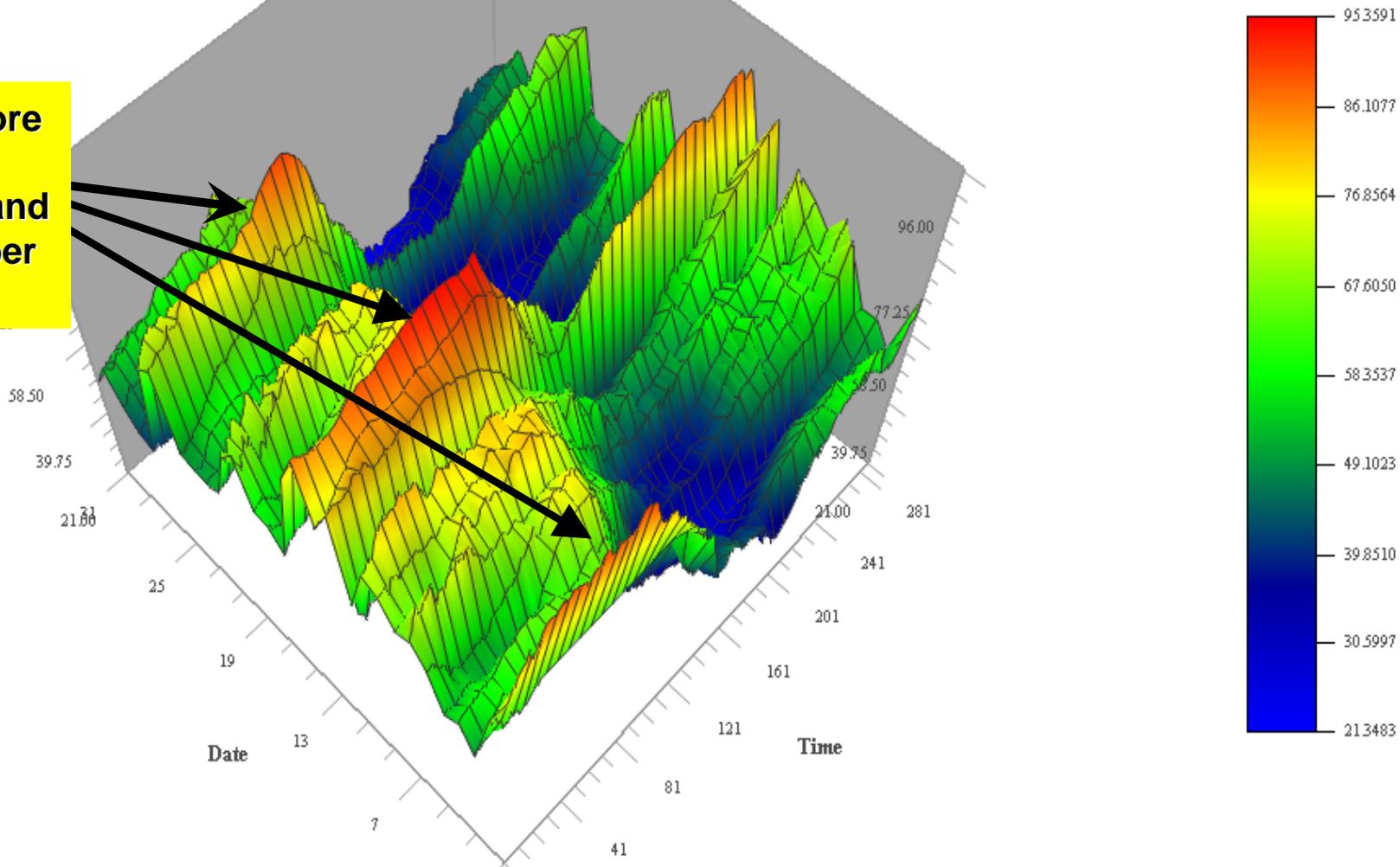
System separation possible on any of the three axis.



