सत्यमेव जयते

Report of the Comptroller and Auditor General of India for the year ended March 2022

भारत के नियंत्रक एवं महालेखापरीक्षक ✦ COMPTROLLER & AUDITOR GENERAL OF INDIA

सत्यमेव जयते

SUPREME AUDIT INSTITUTION OF INDIA

लोकहितार्थ सत्यनिष्ठा

Dedicated to Truth in Public Interest

Union Government
Scientific and Environmental Ministries/Departments
Report No. 24 of 2023
(Compliance Audit)

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for the year ended March 2022

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Contents

Preface

This report of the Comptroller and Auditor General of India for the year ended March 2022 has been prepared for submission to the President under Article 151 of the Constitution of India. The report contains the results of compliance audit of the Scientific and Environmental Ministries/Departments of the Union Government, their attached/subordinate offices, Autonomous Bodies and Central Public Sector Enterprises.

The instances mentioned in this report are those which came to notice in the course of test audit for the period 2021-2022 as well as those which came to notice in earlier years but could not be reported in the previous Audit Reports. Matters relating to the period subsequent to 2021-22 have also been included, wherever necessary.

The audit has been conducted in conformity with the Auditing Standards issued by the Comptroller and Auditor General of India.

Overview

This report of the Comptroller and Auditor General of India (C&AG) relates to matters arising from compliance audit of the transactions of eight[1] Scientific and Environmental Ministries/Departments of the Government of India as well as of autonomous bodies and Central Public Sector Enterprises under them. The report contains 14 paragraphs including two SSCAs[2]. An overview of the main audit findings included in this report is given below.

Avoidable payment of ₹ 1.14 crore on electricity Charges

Inability to realistically assess contract demand with the actual consumption of electricity by a unit of Department of Space viz., Liquid Propulsion Systems Centre (LPSC-B), Bengaluru had resulted in avoidable expenditure of ₹ 1.14 crore.

(Page 11, Paragraph 2.1)

Sub optimum utilisation of the capacities of GSAT-18 Satellite

Department of Space launched GSAT-18 Satellite in October 2016. The satellite could not be utilised fully and DOS incurred avoidable expenditure of ₹ 17.27crore on hardware and launch services of GSAT-18 Satellite.

(Page 12, Paragraph 2.2)

Short closure of project for the development of Special Grade Carbon Fibre

VSSC undertook a project to develop Special Grade (T 800 grade) Carbon Fibre to indigenise and ensure continuous supply for its programmes. The MoU was however short closed due to improper planning and lack of clarity on availability of resources (facility, financial and manpower), required for the project resulting in infructuous expenditure of ₹ 4 crore.

(Page 13, Paragraph 2.3)

Inadmissible payment of ₹ 67.48 lakh on travelling allowance

In violation of provision of GoI order, DBT made an inadmissible payment of ₹ 67.48 lakh on traveling allowance for joining duty in respect of newly appointed scientists.

(Page 17, Paragraph 3.1)

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[1] Department of Atomic Energy (DAE), 2. Ministry of Science and Technology having Department of Biotechnology (DBT), Department of Science and Technology (DST), Department of Scientific and Industrial Research (DSIR), 3. Department of Space (DOS), 4. Ministry of Earth Sciences (MoES) including India Meteorological Department, 5. Ministry of Environment, Forest and Climate Change (MoEF&CC) and 6. Ministry of New and Renewable Energy (MNRE)

[2] Subject Specific Compliance Audit

Deficient contract management leading to avoidable expenditure of ₹ 94.09 lakh

NCL, Pune could not safeguard its financial interests by not awarding contract to lowest bidder leading to avoidable expenditure of ₹ 94.09 lakh.

(Page 19, Paragraph 4.1)

Infructuous Expenditure of ₹ 1.04 crore

Lack of co-ordination and in-effective monitoring by MoEF&CC led to non-establishment of Pilot Plant by the industrial partner resulting in infructuous expenditure of ₹ 1.04 crore.

(Page 21, Paragraph 5.1)

Infructuous expenditure of ₹ 3.43 crore on a Waste Destruction Plant

Inadequate monitoring of the project by Project Management Committee of the Ministry of Environment Forests & Climate Change, non-signing of any legal agreement with penalty clause by implementing agencies and poor financial management by the project partners resulted in infructuous expenditure of ₹ 3.43 crore on a project.

(Page 22, Paragraph 5.2)

Infructuous Expenditure of ₹ 13 crore

Non- adherence of terms and conditions of sanction order by IICT and deviations from the envisaged target led to termination of a project after incurring expenditure of ₹ 13 crore.

(Page 25, Paragraph 6.1)

Avoidable payment of ₹ 76.75 lakh as management fee due to defective agreement

Technology Information, Forecasting and Assessment Council (TIFAC) entered an MoU with SIDBI for management of project loans. The agreement allowed SIDBI to charge yearly management fee on the initial disbursement amount rather than the reducing balance. Further, SIDBI kept charging management fee even when the projects were financially settled.

