

CHAPTER XI: MINISTRY OF POWER

Damodar Valley Corporation

11.1 Loss due to delay in lodging of claims with Railways

The Corporation suffered a loss of ₹ 5.24 crore due to delay in lodging claims with the Railways for undelivered coal wagons.

Damodar Valley Corporation (Corporation) is engaged in generation and distribution of power mainly through its coal based Thermal Power Stations (TPS). The Corporation procures coal from Government Companies under a fuel supply agreement. Coal is transported to the respective TPS either by road or by rail. Railways on acceptance of goods, issue a Railway Receipt (RR) which is evidence of weight and number of packages therein. The consignment is delivered on surrender of such RR. Railways are responsible for loss, damage or non-delivery of consignment arising from any cause except force majeure clause. However, as per provisions of section 106 (1) of the Railways Act 1989 (RA), any claim for compensation against Railways for the loss or non-delivery of goods would not be entertained unless a notice is served to railways within a period of six months from the date of entrustment of the goods. In case, Railways do not settle any claim within a period of three months, an application may be filed against them before the Railway Claims Tribunal (RCT) within a period of three years from the date of entrustment of the consignment.

Audit observed that during the period from July 2010 to December 2010, Mejia Thermal Power Station (MTPS) of the Corporation did not receive 303 number of wagons containing coal valued at ₹ 4.40 crore. Claims for such undelivered wagons were not lodged within the required six months period from the date of issue of RR, as a result of which Railways rejected these claims as per provisions of RA. Similarly, at the Durgapur Thermal Power Station (DTPS), Audit observed non-delivery of 58 wagons entrusted to Railways in August 2011 containing coal amounting to ₹ 0.84 crore. While filing (December 2011) claim with the Railways, DTPS gave incorrect RR number against which coal had already been received. As a result, Railways rejected the claim. Later when the Corporation requested (July 2013) for rectification of mistake and re-opening of the case, Railways rejected (August 2013) the claim as time-barred. Audit further observed that the stipulated time (July 2013– August 2014) for filing an appeal against the above rejections relating to both MTPS and DTPS before the RCT had also expired. Thus delay in filing claims resulted in a loss of ₹ 5.24 crore¹ to the Corporation.

Management stated (October 2015) that claims were lodged with Railways through Registered Post within stipulated time frame of six months from the dates of issuance of RR but same were registered/acknowledged by Railways after a lapse of about 15-20 days from the date of receipt at their end, thereby making the claims as time-barred. Management also stated that as per Railways website the claims were still under

¹ ₹4.40 crore + ₹0.84 crore

processing, making the matter confusing and misleading to the Corporation and they were considering filing appeal before the RCT. Ministry also endorsed (February 2016) the above views of the management.

Ministry/Management's contention was not tenable because as per provisions of RA, a person was not entitled to a claim for non-delivery of goods carried by Railways unless a notice thereof was served to Railways within a period of six months from the date of entrustment of such goods. In the cases highlighted above, the claims were merely dispatched by the Corporation without ensuring receipt of the same by Railways within the stipulated period. Management's contention on confusion relating to the status of claim was also not tenable as Railways had already communicated about the rejection of these claims. The stipulated time for filing an appeal before the RCT had also expired in respect of these claims leaving no scope for recovery.

Thus, due to delay on the part of management in lodging claims for undelivered coal wagons, the Corporation had to suffer a loss of ₹ 5.24 crore.

Power Finance Corporation Limited

11.2 Wilful negligence leading to sub-standard asset

Decision to relax pre-disbursement conditions, disregarding the provisions of CLA and regularising payment of interest by way of IDC funding against the backdrop of uncertainties surrounding a project, led to risky loan exposure of ₹ 239.36 crore and consequent sub-standard asset.

M/s Power Finance Corporation Limited (the Company) sanctioned (October 2011) a term loan of ₹ 1150 crore to M/s Jas Infrastructure & Power Limited for setting up a 1320 MW thermal power plant at Banka District in Bihar. The project was funded on a debt equity ratio of 80:20 by a consortium of 11 lenders (including the Company) led by Axis Bank. The total project cost was estimated at ₹ 7400 crore comprising senior debt of ₹ 5550 crore, sub debt of ₹ 370 crore and equity of ₹ 1480 crore. The Company, in its part, has made disbursement of ₹ 239.36 crore between February 2013 and February 2015, which included funding of Interest During Construction (IDC) of ₹ 53.54 crore. The project activities were stopped (September 2012) due to failure of the promoters to mobilise funds and institution of an investigation by Central Bureau of Investigation (CBI) against the promoters. Finally, due to non-payment of outstanding dues by the borrower, the loan was classified (October 2015) as sub-standard asset.

Audit observed that the Company disbursed ₹ 185.82 crore towards first disbursement on 28 February 2013, while the loan was sanctioned on 14 October 2011. Between the period of loan sanction and first disbursement, there occurred significant events, which warranted a cautious approach from the Company towards the loan disbursements. However, such an approach was lacking and minimum level of financial prudence and commercial diligence in decision making was not evident. In June 2012, *i.e.*, after eight months of sanctioning loan and about nine months before first disbursement, a CBI investigation was instituted against the promoters of the project for fraudulently obtaining coal block, and an FIR against the promoters was filed on 3 September 2012. The borrower himself

admitted that CBI enquiry caused tremendous hardship to mobilize funds through IPO (as envisaged) or by identifying strategic partner(s), which impacted project implementation and in effect, the project was at a standstill since September 2012. The Company went ahead and disbursed ₹ 185.82 crore in February 2013 and further disbursement by way of IDC funding against payment of interest (₹ 53.54 crore) up to February 2015, even relaxing the already fixed pre-disbursement conditions.

The Company stated (June/November 2015) that in private sector loans where it was not the lead lender loans were disbursed on the advice of the respective lead lender, as per the policy of the Company and procedure laid down in Common Loan Agreement (CLA). All the facts regarding CBI investigation were brought to the notice of competent authority before making disbursement and in order to mitigate the risk of de-allocation of coal block and to safeguard interest, additional security conditions were insisted upon. It was further added that as per available records, all disbursements including disbursement against IDC were made after ensuring safeguards and after obtaining approval of competent authority, on compliance with conditions prescribed by lead lender and as per provisions of CLA.

The reply is, however, to be viewed against the fact that though the loan was disbursed to the borrower under consortium, process of loan application, assessing adequacy of security, eligibility of borrower, loan exposure risks, general as well as special terms and conditions, decision regarding loan disbursement, etc. were to be made in accordance with the instant policy and procedure of the lender. Clause 11.2 of CLA provided that the Company should satisfy itself on the fulfilment of pre-disbursement conditions stipulated in CLA like clause 11.2.1 (upfront equity of 30 *per cent*), clause 11.2.2 (entire tie up for equity), clause 11.2.6 (coal requirement), and clause 11.2.7 (sale of power, power evacuation, etc.). CLA also empowered the Company in clause 13.15 to withhold disbursement at any point of time, irrespective of whether any disbursement were made by the lead lender or by other lender(s), if in its opinion, there occurred any event that adversely affects the viability of the project. However, these safeguards were ignored and waived, which was unwarranted and not justifiable. Against the backdrop of CBI investigation and uncertainties surrounding the project, the Company's decision to disburse loan came when the project was at a standstill (as of November 2012, physical progress of the project was 28.81 *per cent*, incurring ₹2698.62 crore), and as per available records, the project did not move further (January 2015), thus leaving open scope for diversion of loan disbursal by the promoters. Further, the loan was placed under Standard category by financing IDC relaxing the pre-set conditions and such relaxations were even granted after cancellation of coal block by the Hon'ble Supreme Court of India.

