NTPC SUGGESTIONS ON DRAFT TARIFF REGULATIONS - 2009-14

Date: 03/11/2008

CAPACITY ADDITION AND RESOURCE REQUIREMENT

- **Large deficit of power is prevailing in Indian Power Sector. Gap between demand & supply is increasing year by year.**
- **During 2007-08, even with installed capacity of 1,43,000 MW, there was energy deficit of 8.9% and peak deficit of 15.6%.**
- **To meet the deficit of power and requirement of growing GDP, GOI, as per National Electricity Plan, has envisaged capacity addition of 78000 MW in XIth Plan:**
  - **Central Sector - 36,874 MW**
  - **State Sector - 26,783 MW**
  - **Private Sector - 15,403 MW**

  Total - 78,700 MW

CAPACITY ADDITION AND RESOURCE REQUIREMENT CONTD...

- **Further, during XIIth Plan, the capacity addition of about 82,000 MW is envisaged.**
- **Though the private sector has shown some interest in the capacity addition, however, large part of the capacity addition has to come from central & state power utilities.**
- **In addition to this capacity addition, large investment are also required for R&M of almost about 30,000 MW capacity for life extension. Along with investment in generation, capacity addition in transmission & distribution is also required.**
- **Investment required in the power sector in next 8 – 9 years would be at least Rs.20,00,000 Cr.**

CAPACITY ADDITION AND RESOURCE REQUIREMENT CONTD...

- **Since neither Central Govt. nor State Govt. are able to provide budgetary support, all future capacities in the Govt. Sector will have to be funded by the utilities out of their internal resources.**
- **Utilities can generate the resources only through the tariff allowed.**
- **Therefore, tariff norms must consider requirement of resources to be generated in the sector.**
- **Govt. of India, in the Tariff Policy has also stipulated that –**

"5.3(a) Return on Investment

Balance needs to be maintained between the interests of consumers and the need for investments while laying down rate of return. Return should attract investments at par with, if not in preference to, other sectors so that the electricity sector is able to create adequate capacity. The rate of return should be such that it allows generation of reasonable surplus for growth of the sector."

CAPACITY ADDITION AND RESOURCE REQUIREMENT CONTD...

- **It is often argued that to bring down cost of supply to end consumer, generation tariff should be reduced.**
- **In the long-term interest of the consumer, what is important is capacity addition and as and when there is adequate capacity, competition will take care of reduction in rate of supply to the consumer.**

RETURN ON EQUITY

- **NTPC supports continuation of RoE approach**
- **However, rate proposed by CERC is not in line with market expectation**
- **Investors expectation for return is higher because of –**
  - **Risk associated with power sector**
  - **Long gestation period**
  - **Long pay back period of 25-35 years**

RETURN ON EQUITY CONTD.....

- **NTPC proposes to adopt Capital Asset Pricing Mechanism to arrive at appropriate RoE as this will be more scientific method followed by the regulators world wide.**
  - **CAPM is more appropriate as utilities in future will depend on financial market for raising capital.**
  - **There should not be any problem of getting appropriate data with respect to market premium and beta of the power sector companies. Number of companies like CESC, erstwhile BSES, Torrent Power, GIPCL, Tata Power are being traded for the past 15-20 years. NLC, NTPC and PowerGrid scrip are also being traded for past 2-5 years.**
  - **Even if any regulated utility is not listed, CERC can adopt power sector beta as risks associated with the sector is similar.**
  - **SERCs can adopt the return decided by CERC**

RETURN ON EQUITY CONTD.....

- **CAPM model is being followed by the Regulators world wide like FERC, NEB (Canada), EMA (Singapore) etc.**
- **As per CAPM mode, considering –**
  - **Risk free rate of 8.5% based on 10 years' G-Sec**
  - **Equity Beta of 1.01 based on regulated utilities such as NTPC, Powergrid, NLC etc.**
  - **Market premium of 10%**
  - **The rate of return would be – 8.5 + 1.01 x 10 = 18.5%.**

RETURN ON EQUITY CONTD.....