(Page 27, Paragraph 7.1)

Functioning of Institute for Plasma Research

IPR could not complete the projects in time and exceeded their planned completion period by 21 months to 54 months. It could not achieve the intended objectives of the projects though projects were declared as complete with many extensions and non-achieved objectives were migrated to new projects with further cost implications. Though 16 technologies were developed it could not transfer them even after one to eight years of development.

(Page 29, Paragraph 8.1)

Contract and Material Management in Nuclear Power Corporation of India Limited

Nuclear Power Corporation of India Limited (NPCIL) incurred additional expenditure towards price escalation, extension of insurance policies, extension of warranty charges and retention/ idling of manpower as it could not complete the contracts in stipulated time due to delay in making available the work front, drawings, and other requisite inputs. There were delays in processing of indents and implementation of Integrated ERP (including MIS) besides improper preservation of store items.

(Page 43, Paragraph 8.2)

Blockage of funds to the tune of ₹ 7.86 crore

Indigenous High Dose Rate Brachytherapy (IHDR), Treatment Planning Software (TPS) and Applicator with Coupling procured at a cost of ₹ 7.86 crore is yet to be transferred to desired hospitals even after nearly seven years since these were supplied.

(Page 55, Paragraph 8.3)

Absence of due process in engagement of legal counsel

Bhabha Atomic Research Centre (BARC) engaged legal Counsels in contravention of orders issued by Department of Legal Affairs, Ministry of Law & Justice**.**

(Page 57, Paragraph 8.4)

Loss of dues to the tune of ₹ 77.76 lakh

Shortcoming in selection of suitable candidates and monitoring the performance of Master Business Associate by Electronics Corporation of India Limited resulted in loss of dues to an extent of ₹ 77.76 lakh.

(Page 59, Paragraph 8.5)

CHAPTER - I

Introduction

1.1 About this Report

The mandate of the Comptroller and Auditor General with regard to audit of Union and States, Government companies and corporations, bodies and authorities is derived from the Constitution and the Comptroller and Auditor General's (DPC) Act, 1971. The Comptroller and Auditor General is the sole authority prescribed in the Constitution entrusted with the responsibility of audit of accounts of the Union and of the States. Under Section 13, (read with Section 17) and Section 16 of the Act, it is the duty of the Comptroller and Auditor General to audit all expenditure, all receipts, and other transactions of the Governments of the Union, of each State and each Union Territory. Comptroller and Auditor General's mandate, under the Constitution and under Section 14, 15, 19 and 20 of the Act, also covers audit of bodies, authorities, Government companies and corporations. The Audit Reports of the Comptroller and Auditor General are placed before Parliament or the Legislature of the State or the Union Territory, as the case may be.

The Auditing Standards adopted by the Comptroller and Auditor General of India require that the materiality level for reporting be commensurate with the nature, volume and magnitude of transactions. The findings of Audit are expected to enable the Executive to take corrective actions and also to frame policies and directives that will lead to improved financial management of the organisations thereby contributing to better governance.

This report deals with the compliance audit of Scientific and Environmental Ministries/Departments. This chapter, in addition to explaining the planning and extent of audit, provides a brief analysis of the expenditure of the Scientific and Environmental Ministries/Departments and their financial management. Chapters II onwards present findings/observations arising out of the compliance audit of the Scientific and Environmental Ministries/Departments and research centres, Institutes and Autonomous Bodies along with Central Public Sector Enterprises (CPSEs) under their administrative control.

1.2 Audit coverage

This Audit Report contains audit findings as a result of compliance audit of the following eight[3] Scientific and Environmental Ministries/Departments of the Government of India and their units including CPSEs:

1) **Department of Atomic Energy (DAE)**
2) **Ministry of Science and Technology**
    a) **Department of Bio-Technology (DBT)**
    b) **Department of Science and Technology (DST); and**
    c) **Department of Scientific and Industrial Research (DSIR)**
3) **Department of Space (DOS)**
4) **Ministry of Earth Sciences (MoES)**
5) **Ministry of Environment, Forest and Climate Change (MoEF&CC)**
6) **Ministry of New and Renewable Energy (MNRE)**

1.3 Planning and conduct of audit

Compliance audit refers to examination of the transactions relating to expenditure, receipts, assets and liabilities of Government to ascertain whether the provisions of the Constitution of India and applicable laws, rules, regulations, orders and instructions issued by the competent authorities are being complied with and also to determine their legality, adequacy, transparency, propriety, prudence and effectiveness in terms of achievement of the intended objectives.

After completion of audit of each unit, Inspection Reports containing audit findings are issued to the head of the unit. The units are requested to furnish replies to the audit findings within one month of receipt of the Inspection Report. Whenever replies are received, audit findings are either settled or further action for compliance is advised. The important audit observations arising out of these Inspection Reports are issued separately as Draft Paras to the heads of the Administrative Ministries/ Departments for their comments and processed for inclusion in the Audit Reports which are submitted to the President of India under Article 151 of the Constitution of India.

During 2021-22, compliance audit of 156 out of 353 units including Central Public Sector Enterprises (CPSEs) of the eight Scientific and Environmental Ministries/Departments was conducted based on available resources and risk assessment of the units.