Thus, decision to relax pre-disbursement conditions, disregarding the provisions of CLA and regularising payment of interest by way of IDC funding against the backdrop of uncertainties surrounding a project, led to risky loan exposure of ₹ 239.36 crore and consequent sub-standard asset.

The matter was reported to the Ministry in December 2015; their reply was awaited (March 2016).

11.3 Injudicious decision leading to substandard asset

Failure to correctly assess the risks involved in using unsecured loan for project funding and release of disbursements waiving the pre-commitment conditions without matching physical vis-a-vis financial progress resulted in the loan of ₹24.55 crore becoming sub-standard.

M/s. Power Finance Corporation Limited (PFC) sanctioned (April 2012) a term loan of ₹ 26 crore to M/s Swarnajyothi Agrotech & Power Limited for setting up a 10 MW Biomass-cum-Thermal Power Project at Sambalpur district in Odisha. Loan sanction letter, *inter-alia*, contained two sets of conditions, *viz.*, (i) pre-commitment conditions¹ that the balance term loan (₹10.40 crore) was to be tied up with other Financial Institution(s) (FIs) and (ii) pre-disbursement conditions² that the upfront equity of ₹ 5.82 crore was to be brought in along with additional amount of ₹ 10.50 crore. The Facility Agreement was signed in October 2012 and ₹ 24.55 crore was disbursed/adjusted between November 2012 and October 2013. However, on account of continued default by the borrower since April 2013, the loan became sub-standard in April 2014.

Audit noted that PFC allowed (October 2012) the borrower to source the balance debt of ₹ 10.40 crore through an unsecured loan as the loan sanction from State Bank of Hyderabad (SBH) for ₹ 10 crore had expired. PFC, despite knowing that the borrower did not comply with the pre-commitment condition of having complete financial tie-up, and without correctly assessing the risk involved in using unsecured loan for project financing, disbursed ₹ 17 crore in November 2012. It may be noted that unsecured loan has inherent risk that has potential to seriously affect project completion. In the instant case, project activities were affected as the borrower had to take another unsecured loan from the EPC Contractor of the project to repay the first unsecured loan. The EPC Contractor also stopped supply of plant and machinery demanding repayment of his unsecured loan. As a result, the project activities stopped in August 2013.

It was also noticed that Rural Electrification Corporation Limited (REC), who was considering a loan application for the project, opined (September 2013) that the progress of the project was not matching with the equity infused and amount disbursed by PFC, and declined to extend loan facility to the project. It was also noticed from the progress report furnished by Lenders' Engineer for the month of February and August 2013 that the progress of the work was unsatisfactory. On the other hand, PFC, without looking into the physical progress *vis-a-vis* financial progress, disbursed/adjusted further amount of ₹ 7.55 crore between March and October 2013. Thus, PFC disbursed loan instalments without giving due cognisance either to the pre-commitment conditions or to the physical progress, which was not justified.

PFC stated (November 2015) that the borrower was in advance stages of tying up the balance loan with Bank/FIs and in order to expedite the financial closure, it had permitted to bring in unsecured loan till sanction of loan from Bank/FIs, after stipulating additional

¹ *The obligations of PFC to commit financial assistance shall become effective upon complying with these conditions.*

² *The obligations of PFC to disburse funds sanctioned become effective upon complying with these conditions.*

pre-commitment and pre-disbursement conditions and the financial closure was considered to be achieved after infusion of unsecured loan. It also added that the loan was sanctioned as per policy and disbursement was made after borrower fulfilling all conditions of disbursement. Regarding unsatisfactory progress, PFC stated that delays were not extremely rare especially for power projects, and keeping in view the facts reported by Lenders' Engineer in May and August 2013, it had stopped cash disbursement since then.

The reply is to be viewed against the fact that PFC waived the requirement of financial tie-up and disbursements were made at a time when the borrower was finding it difficult to achieve financial closure consequent to expiry of loan sanction from SBH and denial of loan by other FIs/REC. Thus, it cannot be accepted that the borrower was in advance stages of financial closure and had complied with all the conditions of loan sanction. The decision of PFC to bring in unsecured loan landed the project in deep trouble.

Thus, disbursement of loan in violation of the pre-commitment conditions resulted in the loan of ₹24.55 crore becoming sub-standard and the project being stranded.

The matter was reported to the Ministry in December 2015; their reply was awaited (March 2016).

North Eastern Electric Power Corporation Limited

11.4 Loss due to under-recovery of fuel cost

Failure of the management in ensuring accuracy of important data submitted for fixation of tariff result in a loss of ₹ 28.32 crore.

In terms of the Central Electricity Regulatory Commission (CERC) (Terms and Conditions of Tariff) Regulation 2009, tariff for supply of electricity from a thermal generating station for the tariff period 2009-14 would comprise of capacity charges (for recovery of annual fixed cost) and energy charges¹ (for recovery of primary fuel cost).

The CERC had specified the operational norms for the tariff period 2009-14 after considering the actual average based on past performance of the generating stations during 2004-05 to 2006-07. Thus, normative Gross Station Heat Rate (GHR) for a power station was fixed by the CERC based on the operational parameters achieved by different generating stations during the past period.

Based on the above principles, the GHR (kCal/kWh²) for two power plants of North Eastern Electric Power Corporation Limited (company) i.e. Assam Gas Based Power

¹ The energy charges rate (ECR) in rupees per kWh for gas fuel based station would be calculated as per the following formula

$$ECR = GHR \times LPPF \times 100 / \{CVPF \times (100 - AUX)\}, \text{ where}$$

GHR = normative gross station heat rate

LPPF = landed price of primary fuel

CVPF = gross calorific value of primary fuel as fired

AUX = auxiliary consumption

² Kilo calorie per kilo watt hour

Plant (AGBPP) was notified by CERC as 2400 (for combined cycle) and for Agartala Gas Turbine Power Plant (AGTPP) as 3500 (for open cycle). The energy charges for the ensuing period i.e. 2009-14 would have been calculated and recovered from the beneficiaries of the power supplied by the Company on the basis of the above GHR.

It was observed in audit that the company while submitting (April 2008) operational data to the CERC, erroneously furnished 'Weighted Average Net Calorific Values of fuel' as 'Weighted Average Gross Calorific Values of fuel' leading to fixation of GHR by the CERC at lower rates. As a result, the landed cost of fuel had not been fully recovered by the Company under the recovery mechanism prescribed by the CERC for AGBPP and AGTPP in 2009-10 and 2010-11.

After noticing the error, the Company filed a petition (26 May 2011) for revision of heat rate norms with retrospective effect from 01 April 2009, so that the landed cost of fuel would be fully recovered from the beneficiaries. CERC, on examining the submission of the Company and the beneficiaries, revised the normative GHR (kCal/kWh) as 2500 for AGBPP and 3700 for AGTPP prospectively i.e. from the date of filing the petition for revision of tariff (26 May 2011). The CERC, however, did not allow recovering the revised cost of fuel with retrospective effect from 01 April 2009 opining that the Company would not be allowed to take advantage of its own mistake.