YEAR	10 YEAR G-SEC	SBI PLR	ROE	Ratio of ROE to G-Sec	Ratio of ROE to SBI PLR
2001	7.9	11.5	16	2.0253	1.3913
2004	6.6	10.25	14	2.1212	1.3659
2008	8.5	13.75	14 (CERC)	1.6471	1.0182
ROE for 2009-14	8.5	13.75	18.405	18.030 (8.5*2.12)	18.780 (13.75*1.36)

Return of 18% is justified based on both G Sec as well as SBI PLR

ROE DURING CONSTRUCTION PERIOD

- 14% return on accounting basis translates to economic returns (IRR) of only 12.5% assuming 4 year gestation period.
- In case of hydro because of longer gestation period of 6-7 years, IRR will be less than 10%.
- Regulators world wide have allowed Return during construction.
- For new projects, RoE during construction can be capitalized for tariff purposes.
- For existing, stations additional return of 2-4 % may be allowed.
- NTPC proposes for providing post tax return of at least 18%

DEPRECIATION

- CERC Proposal will put utilities in disadvantage
  - Loan with 15 year repayment period are not available, Utilities will have to refinance loans at their risk & cost
  - In case 70% depreciation plus AAD has been recovered in first 10 yrs then no depreciation would be allowed for next 5 yrs.
  - Gas stations life is only 15 years, hence need for higher depreciation
- Tariff Policy provides for uniformity of depreciation in tariff as well as accounting.
- Tariff Policy also provides that AAD should be dispensed with.
- Since for accounting depreciation rate has to be as per Companies Act, same may be allowed for tariff.
- NTPC proposes to provide depreciation @ 5.28% up to 95% of capital cost in line with the Companies Act. Alternatively existing provision of AAD with 10 years loan repayment may be continued.

INTEREST ON WORKING CAPITAL

One month O&M expenses to be retained

- Repair & M expenses, employee related expenses such as on medical, travel etc, incurred through out the month
- Expenses on insurance, consumables, stationeries are incurred in advance
- As billing is done on 6th of each month, case for additionally service all elements of WC for 6 days more
- One month O&M expenses need to be retained in working capital.

Receivables to be retained at 2 months

- Surcharge proposed only after 60 days from billing, then corresponding receivables (i.e. 60 days) have to be provided in WC
- Rebate is financed out of receivables.
  - Rebate on prompt payment has been retained at 2%
  - To incentivise beneficiaries, higher rebate and corresponding receivables needed in the tariff
  - Due to higher rebate provision beneficiaries are presently making prompt payment. Reduction may lead to default.

INTEREST ON WORKING CAPITAL

Need for higher Maintenance Spares in Receivables

- Norms for maintenance spares need to be enhanced to support enhanced availability norm of 85% from existing 80%
- GoI also provided 40% of O&M cost as spares in the working capital
- Average spares inventory at NTPC stations during last 3 years was Rs. 1212 crs. Escalating the same @ 5.17% p.a. works out to Rs 1480 Cr in 2009-10 – (i.e. 40 % of O&M expenses)

Need for escalation in the Working Capital

- Rebate on billing is based on actual fuel price, generation and incentive whereas receivables is not indexed to fuel cost variation and allowed upto a generation level of Target Availability
- Fuel prices have increased by almost 40% and SBI PLR by 30% in the past 4 years
- Provision of indexation of WC with actual fuel price and with SBI PLR prevailing on 1st April of respective years is required.

REBATE & LATE PAYMENT SURCHARGE

- Rebate @ 2% of billing proposed by CERC
- Rebate is financed out of receivables provided in WC
- CERC Regulations to provide for
  - 60 days receivables in case of 2% rebate and
- Alternatively, Rebate has to be lower corresponding to 45 days receivables
- Date for Late Payment surcharge should be based on provision of receivable in working capital

INTEREST ON LOAN

- **Regulations w.r.t computation of IoL has been changing in each tariff period leading to uncertainty**
  - **2001-04: Normative repayment & AAD limited to 1/12 of Gross loan**
  - **2004-09: Normative repayment & AAD limited to 1/10 of gross loan & Depreciation considered as deemed repayment in case of moratorium**
  - **2009-14: Repayment being linked with depreciation**
- **CERC proposal of adjusting cumulative depreciation in excess of cumulative loan repayment against outstanding loan in the first Year will amount to change in approach of the normative repayments adopted in tariff so far.**
- **ATE has already given order for not linking loan repayment with depreciation.**

INTEREST ON LOAN CONTD.....