[3] ***This report does not have any observation related to Ministry of Earth Sciences***

1.4 Budget and expenditure controls

The position of expenditure of the Scientific and Environmental Ministries/Departments for the year 2021-22 and the preceding year 2020-21 is given in **Table 1** below.

Table 1: Expenditure of Scientific and Environmental Ministries/Departments

(₹ in crore)

Sl. No.	Ministry/Department	2020-21	2021-22
1.	Department of Atomic Energy	22116.82	31610.92
2.	Department of Space	9490.05	12493.86
3.	Department of Scientific and Industrial Research	4244.88	5141.06
4.	Department of Science and Technology	4913.33	5146.31
5.	Department of Biotechnology	2259.72	2851.14
6.	Ministry of Environment, Forests & Climate Change	2062.93	2618.53
7.	Ministry of New and Renewable Energy	3081.84	6792.40
8.	Ministry of Earth Sciences	1287.95	2194.39
	Total	**49457.52**	**68848.61**

The total expenditure of the eight Scientific and Environmental Ministries/Departments of the Government of India during 2021-22 was ₹ 68,848.61 crore as against ₹ 49,457.52 crore in 2020-21 viz., an increase of ₹ 19,391.09 crore (39.21 *per cent*). Of the total expenditure of ₹ 68,848.61 crore incurred by the Scientific and Environmental Ministries/Departments during 2021-22, 45.91 per cent was incurred by DAE.

The actual expenditure of all Scientific and Environmental Ministries/Departments increased from 4.74 per cent (DST) to 120.40 per cent (MNRE) during 2021-22 over the expenditure during 2020-21. There was a significant increase in expenditure of MNRE (120.40 per cent), MoES (70.38 per cent), DAE (42.93 per cent) and DoS (31.65 per cent) during 2021-22 over the previous year.

The increase in government expenditure within the Scientific and Environmental Ministries/Departments of the Government of India for 2021-22, rising by ₹19,391.09 crore (39.21%), underscores increasing focus being given to these activities by Government of India.

A summary of Appropriation Accounts is given below separately for FY 2021-22 in **Table 2**:

Table 2 - Details of grants received and expenditure incurred by Scientific and Environmental Ministries/Departments during 2021-22.

(₹ in crore)

Sl. No.	Ministry/Department	Grant/ Appropriation (including supplementary grant)	Expenditure	(-) Savings / (+) Excess	Percentage of Unspent provision
1.	Department of Atomic Energy	33099.97	31610.92	(-)1489.05	4.49
2.	Department of Space	13949.15	12493.86	(-)1455.29	10.43
3.	Department of Scientific and Industrial Research	5307.72	5141.06	(-)166.66	3.13
4.	Department of Science and Technology	6071.62	5146.31	(-)925.31	15.23
5.	Department of Biotechnology	3502.39	2851.14	(-)651.25	18.59
6.	Ministry of Environment and Forests	3136.62	2618.53	(-)518.09	16.52
7.	Ministry of New and Renewable Energy	8353.01	6792.40	(-)1560.61	18.68
8.	Ministry of Earth Sciences	2374.12	2194.39	(-)179.73	7.57
Total		**75794.60**	**68848.61**	**(-)6945.99**	**9.16**

With reference to the total budget allotment of ₹ 75794.60 crore during 2021-22, the Scientific and Environmental Ministries/ Departments had an overall saving of ₹ 6945.99 crore which constitutes 9.16 per cent of the total grant/appropriation.

Out of the total unspent budget of ₹ 6945.99 crore, the unspent budget in MNRE (18.68 per cent), DBT (18.59 per cent), MoEF&CC (16.52 per cent) and DST (15.23 per cent) were the highest.

1.5 Audit of Autonomous Bodies

There are 84 Central Autonomous Bodies (CABs) under the Scientific and Environmental Ministries/Departments. Out of these, 11 CABs have been audited under sections 19(2) and 20(1) and remaining 73 CABs have been audited under sections 14 or 15 of the Comptroller & Auditor General's (Duties, Powers and Conditions of Service) Act, 1971. The total grants released to 73 CABs (under sections 14 or 15) during 2021-22 were ₹ 5750.93 crore. The details are given in ***Appendix I***. The total grants released to 11 CABs (under sections 19(2) & 20(1)) during 2020-21 and 2021-22 were ₹ 5342.64 crore and ₹ 6794.23 crore respectively as detailed in **Table 3** below.

Table 3: Grants released to Central Autonomous Bodies during FY 2020-21 and FY 2021-22

(₹ in crore)

Sl.No	Name of the Central Autonomous Body	Ministry/ Department	Amount of Grant released during FY 2020-21	Amount of Grant released during FY 2021-22
1.	Council of Scientific and Industrial Research, New Delhi	DSIR	4201.07	5049.17
2.	Sree Chitra Tirunal Institute of Medical Sciences and Technology, Thiruvananthapuram	DST	310.00	335.01
3.	Technology Development Board, New Delhi	DST	10.00	125.00
4.	Science and Engineering Research Board	DST	741.18	900.00
5.	National Tiger Conservation Authority, New Delhi	MoEF&CC	7.40	9.86
6.	Wildlife Institute of India, Dehradun	MoEF&CC	22.00	25.51
7.	Central Zoo Authority, New Delhi	MoEF&CC	7.19	11.25
8.	National Biodiversity Authority, Chennai	MoEF&CC	10.80	16.13
9.	Regional Centre for Biotechnology, Faridabad	DBT	33.00	41.15
10.	Compensatory Afforestation Fund Management and Plann ing Authority (CAMPA), New Delhi	MoEF&CC	18.71	261.65
11.	Commission for Air Quality Management (CAQM)	MoEF&CC	--[4]	19.50
		Total	**5342.64**	**6794.23**