It was observed in Audit that due to non-admission of the petition for revision of normative GHR with retrospective effect because of negligence on the part of the management in submission of data to the CERC, an amount of ₹ 28.32 crore could not be recovered towards energy charges from the beneficiaries during the period from 2009-10 to 2011-12 (upto 25 May 2011).

Management stated (December 2015) that the mistake was an oversight and occurred due to non-specific nature of information available at the time of submission of data and not due to negligence. It was contended that the CERC in its wisdom gave effect to the revised SHR¹ from the date of petition on which the Company had no control and the under-recovery may not be termed as loss because the same was not an absolute figure but dependent on the normative SHR fixed by CERC. Management also stated that they had submitted another review petition before the CERC on 23 January 2014 seeking further relaxation of the norms with effect from 01 April 2009 and the same was under process.

Management's contention was not acceptable as ensuring correctness of data which was directly linked to the revenue generation was the basic responsibility of the management. Management's contention that the CERC in its wisdom gave effect for the revised SHR from the date of petition and the under-recovery cannot be termed as loss were not based on facts because management themselves admitted that fuel cost was not fully recovered because of the mistake in submission of information. Further, the Management's petition (23 January 2014) for further revision of tariff retrospectively from 01 April 2009 was also rejected by CERC vide its order dated 05 February 2016.

¹ *Station heat rate*

Thus, failure of the management in ensuring accuracy of important data submitted for fixation of tariff resulted in a loss of ₹ 28.32 crore to the Company.

The matter was reported to the Ministry in December 2015; their reply was awaited (March 2016).

NTPC Limited

11.5 Renovation and Modernisation of NTPC Power Plants

There was a total delay of three to 109 months in completing activities relating to R&M works in 19 out of 20 schemes selected for audit in nine power stations. Out of 335 contract packages, only 197 contract packages were awarded, 107 of these packages were completed of which 41 were delayed. This led to reduced tariff recovery of ₹ 199.65 crore in four power stations and refund of tariff with interest of ₹ 23.42 crore. Avoidable or extra expenditure of ₹ 47.13 crore, generation loss of ₹ 269.78 crore due to defective systems, excess coal consumption of ₹ 881.89 crore due to poor thermal efficiency, generation loss of ₹ 489.29 crore on account of forced outages and non-adherence to environment norms due to non-completion of projects in time even after their initiation were also noticed.

11.5.1 Introduction

NTPC Limited (NTPC) formulated (May 2002) a Renovation and Modernisation (R&M) Policy with the objective of sustaining improved performance of power plants and to extend their useful life. Accordingly, R&M activities of 18 power stations¹ were planned to be carried out during 2004-19 and ₹8327.40 crore was sanctioned between July 2007 and March 2015 (*except* Anta power station in July 2004). The R&M activities were reviewed in audit in order to assess (i) compliance with R&M policy in conceptualising, awarding and implementing R&M activities, (ii) efficiency, economy and effectiveness in execution of the contracts, (iii) effectiveness of monitoring of R&M activities and (iv) reasons for slippage, if any, in meeting targets affecting operations of power plants.

11.5.2 Scope of audit and sample

Audit selected nine² out of 18 power stations where R&M activities were being carried out based on their age, investment approval, expenditure incurred and the need for wider coverage across the country by adopting systematic random sampling through Interactive Data Extraction and Analysis (IDEA) software. Table-1 below indicates details of overall R&M activities and Table-2 indicates R&M activities reviewed in audit:

¹ Korba STPS, Rihand STPS, Vindhyachal STPS, Kawas GPS, Auraiya GPS, Jhanor-Gandhar GPS, Dadri Gas, Dadri TPS, Anta GPS, Badarpur TPS, Simhadri STPS, Talcher-Kaniha STPS, Talcher TPS, Ramagundam STPS, Kahalgaon STPS, Singrauli TPS, Farraka TPS and Unchahar TPS

² Korba STPS, Singrauli STPS, Ramagundam STPS, Farakka STPS, Badarpur TPS, Dadri TPS, Dadri GPS, Jhanor-Gandhar GPS and Anta GPS

Table-1: Overall R&M activities

	Number of power stations	Number of R&M schemes	Investment approval (upto March 2015) (₹ in crore)	Budgeted expenditure (April 2007 to March 2015) (₹ in crore)	Actual expenditure (April 2007 to March 2015) (₹ in crore)	Per cent of actual expenditure to budget (6/5*100)
1	2	3	4	5	6	7
1.	18 (Total)	34 (Total)	8327.40	4281.70	4147.02	96.85
2.	09 (Selected)	20 (Total)	5680.32	2374.32	2209.97	93.08

Table-2 : R&M activities vis-à-vis audit coverage

Scheme	Total		Selection in Audit		Percentage of selection	
	No. of schemes	Investment approval (₹ in crore)	No. of schemes	Investment approval (₹ in crore)	Schemes	Investment approval
8	9	10	11	12	13	14
Mega life ¹	16	6808.10	13	5194.13	81.25	76.29
Mid life ²	18	1519.29	7	486.19	38.89	32.00
Total	34	8327.39	20	5680.32	58.82	68.21

A total of 335 contract packages were identified in the selected 20 schemes, out of which 197 packages were awarded upto March 2015. All the 197 packages including 107 (*i.e.* 54.31 per cent) completed upto March 2015 were covered in audit.

NTPC accorded investment approval for ₹ 8327.40 crore for various schemes up to March 2015 and earmarked ₹ 4281.70 crore in budget for carrying out R&M activities from April 2007 to March 2015. The actual expenditure incurred against the budget provision stood at ₹ 4147.02 crore up to March 2015. Though NTPC has spent 96.85 per cent of overall budgeted expenditure, the year-wise and station-wise expenditure incurred varied considerably in respect of nine power plants selected in audit. While the year-wise budget utilization was more than 100 per cent in three years (2007-08, 2008-09 and 2013-14) and between 80 and 92 per cent in three years (2009-10, 2012-13 and 2014-15), the same was as low as 32.31 and 45 per cent in 2011-12 and 2010-11 respectively.

11.5.3 Audit findings

11.5.3.1 Delayed implementation of R&M activities

(a) Scheme identification and approval

As per the R&M Policy 2002, R&M activities of power plants were planned under two categories, *viz.*, mid-life and mega-life/life extension schemes. A mid-life scheme was to be initiated when a unit completed 70,000 or 50,000 operating hours in pulverised coal fired power stations and gas/liquid fuel fired power station respectively; R&M work was to be commenced when a unit completed 100,000 or 80,000 operating hours respectively.

¹ Mega-life refers to life extension of a plant when it completes 25 years or 200,000 operating hours.

² Mid-life refers to improvement in operation after a plant completes 70,000 or 50,000 operating hours for coal or gas based stations respectively

In the case of mega-life/life extensions, R&M schemes were to be initiated after completion of useful life of a unit (*i.e.*, 25 years or 200,000 operating hours for coal based power stations and 15 years or 100,000 operating hours for gas/liquid based power stations). As per the R&M Business Process 2006, implementation of schemes require three to four years and hence, the schemes were required to be initiated on completion of 21 or 11 years for coal and gas based power stations respectively. The R&M Policy 2002 and Business Process 2006 stipulated a total period of 48 months for completion of various R&M activities as indicated in Table-3.