December-2007

**FOG RELATED TRIPPINGS OCCURRED
ON 1st, 13th, 14th & 25th December 2007**

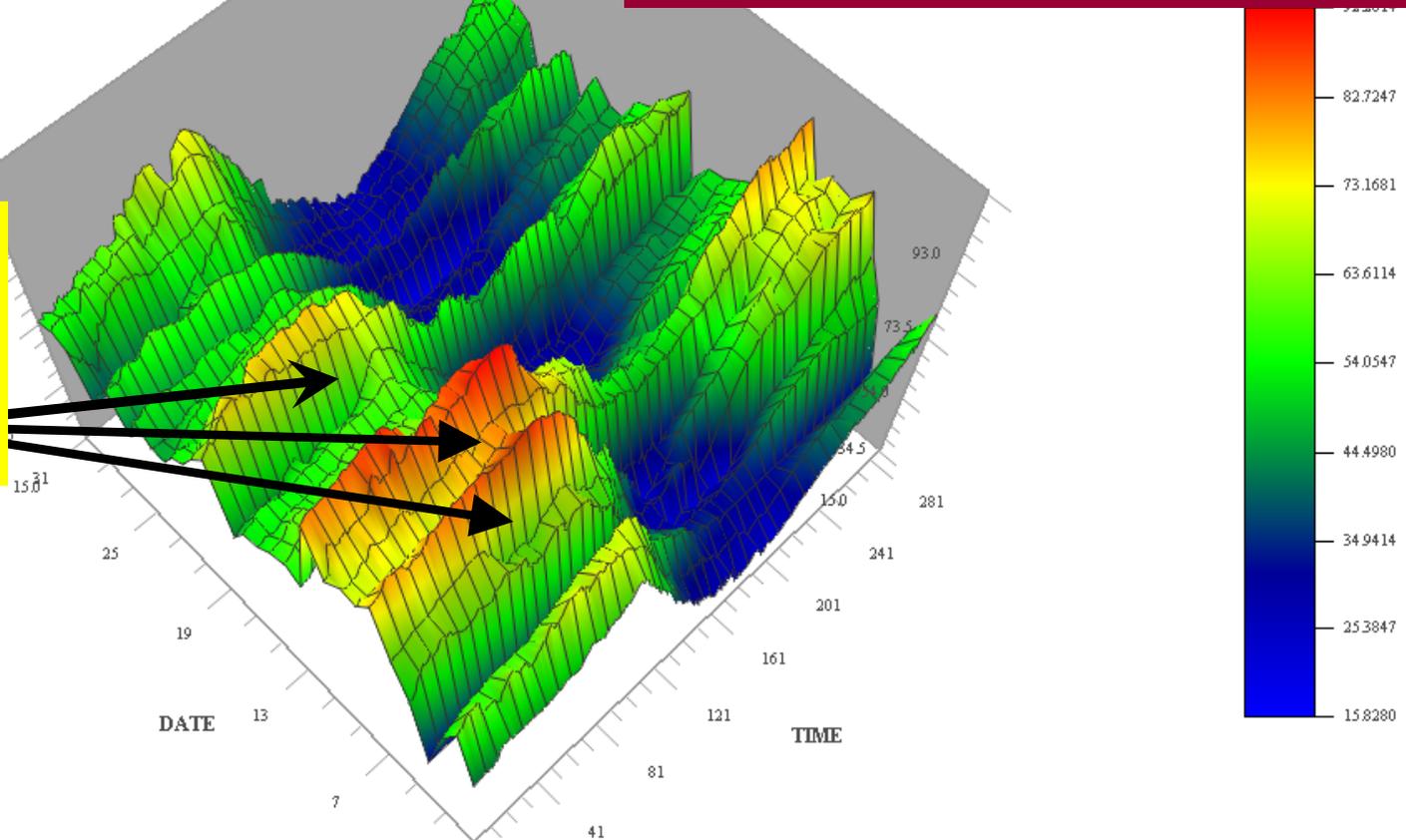
**Humidity more
than 85%
On 1st /14th and
25th December
2007**



January 2008

**FOG RELATED TRIPPINGS OCCURRED
ON 7th , 8th & 19th January 2008**

**Humidity more
than 85%
On 7th /8th and
19th January
2008**



On 24th January FOG trippings occurred in Central & Eastern UP

The Five hour '*Test of Nerves*'