1.5.1 Delay in submission of accounts

The Committee on Papers Laid on the Table of the House in its First Report (Fifth Lok Sabha) 1975-76 and Rule 237 of General Financial Rules (GFR), 2017 mention that every CAB should complete its accounts within a period of three months after the close of the accounting year and make them available for audit and that the Annual Reports along with the audited annual accounts should be laid before Parliament within nine months of the close of the accounting year.

Out of the eleven ABs, three CABs for the year 2021-22 submitted their accounts after delay ranging from 06 days to 153 days to audit. The details of the same is mentioned in **Table 4** below.

[4] ***The Commission for Air Quality Management (CAQM) was setup in 2021 and the audit was started from F.Y. 2022-23.***

Table 4: Delay in submission of accounts for FY 2021-22 to Audit

Sl. No.	Name of Autonomous Body	Ministry/ Department	Date of submission of Accounts to audit	Delay in days
1.	Sree Chitra Tirunal Institute of Medical Sciences and Technology, Thiruvananthapuram	DST	13.07.2022	13 days
2.	Technology Development Board, New Delhi	DST	06.07.2022	06 days
3.	Wildlife Institute of India, Dehradun	MoEF&CC	03.08.2022 (Revised Accounts received on 01.12.2022)	153 days

1.5.2 Delay in presentation of audited Accounts of Central Autonomous Bodies before both the Houses of the Parliament

The Committee on papers Laid on the table of the House, in its first Report (1975-76) had recommended that the audited accounts of the autonomous bodies be laid before Parliament within nine months of the close of the accounting year, i.e., by 31st December of the following financial year. Further, as per Rule 237 of the GFR (2017), the CABs have to submit Annual Report and Audited Accounts to the nodal ministry to be laid in the Parliament by 31st December.

The details of delay in presentation of audited accounts for the FY 2021-22 by Central Autonomous Bodies to Parliament is mentioned in the **Table 5** below:

Table 5: Delay in presentation of audited accounts for FY 2021-22 to Parliament by Central Autonomous bodies

Sl. No.	Name of Autonomous Body	Date of Presentation of Audit report in Parliament		Delay in months	
		Lok Sabha	Rajya Sabha	Lok Sabha	Rajya Sabha
1	National Biodiversity Authority, Chennai **(MOEF&CC)**	-	-	Awaited	
2	Wildlife Institute of India, Dehradun **(MOEF&CC)**	-	-	Awaited	
3	Central Zoo Authority, New Delhi **(MOEF&CC)**	06.02.2023	09.02.2023	Delay of 1 month and 6 days	Delay of 1 month and 9 days
4	Council of Scientific and Industrial Research, New Delhi **(DSIR)**	29.03.2023	23.03.2023	Delay of 2 month and 29 days	Delay of 2 month and 23 days
5	Compensatory Afforestation Fund Management and Planning Authority (CAMPA), New Delhi, **(MOEF&CC)**	-	-	Awaited	
6	Commission for Air Quality Management (CAQM), **(MOEF&CC)**	-	-	Awaited	

1.6 Outstanding Utilisation Certificates

Ministries and Departments are required to obtain certificates of utilisation of grants from the grantees i.e. statutory bodies, non-governmental institutions, etc. indicating that the grants had been utilised for the purpose for which these were sanctioned and where the grants were conditional, the prescribed conditions had been fulfilled. According to information furnished by eight Ministries/Departments, 36506 Utilisation Certificates (UCs) due (as on 31st March 2022) for grants released aggregating ₹26295.75 crore were outstanding for eight Ministries/ Departments as given in **Table 6**.

Table 6: Outstanding Utilisation Certificates

Ministry/Department	Number of outstanding UCs	Share of total outstanding UCs (%)	Amount pertaining to outstanding UCs *(₹ in crore)*	Share of amount pertaining to total outstanding UCs (%)
1) DAE	880	2.41	108.63	0.41
2) DBT	18041	49.42	8004	30.44
3) DST	9109	24.95	4415.86	16.79
4) DSIR	1786	4.89	11053.71	42.03
5) DOS	520	1.42	40.52	0.15
6) MoES	662	1.81	67.32	0.26
7) MoEF&CC	4715	12.92	793.41	3.02
8) MNRE	793	2.17	1812.30	6.89
TOTAL	**36506**	**100**	**26295.75**	**100**

It can be seen from the above table that the maximum number of outstanding UCs relate to DBT, DST, MoEF&CC and DSIR. Ministry/Department-wise and period wise position of outstanding UCs is given in ***Appendix II***.