Table-3: Timeline for completion of R&M activities

(In months)

Initiating R&M proposal by PS	Sending proposal to CO by PS	Approval of proposal by ED level EC ¹	Approval by Management	Approval by CEA	Final approval by ED level EC	Investment approval by BoD/ CMD ²	Awarding and implementation at PS	Total
0	8	8	1	8	1	1	21	48

(PS = Power Station; CO=Corporate Office; ED level EC= Executive Director level Empowered Committee)

Audit observed inordinate delay in all the stages of R&M activities from those envisaged in the R&M Policy and Business Process (**Annexure-II and III**). In almost all the power stations, schemes were not initiated after completion of specified operating hours of generating units and submitted to the corporate office. While the delay ranged between four to 38 months for initiation, the same ranged between four to 64 months for submission to corporate office. NTPC did not furnish recorded/justifiable reasons for such delays except in case of Badarpur Thermal Power Station (TPS) where it was stated (December 2015) that the delay was due to transfer of ownership of the power plant only in June 2006. However, the fact was that the management of the power plant was transferred to NTPC in April 1978 and the R&M Policy specifically stated that R&M activities were to be initiated in power plants whose management was with NTPC. Delay ranging from six months to 30 months was also noticed in approval of schemes by Executive Director level empowered committee in case of Korba STPS, Dadri TPS, Badarpur TPS, Dadri GPS and Jhanor GPS, which was attributable to revision of packages *like* deletion, changing from mega-life to mid-life and *vice versa*. This indicated that the initiation of packages were carried out without adequate assessment or those revisions were made on financial considerations than the need for R&M activities as per R&M Policy. This vitiated the purpose of identifying packages and meeting the timelines specified for the same.

Audit also observed that as against one month's time stipulated for according investment approval for schemes, NTPC delayed the same by one to 39 months. This delay was attributable to the fact that NTPC took 21 months (*from 19 January 2009 to 26 October 2010*) for finalising the strategy for claiming R&M expenditure in line with CERC Regulations 2009-14 compared to the earlier Regulations 2004-09. CERC notified the

¹ ED level Empowered Committee comprising of Regional Executive Director, Executive Director (Operating Service), Executive Director (Engineering), Executive Director (Finance) and Executive Director (Commercial)

² As per delegation of power, CMD is authorised to approve R&M proposal of any unit up to ₹150 crore.

Regulations on 18 January 2009 and NTPC appointed a committee on 6 February 2009 for formulation of strategy. Though the committee took more than seven months and submitted the strategy in October 2009, the same was placed before the Board only in October 2010. It is pertinent that this delay occurred at a time when a number of R&M works were held up for want of finalisation of the strategy. Further, though the new strategy was finalized in October 2010, investment approval for most of the packages was accorded between February 2011 and April 2013.

NTPC stated (October 2014/February and December 2015) that mid-life R&M was mentioned as first cycle of R&M and the same was not elaborated in R&M Business Process. Mid-life R&M was mainly need based and not to be construed as mandatory. In order to optimize R&M expenditure, schemes of higher priority were taken up and schemes of lower priority were deferred or deleted. In case of mega-life schemes, some critical R&M activities were taken up on priority as per needs of the power stations without waiting for finalization of the entire scheme. It was added that since the CERC Regulations 2009-14 mandated switchover to compensation allowance for mid-life R&M resulting in less availability of fund, the Empowered Committee had to prioritise schemes. R&M Policy was formulated (May 2002) for the first time primarily keeping in view the operational issues prevalent at that time and based on the operational experience of stations, the guidelines were reviewed in March 2006.

The reply is to be viewed in light of the fact that it was clearly mentioned in R&M Policy 2002 and Business Process 2006 that schemes were to be taken up after specified hours of operation for mid-life and for mega-life R&M activities. The main purpose was to achieve the objectives set for improving the performance or extending life of power stations through proper diligence process including prioritization within the specified timelines, as any delay in initiating and completing R&M would have considerable financial implication by way of increased cost of generation or extra expenditure. The delays were worked out with reference to the time earmarked for each activity in the R&M Business Process 2006, which was prepared as a supplementary document to the R&M Policy 2002. It is also pertinent to note that when a policy was in place for R&M activities, the primary responsibility was to ensure that those were adhered to so that the specific objectives were achieved. Regarding change in CERC Regulations, Audit noticed that NTPC took 21 months to finalise the strategy for claiming R&M expenditure knowing that a number of R&M packages were held up for want of its finalization, which was not justifiable. It is pertinent to note that though eight power stations had already completed more than 21 years of useful life, none of them formulated any R&M schemes due to non-formulation of strategy in view of change in Regulations 2014-19 compared to Regulations 2009-14.

(b) Tending and awarding

As per R&M Business Process 2006, the R&M packages were to be awarded within four months from the date of investment approval. Audit noticed that out of 335¹ contract packages identified for implementation, 34 contract packages were to be awarded by corporate office and 301 by regional/site offices. The corporate office awarded 18 contract

¹ *Initially 272 contract packages were involved in 20 approved R&M schemes, however, after deletion, clubbing or bifurcation, these were increased to 335*

packages with a delay of five to 55 months. Further analysis revealed that delay in issue of notice inviting tenders (NIT) ranged from two to 50 months, delay of five to 24 months was noticed in award of contract from the date of issue of NIT. Similarly, in case of packages awarded by regional/site offices, delay of one to 99 months in 149 out of 179 contract packages was noticed. Main reasons attributable for these delays were (i) changes in packages before tendering, (ii) mismatch of work schedules specified in NIT/quoted by the bidders,(iii) non-availability of units as per maintenance/capital overhauls, rolling plan,*etc.*, and (iv) frequent revision of package list of R&M schemes.

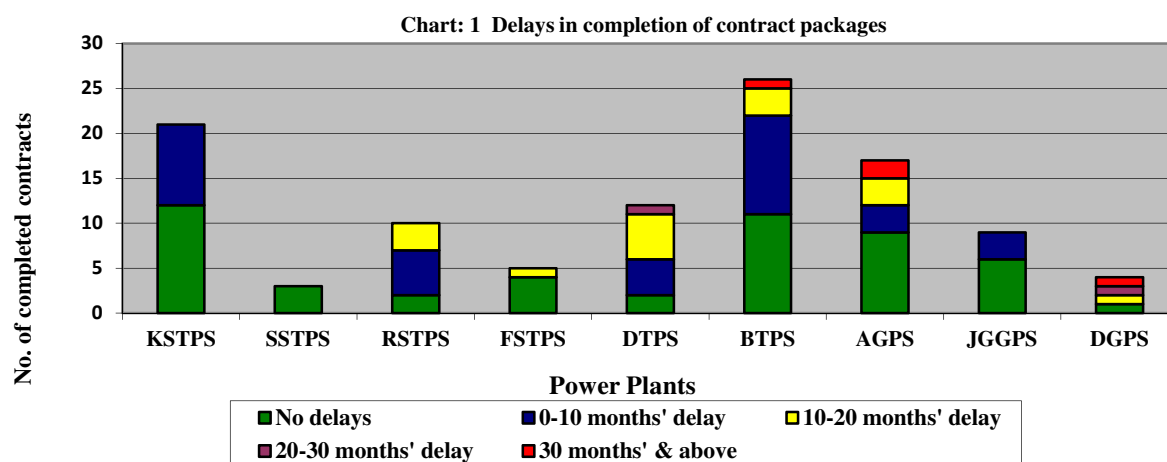
NTPC stated (February 2015) that subsequent to the issue of R&M Policy 2002, a revised policy was issued in 2006. Further, time allowed for placing awards was now governed by contract circular no. 665 dated 27 July 2012. It was further (December 2015) stated that this circular was a suggestive one and more time might be required in certain circumstances.