- Time of incident: 0600 hrs to 1100 hrs
- Information overload
 - 3300 Alarms : **11/Minute**
 - 1200 Sequence of Events : **4/Minute**
- Situational awareness challenge
 - 17 number of corridors affected
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Fog Related incident on 4th /5th Feb 2008 in Northern Region

- First line tripped at 20:49 hrs/ 04 Feb- 2008
- 63x400 kV lines and 54x220 kV lines tripped
- 15x400 kV Substations and 9x220 kV Substations dead.
- NR System **separated** into two parts at 0437 hrs.
- Isolated system comprised of
 - **Punjab-Chandigarh -North Haryana -HP-Jammu & Kashmir –BBMB**
 - **Island size about 5500 MW**
- Rest of NR(Delhi/UP/Uttarakhand/Rajasthan) remained connected with “NEW” Grid.

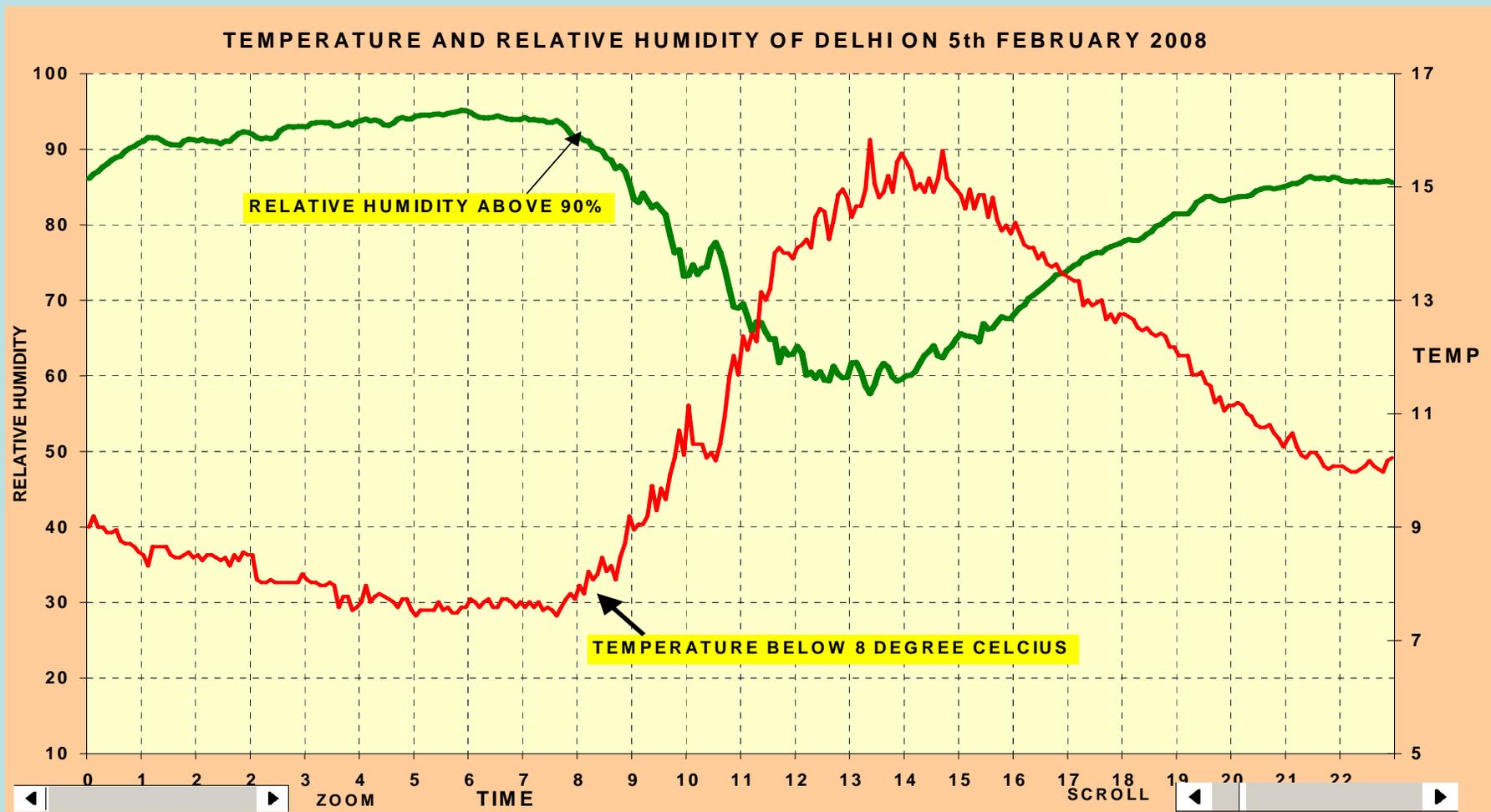
Fog Related incident on 4th /5th Feb 2008 in Northern Region