- **NTPC Proposal**
  - De link depreciation from repayment
  - Normative repayment
  - Interest rate to be calculated on day basis as applied by lenders
  - Utility to refinance costly loan and cost of refinancing to be borne by beneficiaries
  - Net benefit of refinancing of costly loans shall be shared.

FERV

- **NTPC agrees with CERC proposal of hedging of foreign exchange exposure in part or full as per judgment of regulated entity.**
- **However, NTPC proposes that FERV and hedging cost should be on actual foreign debt –**
  - **It is not possible to match actual foreign loan repayment exactly with CERC loan repayment norms.**
  - **Impact may be both +ve or –ve.**
  - **Beneficiaries enjoy lower interest rate.**
- **With regard to AS(11) (Revised), ICAI has opined that FERV on foreign loans contracted after 1st April 2004, should be charged to P&L account even if for the period before COD.**
- **Revenue from the project starts only after COD**
- **NTPC proposes that FERV charged prior to COD shall be considered as a part of the capital base for fixation of tariff as is the practice now.**

Determining Base O&M

- Actual O&M Expenses of preceding 3 years (2005-06 to 2007-08) should be considered instead of 2004-05 to 2006-07.
- There should be no normalisation. While doing normalisation of actual O&M expenses, an amount of about Rs.200 Crs per year has been deducted on account of –
  - Incentive & Ex-gratia
    - **These have contributed to better operational performance of NTPC, the benefit of which is being passed onto beneficiaries through better operational norms**
    - **Associated costs of better operational performance need to be borne by beneficiaries**
    - These are variable components of salary and integral to performance improvement
  - **Other heads such as Loss in stock, Prior period adjustments, Claims & advances written off etc are normal business transactions and are not abnormal.**
  - **Escalation factor for working out O&M cost of 2009-10 should be based on actual escalation of the years for which base O&M cost data is used.**

OPERATION & MAINTENANCE EXPENSES CONTD.....

Suggested Methodology

1. Consider average of O&M Cost (excluding the employee cost of Station & Corp. Centre, security expenses and water charges) for the three year period i.e. 2005-06, 2006-07 & 2007-08.
2. Escalate average of 2005-06 to 2007-08 three times to arrive at allowable O&M expenses (other than employee related) for the year 2009-10.
3. Consider the Station employee cost, Corporate Centre employee cost for 2006-07 & security expenses for 2005-06 (excluding the provisions in them).
4. Increase the employee related cost (Station + Corporate Centre) by 64% and security expenses by 45% to arrive at the figure for 2007-08 and 2006-07 respectively and then escalate @ 5.72% p.a. to arrive at the employee related cost for year 2009-10
5. The summation of 2 & 4 above should be the allowable O&M expenses for 2009-10

Suggested Methodology

6. Thereafter annual escalation of 7% be allowed in the tariff period 2009-14 based on estimated escalation for 2008-09, which should be subject to adjustment based on actual escalation.

7. Water charges should be pass through at actual

On the basis of above the O&M expenses for 2009-10 work out to:

500 MW	16.2
200/210 MW	18.0
Gas Stations	16.35
Tanda	32.16
TTPS	42.00
Badarpur	43.53

OPERATION & MAINTENANCE EXPENSES CONTD.....

Annual escalation for TTPS & Badarpur should be considered :

TTPS

- **There has been reduction in manpower from 2176 in 1995 to 823 in the current year.**
- **This works out to annual reduction of about 7-8%.**
- **However due to pension provision for retired employees, even though with the reduction in no. of employees by 7-8%, reduction in employee expenses in not possible. In fact there will be yearly escalation of 4-5%.**
- **Moreover the units of TTPS are more than 35-40 years old and therefore have high increase of repair & maintenance expenses**
- **Normal escalation would have to be provided to TTPS also.**

BTPS

- **Employee expenses of BTPS have remained almost constant during 2003-04 to 2006-07 due to reduction in manpower.**
- **However, Repair & Maintenance expenses in BTPS have increased considerably as the units have outlived their useful life**
- **There has been no Renovation and Modernization of Stage-I units so their Repair & Maintenance expenses are going up considerably**
- **Average annual increase in repair & maintenance has been in the range of 20% p.a. which constitutes almost 30% of O&M cost. This itself will result in 6% escalation in O&M.**
- **Considering the special circumstance of the station, normal escalation would require to be allowed for BTPS also.**