The fact, however, remains that R&M Business Process 2006 prescribed a time frame of four months from investment approval to award a contract, which was not complied with, and the reasons attributable for delay indicated lack of planning in initiating the R&M packages. Further, the contract circular referred to did not prescribe any time frame for activities between investment approvals to NIT. The contract circular of July 2012 prescribed 10 months for completing activities between NIT and award. There was delay ranging between one to 14 months in eight out of 18 corporate packages even after adopting the timelines prescribed in the circular.

11.5.3.2 Implementation of R&M packages

(a) Time over-run

Audit noticed that NTPC accorded investment approval for 20 schemes in nine selected power stations during July 2007 to April 2013 (except Anta GPS which was in July 2004) with scheduled date of completion of 15 by March 2015. However, none of the schemes was fully completed as of March 2015. Out of 197 packages awarded up to March 2015, only 107 packages were completed. Delays noticed in respect of completed packages as of 31 March 2015 are indicated in the following chart.



Audit observed that 41 out of 107 packages completed suffered from delays, the reasons for the same were mainly attributable to NTPC and consisted of (i) delay in issuing construction drawing/system requirements (Badarpur TPS, Ramagundam STPS, Farakka STPS and Korba STPS), (ii) delay in providing front (Ramagundam STPS and Anta GPS), (iii) delay in approval of drawings and documents like quality assurance plan, type test, *etc.*, and un-clarified pre-dispatch inspection clause (Badarpur TPS, Ramagundam STPS, Korba STPS and Singrauli STPS), (iv) delay in test report of soil by engineering division (Badarpur TPS), (v) additional scope added in the contract package (Badarpur TPS and Dadri TPS), and (vi) non-availability of shut down at units for installation of materials (Dadri TPS, Badarpur TPS, Anta GPS, Korba STPS, Singrauli STPS and Farakka STPS). Audit also observed that due to non-synchronisation of procurement activities with available shutdown of units, the material remained idle till shut down of units were available. Similarly, in five out of 107 packages, the reasons for delay were attributable to contractors and these included delay in performance guarantee test (Dadri TPS), delay in supply of material and failure/delay in sending supplier's representative (Ramagundam STPS). As a result of these delays, NTPC suffered loss on account of forced outages, excess coal consumption and non-compliance with environment norms, *etc.* No cost overrun was, however, noticed in completed packages, except in case of Ramagundam STPS where cost overrun of ₹1.10 crore in 12 completed packages was noticed.

NTPC, while not furnishing any clarification for the delay in completing packages, accepted (December 2015) that the proposals were initiated by taking budgetary offer from vendors in 2006 and due to time lag, there has been minor increase in award value of some schemes. However, the fact remains that this delay had resulted in avoidable forced outages and excess coal consumption as the power plants were operated with old/deficient systems.

(b) Packages under implementation

Audit observed considerable delays in implementation of some of the packages, due to which NTPC has been incurring extra/avoidable expenditure as indicated in Table-4.

Table-4: Illustrative cases of delayed implementation

Observations	NTPC reply and audit remarks
<p>(i) Loss due to leakage of cooling water ducts - In Singrauli STPS, a cooling water duct was leaking since 1990 and a supplementary pump had to be operated incurring additional energy charges of ₹ 1.97 crore <i>per annum</i>. On the advice of Indian Institute of Science, Bangalore (April 2009), a contract was awarded (May 2011) to M/s IVRCL Infrastructure & Projects Ltd for ₹ 68.05 crore with scheduled completion by May 2013. However, 50 <i>per cent</i> of works only was completed up to March 2015. Though NTPC</p>	<p>NTPC stated (December 2015) that once the old duct was replaced; energy losses would be averted once and for all. The work was taken up without shutting down any of the units, an option which would have resulted in disruption of power supply/costlier power besides huge loss, much more than the energy charges. It was added that action was now being taken for early completion of the work. However, it is pertinent to note that the duct was to be laid without any separate unit shut down and both the ends of the duct were planned to be</p>

Observations	NTPC reply and audit remarks
withheld ₹ 1.71 crore towards liquidated damages, it gave time extension upto March 2016. Thus, despite incurring additional expenditure of ₹ 1.97 crore <i>per annum</i> (₹ 7.88 crore from 2012 to 2015), NTPC could not ensure that the project was completed within scheduled time to avoid further expenditure though the work was awarded in May 2011.	connected in the system during annual shut down only.
(ii) Loss due to poor water quality – For urgent requirement of clean water for Badarpur TPS, NTPC approved (July 2011) R&M works for cooling water system at ₹ 239.88 crore. Out of total 37 packages of the system (2 major corporate, one regional and 34 site packages), two major corporate and 22 site packages were not awarded (October 2015). It was noticed that due to poor water quality, power station has been facing problems like choking of condenser tubes, frequent back washing/condenser cleaning, replacement of condenser tubes, boiler tube leakage, etc. This has also resulted in avoidable expenditure of ₹ 33.77 crore on account of condenser cleaning job, condenser tube replacement, partial load reduction and generation loss of electricity of 423.512 million units (MU) valued at ₹138.42 crore on account of hydrogen embrittlement causing boiler tube leakage during 2011 to 2015.	NTPC stated (December 2015) that Delhi Pollution Control Committee (DPCC) and Delhi Government, citing high levels of pollution, have been requesting to consider closing down the station. As such, station was being operated to meet power requirement of Delhi. In view of this, the packages were not being pursued. The fact, however, remains that NTPC has already completed packages for reducing pollution in April 2014 and May 2015 for two units and has been operating one of these units regularly, and the pollution levels were now under the DPCC norms. Since no decision has so far been taken on closure of units, NTPC would continue to operate the units and incur avoidable expenditure and generation loss.
(iii) Extra/wasteful expenditure due to delay in placing order –In Singrauli STPS (Stage-I), R&M package for gravimetric feeder controller ¹ (GFC) system having 18 feeders was approved (November 2003) at an estimated cost of ₹1.97 crore. A proposal to award this work to original equipment manufacturer (OEM) M/s Stock Redler at ₹ 3.59 crore was scrapped (23 September 2006) citing high price and decided to award (11 February 2008) the same to Bharat Heavy Electrical Limited (BHEL) at ₹ 0.63 crore (for two feeders). Since GFC commissioned by BHEL did not work properly, the work for retrofitting all 18 feeders was awarded (March 2015) to OEM contractor at ₹ 6.82 crore with	NTPC stated (December 2015) that the work was taken up on an experimental basis to attempt reduction in the cost of procurement and dependence on foreign vendors and had it been successful, it would have resulted in substantial savings. The reply needs to be viewed against the fact that while NTPC cited high cost for not awarding the work to OEM contractor who quoted a total of ₹ 3.59 crore for 18 feeders (<i>i.e.</i> , ₹ 0.20 crore per feeder), it awarded the work to BHEL at ₹ 0.32 crore per feeder. Therefore, the argument that it took up the work on an experimental basis to reduce cost was not factual.