1.7 Audit of Central Public Sector Enterprises

The accounts certified by the Statutory Auditors (Chartered Accountants) appointed by the C&AG under the Companies Act are subject to supplementary audit by C&AG as per section 143(6) of the companies Act, 2013.

Reports in relation to the accounts of a Government Company or Corporation are submitted to the Government by C&AG under the provisions of Section 19-A of the Comptroller and Auditor General's (Duties, Powers and Conditions of Service) Act, 1971.

There were 25 CPSEs and their 16 implementing units as per ***Appendix III*** that are audited under Section 143(6) of the Companies Act, 2013. The certification of 14 CPSEs detailed in ***Appendix IV*** was conducted for the FY 2021-22 and nil comments were issued against their accounts.

1.8 Losses and irrecoverable dues written off/waived

Statement of losses and irrecoverable dues written off/waived during 2021-22 furnished by Scientific and Environment Ministries/Departments is given in ***Appendix V***. A total amount of ₹ 11.82 lakh was written off in 2071 cases under the category 'other reasons' in DAE and MNRE.

1.9 Response of Ministries/Departments to previous Inspection Reports

As per MSO(Audit) (2nd Edition), Head of offices and next higher authorities are required to respond to the observations contained in IRs and take appropriate corrective action. Audit observations communicated in IRs are also discussed at periodical intervals in meetings by officers of this office with officers of Scientific and Environmental Ministries/Departments.

As of 31st March 2022, 1313 IRs containing 7902 paragraphs pertaining to previous years were pending for settlement and out of these, first replies have not been received in respect of 125 IRs containing 1458 paragraphs. The Department-wise break-up of outstanding Inspection Reports and Paragraphs are given in ***Appendix VI***.

1.10 Response of the Ministries/Departments to Draft Audit Paragraphs

On the recommendations of the Public Accounts Committee (PAC), Ministry of Finance (Department of Expenditure) issued directions to all Ministries in June 1960 to send their response to the Draft Audit Paragraphs proposed for inclusion in the Report of the C&AG. The provisions related to government response for audit observations has also been prescribed under Para 142 of Regulations on Audit and Accounts, 2020, made by the C&AG.

The Draft Paragraphs are forwarded to the Secretaries of the Ministries/Departments concerned drawing their attention to the audit findings and requesting them to send their response within six weeks. Draft Paragraphs proposed for inclusion in this report were forwarded to the Secretaries concerned between March 2022 and February 2023 through letters addressed to them personally.

This report contains 14 paragraphs including two Subject Specific Compliance Audit (SSCA). The responses received from concerned Ministries/Departments have been suitably incorporated in the Report.

1.11 Follow-up on Audit Reports

(a) For Civil units

In its Ninth Report (Eleventh Lok Sabha) presented to Parliament on 22 April 1997, the PAC recommended that Action Taken Notes (ATNs) on all paragraphs pertaining to the Audit Reports for the year ended 31 March 1996 onwards should be submitted to them, duly vetted by Audit, within four months from laying of the reports in the Parliament.

A review of outstanding ATNs as of 31st March 2023 on paragraphs included in the Reports of the C&AG pertaining to Scientific and Environmental Ministries/Departments (***Appendix VII***) revealed that 14 ATNs pending from five Ministries/ Departments were not received for the first time even after a delay ranging from 28 days to 26 months and 22 days. Also, revised ATNs, that have to be uploaded by Ministry within 20 days of getting Audit comments/clarification were pending in seven cases from five Ministries/ Departments with a delay ranging from 15 days to 66 months and 8 days as of 31st March 2023 (***Appendix VIII***).

(b) For Commercial Units

The Lok Sabha Secretariat requested (July 1985) all the Ministries to furnish notes (duly vetted by Audit) indicating remedial/corrective action taken by them on various paragraphs/appraisals contained in the Audit Reports (Commercial) of the CAG as laid on the table of both the Houses of Parliament. Such notes were required to be submitted even in respect of paragraphs/appraisals which were not selected by the Committee on Public Sector Undertakings (COPU) for detailed examination. The COPU in its Second Report (1998-99-Twelfth Lok Sabha), while reiterating the above instructions, recommended thar after submission of the paragraphs to the Committee, within six months from the date of presentation of the relevant Audit Reports, the follow up ATNs duly vetted by Audit in respect of all Reports of the CAG presented to Parliament.

A review of outstanding ATNs as of 31st March 2023 on paragraphs included in the Reports of the C&AG pertaining to CPSUs under these Five Ministries/Departments (***Appendix VII***) revealed that four ATN pending from two Ministries had not been received for the first time even after a delay ranging from 23 months to 60 months.

CHAPTER – II

Department of Space

2.1 Avoidable payment of ₹ 1.14 crore on electricity charges

Inability to realistically assess contract demand with the actual consumption of electricity by a unit of Department of Space viz., Liquid Propulsion Systems Centre (LPSC-B), Bengaluru had resulted in avoidable expenditure of ₹ 1.14 crore.