COMPENSATORY ALLOWANCE FOR EXPENDITURE ON MINOR ITEMS

- **CERC has included expenditure on roads, buildings, hospitals, schools, club, spares, batteries, tools and conveyors in coal stations as minor items and provided a compensatory allowance of 0.15 to 0.65lac/MW for stations beyond 10 yrs to 25 yrs old.**
- **These works require large capital expenditure cannot be treated as minor items hence, needs to be allowed as Add Cap for recovery through tariff.**
- **NTPC proposes that such compensation should be applicable to minor items that the CERC did not allow after cut-off date during 2004-09 period under regulation. Further, such provisions should also be applicable for gas and hydro stations. NTPC proposes as below:**

0-10 yrs	11-15 yrs	16-20 yrs	21-25 yrs
0.15 lac/MW	0.25 lac/MW	0.44 lac/MW	0.82 lac/MW

TAX ON INCOME

- NTPC agrees with the CERC proposal of post tax return
- However, treating net UI & Incentive differently than other tariff elements is not appropriate.
- At present, NTPC is working out income tax for the Company as a whole after consider tax holidays, higher depreciation from new units.
- Tax benefits under Section 80 IA to promote investment is also directly passed on to beneficiaries.

TAX ON INCOME CONTD.....

- **Presently, tax calculation for the Co. as a whole, allocation to stations and recovery from beneficiaries is a simple full proof mechanism without any dispute.**
- **With the proposed regulation, cost allocation for UI and incentive itself could be a reason for dispute. Further, at present, there are many expenditures which are incurred by the utilities but not covered by tariff (higher O&M cost, depreciation on capital expenditure not allowed in tariff etc.) which reduces the profit of the company and income tax liability. Any such reduction in income tax liability in future will have to be to the account of the generating company only.**
- **NTPC proposes that existing methodology of pass-through of income-tax be retained.**

TARGET AVAILABILITY – GAS STATIONS

- CERC has proposed 85% availability for gas stations.
- **In case of less availability of primary fuel, DC has been linked to MW scheduled by beneficiary in any time block which will virtually make recovery of fixed charges of gas station on Scheduled PLF**
- **Actual availability on various fuel is given below:**

Availability (%)	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09
Gas(APM+PMT)	52.6	54.08	57.91	54.56	48.42	45
RLNG				17.18	20.64	17
Liquid	30	30.71	30.92	15.87	13.84	23
Total	82.59	84.79	88.83	87.61	82.88	85
PLF	67.06	68.5	69.20	71.79	68.06	64

DC / SG DATA of First 6 months of 2008-09			
Station	Average DC on all the fuels during Peak Hours(6-10 PM)	Max. SG in any Time Block of Peak Hours (6-10 PM))	Difference between Average DC and Max. SG during Peak Hours
	A	**B**	**A-B**
Anta	78.33%	64.68%	13.64%
Auraiya	84.56%	60.99%	23.57%
Kawas	91.18%	59.56%	31.61%
Gandhar	80.36%	71.34%	9.02%
Faridabad	84.56%	72.58%	11.98%
Dadri	87.30%	75.39%	11.91%

TARGET AVAILABILITY – GAS STATIONS CONTD.....

- Based on operating data of NTPC Gas Stations of 6 years annual station-wise PLF is in the range from as low as 47 % to 84%. It has not even once in any station crossed 85%.
- With APM gas availability reducing to less than 50%, capacity around 30% – 35% is available on costly fuel i.e. RLNG & Liquid fuel.
- Target Availability should be based on Availability as per ABT principle and not on Scheduled Generation
- If the existing DC norms are changed to actual schedule generation then full recovery of fixed charges is not possible in any of the station.
- Past record indicates that 14% to 20% of DC is not scheduled due to high fuel cost.
- Even during peak hours a minimum of 9 – 32% of DC remain un requisitioned.
- Under the proposed methodology of DC calculation, gas stations will achieve a availability of hardly 60-70%.
- There will be loss of availability to the extent of 9% to 32% compared to existing methodology.
- If target availability is linked to schedule PLF, it should be linked to availability of APM/PMT gas and be fixed at 48%.