- At 07:45 hrs, 400 kV Dadri remained connected with rest of the grid only via 400 kV Dadri-Maharanibagh-Ballabharh line
 - Tripping of 400 kV Dadri-Maharanibagh-Ballabharh would have led to islanded operation of Dadri (T) & Dadri (G)
- Islanded operation continued for 4 hour 19 minutes

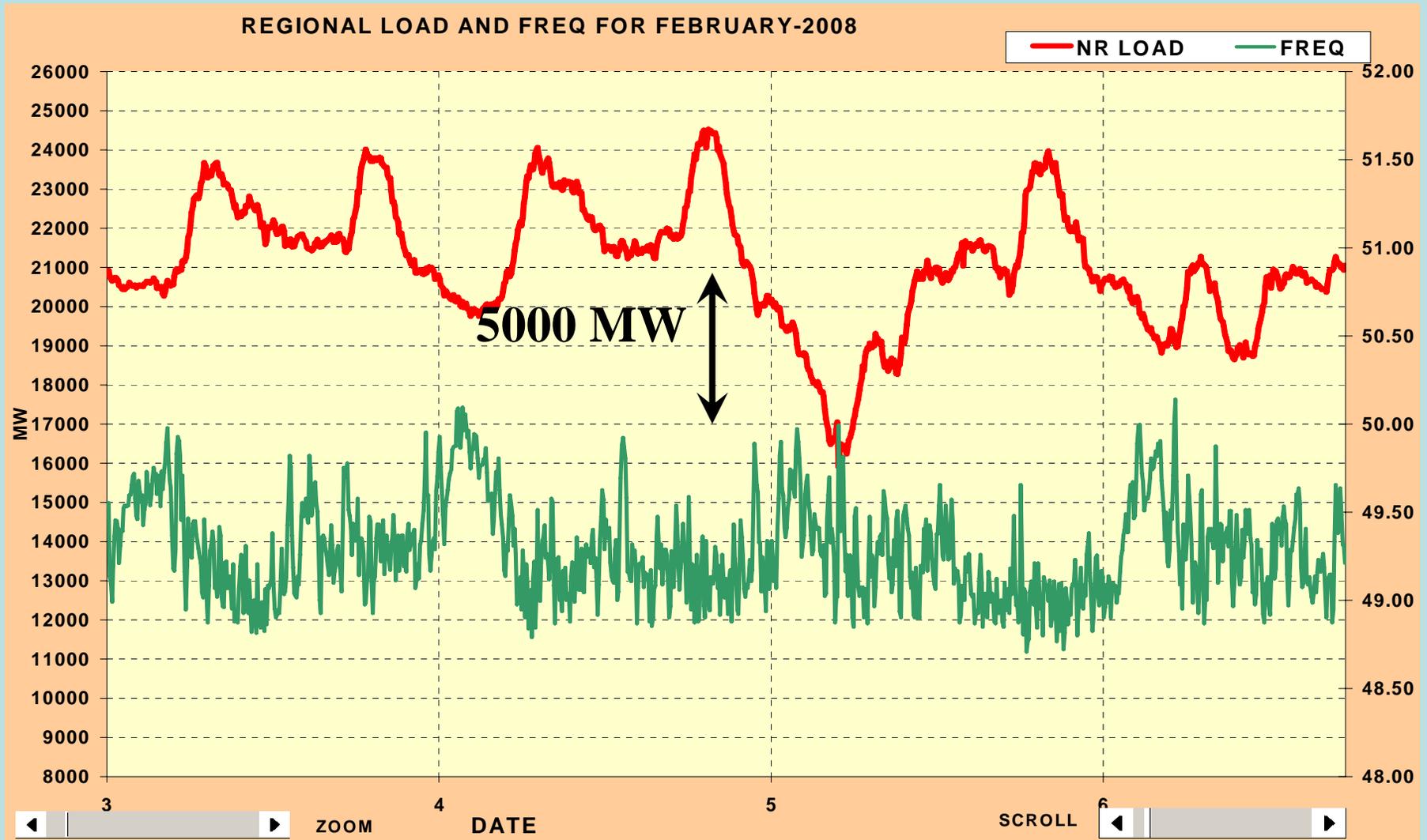
Fog Related incident on 4th /5th Feb 2008 in Northern Region