¹ GFC is a weight measurement system for coal. After the Coal Handling Plant get loaded into the coal bunker, the coal input to the coal mill is regulated through GFC.

Observations	NTPC reply and audit remarks
<p>scheduled completion by April 2016. As a result, NTPC not only suffered a loss of ₹ 4.85 crore (₹ 6.82 crore - ₹ 1.97 crore) towards price escalation but also incurred wasteful expenditure of ₹ 0.63 crore on account of feeders supplied by BHEL.</p>	
<p><i>(iv) Delay in rectifying defective work</i>—In Singrauli STPS, the work of condenser on load tube cleaning system was awarded (October 2005) to M/s Technos et Compagnie, France for supplies and to M/s Macmet India Ltd. (January 2006) for supply and installation from India at a total value of ₹ 3.41 crore. The works were completed in February 2008, and on testing, it was observed that only 60 percent ball recovery was achieved as against 95 percent ball recovery as agreed. As such, default notices were served (December 2010) to the contractors and asked (June 2015) them to remit ₹ 2.53 crore paid to them. However, Audit observed that the defective work had not been rectified so far (March 2015).</p>	<p>NTPC accepted (December 2015) that due to not achieving guaranteed performance, bank guarantees equivalent to ₹ 0.65 crore have been encashed. However, fact remains that NTPC did not encash remaining bank guarantees (Euro 88683 and ₹ 0.25 crore) though it issued notice of failure in December 2010, and no steps have been taken to rectify the defective works, which has been causing excess consumption of coal.</p>
<p><i>(v) Generation loss due to high shaft vibration</i> – In Singrauli STPS, since the useful life (200,000 operating hours) of turbo generator bearings of all the seven units were completed between 2008 and 2013, a package for upgradation of bearings for unit # 1 to 5 was approved in April 2013, but contract for the same has not been awarded till March 2015. Meanwhile, a purchase order for procuring bearings for unit # 6 and 7 was placed (October 2013), but the supply was not completed till March 2015. As the bearings were being operated beyond their useful life, high vibration were noticed in units # 1, 2, 5 and 6, due to which the units were under forced shutdown for 2297 hours during 2009-10 to 2014-15. This resulted in generation loss of 763.53 MU valuing ₹ 131.36 crore.</p>	<p>NTPC accepted (December 2015) that decision for replacement of bearing was taken on the basis of deviation observed in dye penetration test and ultrasonic test of bearing. It was also stated that the issue as mentioned in audit para has already been addressed and these units were presently in healthy condition giving full generation. The reply needs to be viewed against the fact that though the bearing exceeded its useful life since 2008, it were not replaced yet (December 2015), and during this period four out of six units were under forced shutdown causing generation loss.</p>

11.5.3.3 Impact of delay in implementing R&M packages

(a) Excess coal consumption of ₹881.89 crore

With increasing age, efficiency¹ of power generation units decrease, while good operation and maintenance practices and timely renovation and modernization enable the units to

¹ Efficiency = 860/heat rate; as heat rate increase, efficiency declines.

recover a portion of past deterioration allowing them to stay close to design parameters. Against this background, NTPC initiated a number of R&M packages to increase thermal efficiency of power plants. Audit, however, observed that due to non-completion of R&M packages within stipulated time, power plants have been consuming more coal due to poor thermal efficiency. There were a host of issues that affected thermal efficiency of NTPC power plants, which included (i) intake of incorrect coal flow inside furnace due to malfunctioning of feeder control system cards (Korba STPS), (ii) absence of high pressure heater, flue gas temperature at air preheater in excess of 136 degree Celsius, *etc.* (Singrauli STPS), (iii) problems in boiler and boiler auxiliary (Ramagundam STPS), and (iv) old age of power plants (Badarpur TPS, Dadri TPS, and Farakka TPS). As a result, power plants had been operating with poor thermal efficiency and consuming excess coal as indicated in Table-5.

Table-5: Details of excess coal consumption due to poor thermal efficiency

Sl No.	Name of power plant	Scheduled completion from actual date of initiation	Designed/ desired* efficiency (Per cent)	Actual efficiency range (Per cent)	Period of loss	Excess coal consumption ¹ (Lakh MT)	Value of excess coal (₹in crore)
1	Korba Stage I	2010-11	37.73	35.70 to 35.73	2011-15	7.34	88.05
2	Singrauli Stage-I	2011-12	37.19	35.97 to 36.16	2012-15	5.31	81.50
3	Badarpur TPS Stage-II	2008-09*	33.73*	32.97 to 33.86	2009-15	1.57	37.85
4	Dadri TPS Stage-I	2008-09*	36.32*	35.76 to 36.04	2009-15	2.85	119.91
6	Ramagundam STPS Stage-I	2010-11	39.05	36.29 to 36.59	2011-15	8.11	221.52
7	Ramagundam STPS Stage-II	2010-11	37.77	36.16 to 36.39	2011-15	12.24	333.06
	Total					37.42	881.89

* In these power plants, desired efficiency was applied and excess coal consumption was worked out from 2008-09 only, since management estimated improvement in thermal efficiency.

NTPC stated (December 2015) that there was wide variation of actual thermal efficiency with respect to design efficiency because of different ambient conditions, load variation, poor quality of coal, number of start-ups and stress due to continuous operation over long duration, *etc.* CERC allowed certain margin while notifying the heat rate norms to take care of the actual operating conditions and it has been operating within these norms. Regarding measurement of coal flow in case of Korba STPS, it was stated that the same has no relation with combustion. The air flow was maintained through oxygen measurement and occasional failure of feeder control cards would not cause loss continuously.

The reply needs to be viewed against the fact that excess coal consumption has been worked out with reference to gross calorific value of coal as claimed by NTPC while working out loss of quality of coal, and therefore, the poor quality of coal was already considered. Since actual thermal efficiency was lower than the designed ones in all power

¹ Excess Coal consumption = {(Design Heat rate/Actual GCV of coal) * Generation } - Actual Coal consumption

stations, R&M schemes were identified and non-completion of the same, therefore, resulted in persistent excess consumption of coal. Regarding heat rate fixed by CERC, it is worthwhile to note that CERC fixes the norm considering the present operating conditions of the plant. However, audit observation pertains to non-achieving desired objectives of R&M with respect to improving thermal efficiency. Through R&M packages, NTPC envisaged heat rate improvement in power stations, and had these been achieved, CERC would have also revised the norm accordingly. In respect of Korba STPS, it was noticed that due to malfunctioning of feeder control system cards, there was a chance of incorrect coal flow inside the furnace leading to incorrect coal accounting, which, in turn, cause improper combustion and accumulation of incombustible material inside the furnace area or loss of efficiency and heat rate.