TARGET AVAILABILITY – GAS STATIONS CONTD.....

PLF of NTPC Gas Stations since 2004-05

(%)

STATION	2004-05	2005-06	2006-07	2007-08
ANTA	76	76	80	74
AURAIYA	71	74	79	70
DADRI	75	74	77	72
KAWAS	49	50	63	64
JHANOR	70	78	79	69
FARIDABAD	84	78	75	70

TARGET AVAILABILITY – GAS STATIONS CONTD.....

- GAIL does not allow more than +/- 5 % change in flow to take care of Pipeline pressure and supply to other customers.
- Even if cheaper APM gas with 48% gas availability is used during peak hours to get 100% schedule, Gas stations will operate at
  - 100% load for 8hours
  - 25% load for 16 hrs.
- Low load operation during 16 hours will result in very high heat rate, economically unviable.
- Frequent start/stop will lead to failures, High Cost of operation, Cyclic loading, Increased APC
- The arrangement would end up producing far less energy, which is not desirable under power deficit scenario and scarcity of Fuel.
- All gas stations have completed 15 years of life. Gas turbines are being taken out under shut down for long duration to carry out R&M. Ageing of gas turbines is also resulting in increased forced outages.
- NTPC Proposes - Retain 80% (DC) for Gas stations based on existing methodology of declaration on all type of fuels
- Reduce Target AV to 75 % for Gandhar (Average availability of the station for the last three years)

AVAILABILITY – COAL STATIONS

- CERC increased Availability Norm based on past performance and UMPP target availability
- UMPPs Target AF is not 85% but 80% despite being new units on super critical technology
- Farakka in last five years never achieved 85%, rather in two years it attracted disincentive
  - low CW intake level as a result of Indo Bangladesh Agreement and coal quality as well as availability problem.
- Kahalgaon will be facing severe coal shortage in coming years.
- TTPS : 35 years' old station
- BTPS : Units outlived its life. 2x 210 MW units R&M will reduce station availability
- Target Availability of Tanda and Talcher have been revised recently in 2007.

NTPC Suggestions -

- Retain 80% for Coal Stations
- Reduce AF to 75% for BTPS, Farakka and Talcher

HEAT RATE – 500MW

- **While proposing reduction of Heat Rate from 2450 kcal/Kwh to 2400 Kcal/kWh CERC has considered only new units like Simhadri, Talcher II and Rihand II which was about 2362 kCal/kWh.**
- **NTPC has 27 units of 500 MW.**
- **Many of these units are around 20 years old. Design heat rate of older units is much higher than the heat rate of the new units.**
- **Actual operating heat rate data of the older units was not available with the Commission as these units are located in stations having 200 MW units and hence not considered while fixing norms.**
- **NTPC has segregated the heat rate of 200 MW & 500 MW units based on the design heat rate of 200 & 500 MW units and their installed capacity.**
- **In case of Rihand station, we have 2 Nos. units which are having electrical driven BFP and all other 25 units have turbine driven BFP.**
- **Actual heat rate for the balance 25 Nos. of 500 MW units is 2389 kCal/kWh and the heat rate for the older units is 2403kcal/kWh**

HEAT RATE – 500MW CONTD.....

Actual Heat Rate of 500 MW for 3 Years		
Station	**Units**	**Heat Rate**
Singrauli	2	2373
Korba	3	2384
Ramagundam	3	2432
	1	2379
Farakka	2	2448
Rihand-II	2	2355
Vindhyachal	2	2361
	2	2399
Simhadri	2	2364
Talcher	2	2415
	4	2365
Average		2389

Future Scenario (Tariff period 2009-14)

- Coal Quality Deterioration on account of
  - Deterioration in quality of coal from the linked mined
  - Supplementing coal from non linked mines (to the tune of 27% - 55%).due to short fall in fuel supply
  - "COAL DIRECTORY 2006-07" by the Ministry of Coal, also corroborates
    - Coal Quality got deteriorated from 2004-05 to 2008-09 by 500 Kcal/Kg in GCV (Moisture/Ash Content by 2.3 % & 6% respectively)
  - Deterioration in coal quality during the next tariff period, will result in decrease in Boiler efficiency by around 1.0 %
  - Coal from non-linked mines is generally of inferior quality and will result in reduction in GCV of coal by another 275 Kcal/Kg (0.5 % reduction in Boiler efficiency).
  - Net effect works out to be 1.5 % decrease in Boiler efficiency which amounts to an increase in the heat rate by 35-40 Kcal/kwhr
- Ageing Loss: The average heat rate deviation due to ageing in the coming 5 years would be 12.5 Kcal/kWh per year
- NTPC proposes to retain the norms of 2450 Kcal/kWh for 500 MW Units during the coming tariff period.