As per Rule 70 of GFR 2017, the Ministry/ Department in Central Government shall take effective steps to ensure department avoids wasteful expenditure. The electricity consumers in Karnataka enter into Power Supply Agreements with Bangalore Electricity Supply Company (BESCOM) towards High Tension electrical power supply. As per these agreements, the customer is to pay energy charges in accordance with the tariffs and 'conditions of supply' approved by Karnataka Electricity Regulatory Commission (KERC) from time to time. As per the electricity tariff -2017, the demand charges are levied on actual maximum demand recorded in a month or 75 per cent (which was revised to 85 per cent from May 2018 onwards) of the contract demand whichever is higher.

Audit observed that a unit of DOS viz; LPSC-B had entered into Power Supply Agreements in August 2019 with Bangalore Electricity Supply Company (BESCOM) towards electrical power supply for its Integrated Titanium Alloy Tank Production Facility (ITPF) at Tumkur, Karnataka. The contract demand entered was 5000 KVA. The Actual consumption and billing commenced from February 2020. Audit observed that the contract demand of 5000 KVA was much higher than the actual consumption, which was in the range of 25 KVA to 2375 KVA during the period from February 2020 to March 2022. Considering the peak consumption of 2375 KVA at the facility, LPSC-B could not align contract demand with the actual consumption for electric supplies and paid charges towards power not actually consumed resulting in avoidable payment of ₹ 1.14 crore **(Annexure 2.1).**

DOS replied in April 2023 that in-ordinate delay in establishing and commissioning of the integrated Titanium Alloy Tank Production Facility due to CoVID-19, the centre could not utilize the power in full. Even though it was decided to reduce the CMD from 5000 KVA to 2000 KVA, LPSC was unable to effect the same due to COVID-19 in a timely manner.

The reply is not acceptable as the proposal to reduce the contract demand was approved by competent authority during the COVID-19 period in November 2020 but LPSC-B of DOS submitted the application to BESCOM in April 2022 after delay of 16 months. Thereafter, the electricity authorities reduced the contract demand in one and a half months' time only i.e by June 2022.

Thus, non-realistic assessment of the contract demand of electricity by LPSC-B, a unit of DOS had resulted in avoidable expenditure of ₹ 1.14 crore.

2.2 Sub optimum utilisation of the capacities of GSAT-18 Satellite

Department of Space launched GSAT-18 Satellite in October 2016. The satellite could not be utilised fully and DOS incurred avoidable expenditure of ₹ 17.27 crore on hardware and launch services of GSAT-18 Satellite.

As per Rule 70 (iii) of GFR 2017, the Ministry/Department is responsible for effective, efficient, economic and transparent use of its resources. Further, Rule 70 (ix) stated that the Department shall take effective and appropriate steps to ensure to collect all moneys due to the Government and avoid wasteful expenditure. DoS issued financial sanction for development of GSAT-18 satellite for ₹ 1022 crore in May 2015. To ensure the efficient use of the space assets of DOS, the communication satellites shall be efficiently planned for its orbital slots.

The satellite capacity of GSAT-18 satellite is 48 transponders[5]. The transponders are 24 C Band, 12 Extended C Band and 12 Ku Band transponders. As INSAT- 3C reached its end of life in the last quarter of 2016 and INSAT- 4CR in the second quarter of 2019, GSAT-18 was planned as a replacement for the C Band/ Extended C-Band of INSAT-3C Satellite and for 'Ku Band' INSAT-4CR satellite. The existing VSAT[6] services of Extended C Band Transponders of INSAT-3C Satellite were to be shifted to GSAT-18 Satellite.

DOS launched GSAT-18 in October 2016 on an urgent basis through a procured launcher to meet the immediate requirement of protecting the existing users/ services of INSAT-3C in its C and Extended C Band since the satellite is reaching its end of life in Nov 2016.

Audit, however, observed that six extended C-Band transponders of GSAT-18 satellite were not put to use since its launch as these transponders were already available in GSAT-14.

[5] *Transponders are electronic devices on a communication satellite which facilities communication from source to destination.*

[6] *Very Small Aperture Terminal {VSAT) services*

Audit further observed that the expenditure incurred towards the realisation of hardware for these six Extended C Band transponders and its external launch service cost was avoidable. The cost of the hardware[7] was ₹13.53 crore and its launch service cost was[8] ₹ 3.74 crore.

DOS stated (Feb 2023) that the expected revenue in these five years is substantial and would be ₹117 crore. DOS added that the cost of deployment of additional six extended C Band transponders after the end of life of GSAT-14 satellite (September 2027) in a separate satellite to provide continuity of services would be substantial. DoS further stated that assuming GSAT-18 did not carry these additional 6 Ext C band transponders and these transponders were to be carried on a separate satellite for providing continuity of service, the expenditure would be much higher towards building the satellite and launching it.

Reply of DOS/ISRO need to be viewed in light of the fact that Extended C band spectrum available at 74^0 E orbital slot can accommodate only 12 transponders for services over India. When GSAT-18 with 12 transponders was launched, GSAT-14 with 6 transponders was in operation, rendering 6 transponders of GSAT-18 idle for time being. It is also pertinent to mention that GSAT-14 satellite has a total of 12 transponders including six Ku Band and six Extended C band and would need continuity after its life in 2027. Thus DoS could plan the placement of transponders in an optimised manner.