(b) Forced outages resulting in generation loss of ₹489.29 crore

NTPC, with the objective of controlling forced outages, identified various R&M packages like control and instrumentation (C&I) package, electrical packages, boiler packages and turbine packages, to be completed during 2007-15. However, as these packages were not completed in time, forced outage of 3917.97 hours due to failure of the above systems was noticed during 2007-2015. This resulted in generation loss of 1924.77 MUs and opportunity to earn additional revenue of ₹ 489.29 crore in eight power stations as indicated in Table-6.

Table-6: Details of plant-wise forced outages

Sl. No.	Name of power plant	Period of loss	Hours	Units (MU)	Amount (₹ in crore)
1	Korba STPS	2011-15	53.32	22.07	3.85
2	Singrauli STPS	2012-15	67.92	30.60	5.34
3	Jhanor GGPS	2009-15	7.44	1.47	0.94
4	Dadri GPS	2008-15	1266.09	191.47	65.92
5	Dadri TPS	2007-15	1607.83	340.95	122.62
6	Badarpur TPS	2007-15	548.26	115.13	42.99
7	Anta GPS	2007-15	367.11	45.19	15.88
8	Ramagundam STPS	2011-15	NA [@]	1177.90	231.75
	Total		3917.97	1924.77	489.29

[@] Details were not maintained by the plant

NTPC stated (December 2015) that in a power plant, planned outage of about 5 to 6 per cent, forced outage of 2 to 3 per cent and partial loading of about 1 to 2 per cent were common and considered normal. Achieving performance better than this would require enormous efforts and investments, which might not be commensurate with benefits. Tariff for the period 2004-09 and 2009-14 comprised two parts, namely, capacity charge (for recovery of annual fixed cost) and energy charge. Fixed component was recovered on the basis of annual availability whereas variable components were recovered towards

fuel cost. CERC Regulations specify annual target plant availability factor for the stations and if the specified target availability was achieved, full fixed cost recovery was made.

The reply is to be viewed in light of the fact that forced outages occurred due to non-completion of R&M packages for systems like C&I, electrical and boiler and auxiliary systems *etc.*, which were envisaged in R&M schemes for implementation during 2007-15. Though CERC has not prescribed any norm for forced outages, NTPC has also not produced any approved norms fixed by it or by any other competent body to be considered as industry benchmark. Audit has worked out generation loss reckoning only variable price and for the periods in which R&M packages were to be completed.

(c) Non-adherence to environmental norms

As part of R&M activities, ESP schemes were approved in five power stations (*viz.*, Korba STPS, Singrauli STPS, Badarpur TPS, Farakka STPS and Ramagundam STPS) in order to reduce the emission levels of these stations so that to meet the norms fixed by State agencies. Table-7 below indicates emission level vs. norms in four out of five¹ power stations.

Table -7: Details of pollution norms vs. actual

Year	Korba Stage-I & II (Units 1 to 6)	Singrauli, Stage-I & II (Units 1 to 7)	Badarpur TPS, Stage-II (Units 4 to 5)	Farakka STPS, Stage-I & II (Units 1 to 6)
	Stack emission ranged level (mg/Nm³) (average)			
Norm	50	100	50	150
2007-08	NA	126.00	NA	163.50
2008-09	122.39	128.50	NA	87.00
2009-10	122.55	128.00	80.50	84.50
2010-11	118.79	129.00	85.50	74.00
2011-12	92.37	127.50	87.00	136.00
2012-13	111.65	127.00	98.50	166.50
2013-14	90.70	128.50	96.00	71.50
2014-15	99.64	126.00	99.50	119.50

It may be seen that range of emission levels were higher than those fixed by pollution control agencies. Audit observed that though the Central/State agencies gave directions to adhere to the pollution norms, but inordinate delay in implementing ESP packages resulted in persistent non-compliance with environmental norms. As a result, NTPC had to deposit bank guarantee of ₹ 27.86 crore for Korba STPS and Badarpur TPS and to incur an avoidable expenditure of ₹ 7.32 crore for ammonia dosing system in Korba STPS and Singrauli STPS during the period from 2008-09 to 2014-15.

¹ However, in Ramagundam STPS, audit noticed that ESP levels reported by Management were within the standard for all years 2007-08 to 2014-15, but during inspection, the Andhra Pradesh Pollution Control Board has noticed EPS levels higher than prescribed norms.

NTPC stated (February 2015/January 2016) that the target fixed by State agencies was very stringent for an old station and time period of one year was not feasible for implementation of ESP package due to complex technical issues. It was further added that after commissioning of ESP packages at unit # 4 and 5 of Badarpur TPS (Stage-II), the emission levels were within the limit. The fact, however, remains that though State agencies had stipulated norms as early as 2005, NTPC was yet (December 2015) to complete the packages, as such it had to incur avoidable expenditure of ₹ 7.32 crore for reducing the emission level through ammonia dosing system.

(d) Reduced tariff recovery of ₹199.65 crore

During 2009-14, NTPC availed compensatory allowance for mid-life R&M schemes in four coal based power stations¹, while the schemes were due for implementation during 2004-09. As a result, tariff recovery in four power plants was reduced by ₹199.65 crore as indicated in Table 8.

Table-8: Calculation showing amount forgone due to delay in implementing R&M packages

S. N.	Name of power station	Number of schemes	Estimated cost (₹ in crore)	Amount allowed/to be allowed by CERC under Regulations 2009-14 up to 25 years (₹ in crore)	Benefits foregone (i.e. by not claiming under Regulations 2004-09) (₹ in crore)
(1)	(2)	(3)	(4)	(5)	(6)=(4)-(5)
1.	Korba Stage –II	2	105.03	53.80	51.23
2.	Singrauli, Stage-II	2	67.44	30.55	36.89
3.	Dadri, Stage-I	1	120.78	57.12	63.66
4.	Ramagundam, Stage-II	1	111.02	63.15	47.87
	Total	6	404.27	204.62	199.65

As evident from the table, out of total estimated expenditure of ₹404.27 crore, only ₹ 204.62 crore was allowed or to be allowed as compensatory allowance by CERC till useful life of above power stations. On the contrary, completion of R&M activities within time schedule, i.e., during 2004-09² would have resulted in recovery of ₹404.27 crore as additional capitalisation as per CERC Regulations 2004-09.

NTPC stated (December 2015) that essential process time was required for formulating proposals and taking them through the approval process. This became more time consuming, especially when CERC changed the regulatory norms. Even if it had implemented these schemes and claimed tariff during 2004-09, there was no certainty that the entire amount would have been reimbursed by CERC. Tariff fixation was done after prudence check and CERC might have cleared lesser number of schemes/lesser cost

¹ Korba STPS Stage-II, Singrauli STPS Stage-I, Dadri TPS and Ramagundam STPS Stage-II.

² As per the R&M Policy/R&M Business process of NTPC, the R&M work of Korba Stage-II, Singrauli Stage-II, Ramagundam Stage-II and Dadri TPS was to be completed upto March 2002, March 2001, March 2003 and March 2006 respectively.

after such checks. It was also stated that only the actual expenditure incurred by NTPC on R&M and amount allowed by CERC were comparable.