HEAT RATE

660 MW - Norm fixed at 2350 kcal/Kwh

NTPC Views

Station	Cap.	Units	TGHR	Blr effi.	Design
Sipat	660	3	1904	86.27	2207
Barh	660	3	1889	84.92	2225

- Taking an operating margin of 8.5% (same as proposed for 500 MW Units), NTPC proposes that the norm may be fixed at 2400 Kcal/Kwh and can be reviewed after actual operation

BTPS

- Revised from 2885 to 2825 Kcal/Kwh

NTPC Views

- 3 x 95 MW outlived its design life and no R&M activities are planned for it. Hence the heat rate will further deteriorate
- 2x210 MW units will undergo R&M for Life Extension during the tariff period, which will hamper both its availability and heat rate.
- Effect of deterioration in Coal Quality and ageing loss will increase the operating heat rate by 52.5 Kcal/kwh
- NTPC proposes to retain BTPS heat rate at 2885 Kcal/Kwh.

HEAT RATE – GANDHAR GAS

- **The existing heat rate norm of Gandhar, 2000 Kcal/Kwh was fixed in 2004 based on actual heat rate prior to 2004**
- **Prior to 2004, at Gandhar, gas availability was lower hence station was running at lower PLF, because of which water injection was not being carried out.**
- **Now gas availability (including RLNG) has increased to provide higher output.**
- **Water injection is being done resulting in deterioration in heat rate. Gandhar is having water injection for NOx control as well as for capacity.**
- **With design Heat Rate of 1995 Kcal/ Kwh, the present actual Heat rate for the year 2007-08 is around 2030 Kcal/Kwh.**
- **Further, the norm should provide for degradation of machine with ageing.**
- **NTPC proposes that Gandhar normative Heat rate may be fixed At 2080 Kcal/Kwh (2030 +50)**

SP. OIL CONSUMPTION

- **Coal quality deterioration**
  - **Variation in coal VM results in combustion instability requiring oil support**
  - **Increased erosion of coal burners causes flame instability**
  - **Increase in number of trippings on flame failure.**
  - **Increased erosion of pressure parts leading to more no of unit outages due to tube leakages.**
  - **Frequent soot blowing with proper ignition support.**
- **To prevent the unsafe operation (explosion) of boiler continuous oil support is to be kept in service as per NFPA 85 D code on Boilers under such conditions.**

SP. OIL CONSUMPTION

- R&M of 200/210 MW units involve commissioning activities and stabilization.
- Boiler is designed for coal from linked mines. Currently, percentage of coal from unlinked mines had increased to 27% - 55%. Coal from non linked mines is generally of inferior quality
- NTPC Proposal -
- In view of the above, norm of 1.5 ml/Kwh for sp. oil may be fixed for 500 MW & 200 MW units.
- For BTPS, the existing norm of 2.6 ml/kwh may be continued

AUX. ENERGY CONSUMPTION

Increase in Auxiliary power consumption is expected due to

- **Coal Quality has deteriorated with increasing Ash Content and Moisture Content from 03-04 and is expected to deteriorate further as predicted by MOC.**
- **Poor coal quality leads to increase in auxiliary power due to**
  - **extra mill requirement**
  - **higher coal handing**
  - **Higher ash handling**
  - **higher air flow handling**
- **Unit tripping due to poor coal quality are on increase.**
- **APC also Increases with ageing, part load operation.**
- **Auxiliary Energy Consumption as % of generation level is not appropriate as PLF is likely to go down with non-availability of coal. At present there is large coal shortage leading to partial loading & higher APC**
- **NTPC proposes that existing norms may be continued for 2009-14.**