Thus, due to improper planning and absence of any mechanism to anticipate the existing capacity has resulted in a situation where six transponders of GSAT-18 are lying unutilized.

2.3 Short closure of project for the development of Special Grade Carbon Fibre

VSSC undertook a project to develop Special Grade (T 800 grade) Carbon Fibre to indigenise and ensure continuous supply for its programmes. The MoU was however short closed due to improper planning and lack of clarity on availability of resources (facility, financial and manpower), required for the project resulting in infructuous expenditure of ₹ 4 crore.

Vikram Sarabhai Space Centre (VSSC), Thiruvananthapuram a unit of Indian Space Research Organisation of Department of Space is mandated for the design and development of launch

[7] *The total cost of 48 transponders carrying payload of GSAT-18 is ₹ 108.20 crore. The cost of six extended C-band transponders would be ₹ 13.53 crore.*

[8] *The weight of six extended C Band transponders is 29.92 kg (weight of 36 C-Band transponders is 179.5 kg, and launch service at the cost of $ 18782 per kg for 29.92 kg would be $ 561957.44 which works out to `₹ 3.74 crore with the conversion on the date of launch 5 October 2016 (₹ 66.63 per 1 US S)*

vehicle programme. VSSC procures launch vehicle consumables for the program from vendor on proprietary basis. VSSC imports carbon fibres (T 800) for its launch vehicle programme.

National Aerospace Laboratories (NAL) of Council of Scientific and Industrial Research[9] had established (July 2004) an integrated facility for making Carbon Fibres, developed a process for T 300 grade fibres and has facilities for processing special grade carbon fibres. VSSC therefore signed a Memorandum of Understanding with NAL in Feb 2006 to develop the process technology for special grades of carbon (T 800 grade) fibres for space use as an import substitute. The project was to be completed by September 2007 which was extended five times up to March 2015. An amount of ₹3.50 crore was paid (Feb 2006) on signing the MoU towards 'facility upgradation and development work' and another ₹ 50 lakh subsequently requested by NAL was released (Feb 2009) towards 'Manpower for the developmental work'.

As per the MOU, NAL was to supply special grade Carbon Fibres to VSSC initially for five years and continue thereon. Further, the MoU also included provisions related to Intellectual Property Rights (IPR) of the project. The Intellectual property that is knowhow/ process generated was to be jointly owned by NAL and VSSC.

Audit observed that due to delays in procurement of equipment and other technical problems that occurred during the execution, the project had to be extended five times upto 2015 which was indicative of improper planning. Further, despite repeated extensions, NAL could not develop the special grade (T 800 grade) Carbon fibres due to its inability to support the project in terms of manpower. VSSC and NAL mutually agreed (July 2019) to short close the MoU. NAL did not pursue the activity after October 2015. In a review meeting of the project held in July 2019, it was decided to short close the MoU without extension considering the huge investment and time required for further development in the project and pre-occupation of the NAL team with the setting up of carbon fibre plant for DRDO and BARC.

As per the MOU the Joint Review Committee (JRC) consisting of members from NAL and VSSC was to review the project once every three months. Audit observed that during the period from February 2006 to May 2019, the JRC meetings were held continuously up to the end of year 2007. However, the meetings of the JRC were not held on regular basis in the subsequent period. Review

[9] ***A Central Autonomous Body under Department of Scientific and Industrial Research***

meetings were held only once or twice in each year during the period 2008 to 2016. After 2016, the JRC met only once in 2019.

A committee appointed by Director, VSSC visited NAL facilities and recommended (November 2005) that NAL has the expertise and capability to develop special grade carbon fibre to the requirement of ISRO. However, NAL replied in (Dec 2022) that the equipment to improve the carbon fibre properties to the requirement of ISRO are in the technology denial regime and sufficient indigenous expertise is not available to develop the equipment.

Thus, improper planning and lack of clarity on resource availability (facility, financial and manpower) required for the project, finally resulted in short closure of the project and the expenditure of ₹ 4 crore remained largely infructuous.

VSSC replied (October 2020) that the development of T-800 grade of carbon fibre require significant funding and establishment of a production facility in an industrial setting. VSSC added (October 2021) that NAL could not fully accomplish the specification as required by VSSC. Even though NAL came out with a carbon fibre which was better than its T300 grade, it did not reach the required level of T 800 grade.

DOS replied (Jan 2023) that due to uncertainty of achieving the desired results along with difficulty of NAL to support the project in terms of manpower it was decided to short close the MoU.

Reply of VSSC/DOS is not acceptable. NAL was not even able to successfully develop the material to the requirement of ISRO at its laboratory level. Further, no efforts were made to secure Intellectual Property Rights on the process know how developed as a result of the project.

CHAPTER – III

Department of Biotechnology

3.1 Inadmissible payment of ₹ 67.48 lakh on travelling allowance

In violation of provision of GoI order, DBT made an inadmissible payment of ₹ 67.48 lakh on traveling allowance for joining duty in respect of newly appointed scientists.

Department of Biotechnology (DBT) had set up 15 theme based Autonomous Bodies (ABs) to achieve the objectives of improving the knowledge base in Modern Biology and Biotechnology and to translate such knowledge to addressing societal goals.