The reply needs to be viewed in light of the fact that NTPC had itself considered the R&M activities as essential and therefore had estimated the cost to be incurred, and as per Regulations 2009-14 it would be paid compensatory allowance at a lump sum per station till it completes 25 years rather than the estimated cost. The argument of prudent check by CERC or allowance of lesser schemes/cost does not hold good considering the fact that as per Regulations 2004-09, NTPC had been booking expenditure on R&M as additional capital and no instance of reducing the scheme or cost was pointed by NTPC. Regarding comparison of actual cost and recovery, it is pertinent to note that since NTPC did not complete the works, the actual expenditure was not available, and hence the comparison was made with estimated cost.

(e) Loss of ₹23.42 crore due to disallowance of R&M expenditure

NTPC claimed R&M expenditure of ₹ 591.35 crore for Dadri GPS and ₹ 499.45 crore for Jhanor GGPS through tariff as additional capitalisation during 2009-14. However, CERC, at the time of truing up, allowed ₹ 380.62 crore for Dadri GPS (June 2012) and ₹ 170.17 crore for Jhanor GGPS (December 2011), and disallowed ₹ 210.72 crore for Dadri GPS and ₹ 329.28 crore for Jhanor GGPS, as NTPC failed to complete the works within the tariff period and the benefit would accrue to the beneficiaries in the next tariff period only. Consequently, as per CERC Regulations, NTPC had to refund the amount collected through tariff *plus* interest of ₹ 23.42 crore to the beneficiaries.

NTPC accepted (November 2014/December 2015) that it refunded an amount of ₹ 87.76 crore to the beneficiaries with interest of ₹ 8.42 crore in case of Dadri GPS and ₹109 crore with interest of ₹15 crore in case of Jhanor GGPS. The reply confirms the fact that NTPC had to pay interest purely on account of delayed implementation of R&M schemes.

Conclusion

NTPC framed (May 2002) R&M Policy with the objectives to sustain improved levels of performance of plant, equipments and systems, and to extend the useful life of the same. In order to streamline the timelines for implementing R&M activities, NTPC also formulated R&M Business Process 2006. Audit, however, noticed that the policy and business process were not adhered to, causing inordinate delays in initiating and implementing R&M packages. There were delays of three to 109 months in completing activities relating to R&M works in 19 out of 20 schemes selected in nine power stations. Under these schemes, 335 contract packages were identified but only 197 contract packages were awarded. Out of 107 packages completed, 41 packages were delayed up to 31 March 2015. Consequently, many of the packages were deferred resulting in reduced tariff recovery of ₹199.65 crore in four power stations. Similarly, NTPC had to refund tariff recovered against R&M packages along with interest of ₹23.42 crore, as these packages were not completed in time. Similarly, due to non-completion of projects in time, there were instances of avoidable or extra expenditure of ₹47.13 crore and generation loss of ₹269.78 crore.

As a result of delay in implementing R&M packages, excess coal consumption of ₹ 881.89 crore was noticed due to non up-gradation of coal feeder system in Korba STPS and poor thermal efficiency of boiler and turbine in Singrauli STPS, Dadri TPS, Badarpur TPS and Ramagundam STPS. Similarly, there was avoidable generation loss of electricity valued at ₹489.29 crore on account of forced outages due to frequent failure of C&I, electrical and other systems in Korba STPS, Singrauli STPS, Dadri TPS, Dadri GPS, Anta GPS, Badarpur TPS and Ramagundam STPS. Non-adherence to environment norms in Singrauli STPS, Korba STPS, Anta GPS, Farakka STPS, Badarpur TPS and Ramagundam STPS was also noticed.

Recommendations

In order to overcome the shortcomings noticed in implementation of R&M initiatives, Audit suggests that NTPC may:

- ***Ensure submission of comprehensive R&M proposals at the initiation stage itself so that time involved in re-submission of proposal and consequent delays are avoided.***
- ***Review the R&M Policy and R&M Business Process to minimize delays in various phases of implementation of R&M schemes.***
- ***Expedite the R&M activities so that forced outages and excess coal consumption are kept at minimum.***
- ***Ensure that amount claimed as R&M expenditure in tariff petitions is utilised within the tariff period to avoid refund or deferral of allowance by CERC.***
- ***Monitoring mechanism at all levels are made proactive so as to ensure timely completion of R&M schemes and for overall achievement of desired objectives.***

NTPC accepted (February/December 2015) all the recommendations and audit observations were appreciated as it would add value.

The matter was reported to the Ministry in January 2016; their reply was awaited (March 2016).

Rural Electrification Corporation Limited

11.6 Sanction of loan to financially weak private developer

Decision to sanction and disburse a loan disregarding the risk associated with financially weak promoters, after relaxing pre-disbursement conditions, resulted in risky exposure of ₹ 250 crore.

Rural Electrification Corporation Limited (REC) sanctioned (September 2005) a loan of ₹250 crore to M/s Shree Maheshwar Hydel Power Corporation Limited to set up a hydro power project in Madhya Pradesh. REC disbursed the loan in 12 instalments between August 2007 and March 2010. The loan was classified as non-performing asset in June 2011 due to continuous default of the borrower in servicing the loan since December 2010 and categorised as doubtful in January 2013. The project was to achieve commercial operation by March 2010, but due to delay in implementation, commercial operation is yet to be achieved (December 2015).

Audit observed that as per loan sanction letter, borrower was required to fulfil certain pre-disbursement conditions, which, *inter alia*, included (i) complete underwriting for public issue of equity and bonds, (ii) tie-up of entire equity share capital, (iii) acquisition of all land required for rehabilitation and resettlement of affected villages and submergence, (iv) confirmation of clearance of outstanding to other lenders, (v) furnishing information on net-worth of promoters and (vi) approval of Madhya Pradesh State Electricity Board and Government of Madhya Pradesh for conversion of asset transferred to the borrower. However, these conditions were relaxed subsequent to approval of the loan at the time of disbursement of instalments by way of time extension for their compliance. The management of REC had denied loan to the borrower on two previous occasions (August 2003/July 2004) citing default in servicing existing lenders and non-infusion of equity. Though the screening committee evaluated the loan application for an amount of ₹ 45 crore subject to a commitment of the lead lender for a term of loan of ₹529 crore, the Board of Directors sanctioned a loan of ₹ 250 crore.

REC stated (December 2015) that the loan was sanctioned after proper due diligence and risks identified were mitigated through appropriate conditions and/or taking undertakings from borrower/promoters. As per the practice followed among lending institutions and in line with lead lender, conditions were relaxed or modified with approval of competent authority. There were constraints of funds during last leg of project implementation and main reasons for delay were attributable to non-infusion of equity by promoters.

The reply is to be viewed against the fact that the due diligence conducted by the screening committee justified a loan of ₹45 crore only, while the Board had approved ₹ 250 crore. Although Board of Directors directed management to take a considered and independent view irrespective of the decision of lead/other lenders, the risk mitigating measures contemplated by way of pre-disbursement conditions were relaxed by way of extension of time for their compliance, and most of the conditions have not been complied with throughout the period of loan disbursement and as on December 2015.

Thus, decision to sanction and disburse the loan disregarding the risk associated with financially weak promoters, after relaxing pre-disbursement conditions resulted in risky exposure of ₹ 250 crore.

The matter was reported to the Ministry in January 2016; their reply was awaited (March 2016).