U I CHARGES

- **Variation on both positive & negative sides are intrinsic of operation, the generator will be at loss and has to pay at Rs. 10 and receive at Rs. 4.06 Rs./Kwh.**
- **UI loss of one hour of one tripping of one 500 MW unit will be compensated only if the unit is run continuously on 101% DC for 11 days.**
- **Implication of large UI will put generator's approach in declaring DC conservative, defeating very purpose of ABT.**
- **Income tax to be born by Generator will effectively increase variable cost of 170 P/Kwh by 80P/Kwh to 250 P/Kwh. With UI ceiling rate at 406 P/Kwh, generator will not have any incentive for higher generation.**
- **Putting an artificial cap on UI charges distort commercial mechanism and goes contrary to the purpose of maintaining Grid Frequency.**
- **NTPC Proposal - No cap on UI for generators. Cap of 101% of DC may be removed as long as DC is more than installed capacity less normative APC.**

UI ACCOUNTING

- **Presently UI accounting for multi-stage stations is done stage-wise separately**
- **This requires stage-wise segregation of ex-bus generation**
  - **Such segregation is most often notional as accurate segregation of common auxiliary consumption would involve substantial additional metering and complicated energy accounting**
  - **The UI rate of all units at a station is same.**
  - **Segregation of stage-wise gen. only increases metering cost without serving any useful purpose**
  - **DC and SG can be separately given stage wise**
  - **NTPC proposes that UI accounting can be common for the station based on actual ex-bus generation of the station and combined scheduled generation of different stages of the station.**

INCENTIVE

- With proposed increase in Availability norm from 80% to 85%, the quantum of energy/availability for incentive is reduced.
- Moreover, with Income Tax on incentive to be borne by NTPC, effective rate of incentive has reduced.
- Existing regulation provides 25p/kWh on Scheduled PLF.
- With new proposal the effective rate for will be 21.5 p/kWh for coal stations.
- NTPC will be eligible for lower incentive
- NTPC proposes that incentive for stations having age less than 10 years should also be on pro rata basis

CUT-OFF DATE

- **Many services/systems like administrative office, township, road, buildings, ash dyke, and off-site etc are not required at the time of COD**
- **Similarly 100% initial spares are not needed at the time of COD or by cut off date. Beneficiaries are deferring the servicing this cost at later date**
- **Results in reduction of Commissioning time and hence IDC**
- **NTPC proposal - Cut off date concept can be dispensed with, so long as expenditure is within original scope of work**
- **If CERC insists for cut off date it should be 31st March of the fifth year excluding the year in which station COD was achieved**
- **Works which have already been approved for efficient and successful operation of the generating station as per the existing provisions of tariff regulation the same should be allowed to form part of the Capital Base for tariff purposes as and when it is completed**
- **Further, following items needs to be allowed after cut-off date:**
  - ***original scope of work awarded before cut-off date and being implemented after cut off date.***
  - ***Deferred liability for works implemented prior to cut off date***
  - ***Replacement of assets due to obsolesce***
  - ***Works for efficient operation of the plant***

RENOVATION & MODERNISATION

First Option – Full scale R&M

- Proposal of consent from beneficiaries on DPR shall be never ending process
- CEA as an independent Apex technical expert body in the power sector, should approve the DPR
- Clarification is enquired that accumulated depreciation in excess of loan repayment shall not be considered as deemed repayment in 1st year for R&M
- CERC should clearly specify tariff principles with respect to capital cost, depreciation, return, loan etc in the regulation for servicing of R&M expenditure on schemes approved by CEA
- CERC has proposed that any capex will be allowed after writing off original amount of replaced assets and deducting accumulated depreciation already recovered from original project cost
- CERC has sought to adjust both the original value of asset as well as accumulated depreciation. This appears to be on account of typographical error. May please amend this clause to read

  ….. and after writing off the original amount of the replaced assets and deducting the accumulated depreciation already recovered on the replaced assets from the cumulative depreciation recovered in tariff