- Load shedding of around 5000 MW to avert cascade failure and survival of island
- Generation affected at Panipat (T)(unit 3 & 8)
– 110 MW x1 + 1x250MW = 360 MW
- 2600 SOEs received from 00 hrs to 0900 hrs of 5th Feb 2008
- 121 number of switching instructions issued by NRLDC
 - 83 instructions for closing of lines

Fog Related incident on 4th /5th Feb 2008 in Northern Region



Fog Related incident on 4th /5th Feb 2008 in Northern Region



List of lines autoreclosed on 4th/5th Feb 2008

S.N	Voltage level	Transmission Line	Number of times autoreclosed
1	400 kV	Mandola-Bawana-I	12
2	400 kV	Mandaula Bawana-II	11
3	400 kV	Dadri Mandaula II	10
4	400 kV	Hisar Patiala	8
5	400 kV	Dadri Mandaula I	8
6	400 kV	Mandaula Bareilly II	4
7	400 kV	Mandaula Meerut-I	3
8	400 kV	Bahadurgarh Bawana	2
9	400 kV	Dadri Panipat II	2
10	400 kV	Bassi Hisar	2
11	400 kV	Mandaula Meerut-II	2
12	400 kV	Ballabgarh Bamnauli-II	2
13	400 kV	Ballabgarh Mainpuri-II	2
14	400 kV	Bassi-Bhiwadi	2
15	400 kV	Hisar Bhiwani	1
16	400 kV	Bawana Hisar	1
17	400 kV	Hisar Kaithal	1
18	400 kV	Bawana-Bamnauli-I	1
19	400 kV	Bawana Abdullapur-I	1
20	400 kV	Ballabgarh Agra	1
21	400 kV	Mandaula Bareilly I	1
			77

Generation Backdown

ISGS	From	To	Generation Reduction
Singrauli	1529	1270	259
Rihand	1753	1231	522
Unchahar-I	400	267	133
Unchahar-II	408	300	108
Dadri(G)	700	400	300
Anta(G)	485	344	141
Auraiya(G)	351	246	105
Total	5626	4058	1568

Regulation 29

Auxiliary Energy Consumption in the sub-station

- These charges are the same as in the tariff order 2004-09, hence no comments.

Chapter-6

Scheduling, Accounting & Billing

Regulation 30-35

- **The provisions are the same as in the tariff order 2004-09, hence no comments.**

Chapter-7

Miscellaneous Provisions

Carbon Credit

- **The proceeds of carbon credit (CDM project) is in the interest of nation, hence no comments.**

Regulation 37

Norms of operation to be ceiling norms

- **It is in line with the tariff order 2004-09 hence no comments**

Deviation from Norms

- **It is in line with the tariff order 2004-09 hence no comments.**

Tax on income

- **It is in line with the tariff order 2004-09 hence no comments.**

Regulation 40

Recovery of Income Tax etc.

- **The income tax, cost of hedging foreign exchange rate variation etc. may not be recovered directly by the generating company or the transmission licensee from the beneficiaries instead it may only be recovered directly from the beneficiaries after prudence check by the Commission on year to year basis.**

Tax Escrow Mechanism/ Application Fee/ Power to relax

- **It is in line with the tariff order 2004-09 hence no comments.**

CONCLUDING REMARKS

HPSEB thankfully acknowledges the fact that Hon'ble Commission has given due consideration to the transmission availability factor. Draft regulations suggests availability of transmission system be calculated on monthly basis instead of yearly basis.

HPSEB suggests to make these norms more stringent and calculate the Transmission line availability on daily basis particularly during winter months i.e. 15th December to 15th February.

THANK YOU