Second Option–Special Allowance in Rs. Lac/MW

- **CERC proposal of Rs 5 lac/MW is too low**
- **NTPC suggests special allowance of Rs.8 lac/MW/yr with annual escalation provision.**
- **Change over from option 2 to option 1 should be permitted (say after 5 years) as at some stage major CAPEX may become necessary**
- **Stations whose R&M is under implementation after approval of CEA and would be serviced through tariff in 2009-14 has to be governed by applicable regulations for 2004-09 period.**
- **If CERC does not permit switchover option, special allowance required will be Rs. 29 lac/MW for servicing of R&M expenditure of 1.6 Cr/MW in 15 years extended life.**

SALE OF URS

- **Existing 2004-09 Regulations [Note 2(ii)] had a provision of sale of Un-requisitioned Surplus (URS) power through bilateral arrangement by Generator also.**
- **This has been deleted in Draft 2009-14 Regulations. This needs to be retained.**
- **There are many occasions when the frequency is around 49Hz but at the same time, there is large quantity of URS.**
- **To ensure optimum utilisation of URS, simple procedure needs to be evolved.**
- **NTPC proposal –**
  - **All URS data to be made available at RLDCs and NLDCs' websites.**
  - **Any beneficiary's need of power should be scheduled out of the URS directly by RLDC with the option to the original beneficiary for rescheduling power as per Scheduling mechanism as and when required.**
  - **There should be flexibility in scheduling URS power, in line with what is available for the allocated power**

HYDRO TARIFF – NEW HYDRO POLICY

Benefit of New Hydro Policy

- **New Hydro Policy / Tariff Policy provides for following benefits applicable for competitively bid projects for IPPs**
  - **13% free energy**
  - **100 units free energy for 1st 10 yrs to Project affected families.**
  - **10% contribution towards RGGVY project in the affected area**
  - **cost of approved R&R plan in conformity with National R&R Policy :**
- **CERC has allowed in the proposed regulation for recovery of above provisions through tariff**
- **After the notification of new Hydro Power Policy, state govts. are insisting on benefits as outlined in the new policy for projects being awarded on MOU route to CPSUs also.**
- **NTPC proposes that benefits as prescribed in new Hydro Power Policy wherever provided, should be considered for determining tariff of CPSU hydro projects also.**

HYDRO NORMS: HYDROLOGICAL RISK

- **CERC has dispensed with the concept of Capacity Index for recovery of fixed charges.**
- **Now the entire fixed charges (both capacity charge & variable charge) are linked to water availability, thereby passing on the entire risk of water non-availability to generator.**
- **prediction of design energy is done on historic data it is probabilistic rather than deterministic.**
- **In case of low rain fall in any particular year, particularly during the initial years of the project, generator will not be able to recover the full fixed charges and it will only lead to difficulty in debt servicing.**
- **It has been a consistent policy of the GOI to pass through the hydrological risk.**
- **Change in this concept will discourage investment in hydro sector.**
- **NTPC proposes for continuation of the concept of Capacity Index. Further, if it is decided to pass on the hydrological risk to the generator, it should be made applicable only to the projects approved after 1.4.2009.**
- **Normative plant availability factor for Run of the River Project should be at 85% PLF corresponding to design availability.**

HYDRO NORMS: DESPATCH RISK

- A large part of the (50 or 30%) of fixed charges are recovered through variable charge.
- As a result, variable cost of new hydro station could be as high as Rs.1.50 to Rs.2 per unit.
- During low demand period, such stations may not get full despatch schedule resulting in spillage of water
- NTPC proposes that hydro stations need to be accorded must run status and scheduled full irrespective of their variable charge position in merit order.
- Deemed generation on account of non-availability of transmission network and grid disturbance needs to be allowed for hydro stations.

THANK YOU

HEAT RATE – 500MW CONTD.....

The actual operating heat rate as calculated considering the deviations that are unavoidable due to various operating parameters.

Parameter	OLD Units	NEW Units
Design Heat rate (kcal/kWh)	**2268.00**	**2233.00**
Deviations (kcal/kWh)		
Main Steam Temperature	2.09	2.57
Re heat steam temperature	2.51	4.18
SH Spray	4.25	4.03
RH Spray	10.08	13.69
Condenser Vacuum	9.31	7.70
Make up water consumption	13.61	11.65
Boiler Efficiency	22.91	18.31
Ageing	59.30	14.40
Turbine Cylinder Eff loss		36.60
Loss in Piping	11.34	22.33
Actual Heat rate	**2403.4**	**2368.46**