During scrutiny of records, it was observed that the governing bodies of the ABs of DBT approved the proposal of reimbursement of the actual expenditure on conveyance and transportation of personal effects on first appointment of the Scientists within India. On scrutiny of records related with recruitment of new scientist and reimbursement of travelling allowance it was observed that out of 15, Ten ABs of DBT reimbursed the amount of ₹ 67.48 lakh to the newly recruited scientists as per details mentioned in **Annexure 3.1**.

Supplementary Rule 105 provides that travelling allowance is not admissible to any person for the journey to join his first post in Government service with exception[10] to scientist working abroad who has been selected for appointment under Government of India. Although Governing Bodies (GB) had no power to make rule/ provision to payment of TA in respect of newly appointed scientists but based on the recommendations of the respective Governing Bodies, DBT reimbursed the conveyance and transportation charges to newly recruited scientist to the tune of ₹ 67.48 lakh.

DBT in its reply (February 2023) stated that Institute for Stem Cell Science and Regenerative Medicine, Bangalore has already recovered part of the expenses reimbursed of ₹ 1.60 lakh from the concerned individuals and orders of recovery shall be issued for the remaining scientists.

Thus, due to violation of provision of GoI order under SR 105 these ten ABs made payment of ₹67.48 lakh on traveling allowance for joining duty in respect of newly appointed scientists.

[10] ***SR 105 provided that "Indian Scientists/ Technical Officers working abroad may on their selection for appointment under the Government of India be allowed air passage by Economy (Tourist) class for scientist/ technical officer and members of his family from the country where he is working to port of disembarkation in India"***

CHAPTER – IV

Department of Scientific and Industrial Research

4.1 Deficient contract management leading to avoidable expenditure of ₹ 94.09 lakh

NCL, Pune could not safeguard its financial interests by not awarding contract to lowest bidder leading to avoidable expenditure of ₹ 94.09 lakh.

National Chemical Laboratory (CSIR-NCL), Pune established in 1950 is a constituent laboratory of Council of Scientific and Industrial Research (CSIR). NCL had been operating a medical dispensary since 1952 for its employees, pensioners, family pensioners and their dependents.

CSIR-NCL, Pune floated a tender (May 2015) for dispensing medicines on credit basis to their regular employees, pensioners and their dependent family members and entered (January 2016) into the contract with vendor for providing medicines on credit basis as per the stipulated terms and conditions for the period 02.01.2016 to 01.01.2018. As per the terms of agreement, discount of 11.97% on the maximum retail price was to be applied to the medicines sold.

Audit observed that though, the contract period was scheduled to expire in January 2018, NCL floated fresh tender only in April 2019, after a delay of more than a year, meanwhile continuing to use services of existing vendor. The Technical Evaluation Committee (TEC) constituted by NCL declared (July 2019) all three bidders as technically qualified and based on the financial bids, declared another vendor as the bidder offering the highest discount of 27% on the MRP for dispensing of medicines on credit basis for the period September 2019 to August 2021. However, just before letter for awarding contract to vendor could be issued, representations from other two bidders regarding 'No Conviction Certificate (NCC)' were received in August 2019. Audit further observed that TEC initially reaffirmed its stance on technical competency of successful bidder and opined that the representing unsuccessful bidders may be suitably responded on advice of legal counsel and tendering process may be concluded by issuing award letter to the successful bidder. However, NCL asked (September 2019) vendor to submit NCC for all of its outlets in Maharashtra within 15 days despite the fact that tender terms merely asked that the prospective bidders must not have been convicted by State Drug Authorities, to which vendor already submitted the required certificate. In response, vendor requested (September 2019) for 45-50 days to arrange for certificates for all the outlets. However, such request of vendor was turned down and NCL disqualified vendor, stating that it did not submit NCC for the remaining outlets within the stipulated time period.

Audit further noticed that between September 2019 to July 2021, NCL tried twice for the tender but each time could not process the same for reasons such as criteria of minimum annual turnover and bidders to be a limited company registered under the Companies Act, 1956 or the bidder to have a minimum continuous experience of at least three years in providing pharmacy services in Govt./Semi Govt./Autonomous Bodies/PSUs not being met or offered discount not being competitive enough. NCL floated another tender (July 2021) through CPP portal and the contract was awarded to another vendor (September 2021) for 36 months w.e.f. October 2021 with a discount of 24.75%.

Audit observed that even this time NCL did not mention the requirement of obtaining a 'No Conviction Certificate' in respect of all outlets, in case a bidder had multiple outlets, as asked from vendor, the previous time after the TEC had completed its evaluation. Further, the rationale for imposing a new term on successful bidder and then disqualifying it by providing a very limited time window for compliance to the new clause could not be understood. Meanwhile, NCL kept using the services of existing vendor.

Audit also noticed that during September 2019 to September 2021, gross value of medicine (MRP) supplied by vendor was ₹ 6,25,99,733/-. Thus delay in finalization of tender and price discovery for supply of medicines resulted in a scenario wherein NCL had to incur additional expenditure of ₹94,08,740.[11]

CSIR in its reply (January 2023) reiterated the fact mentioned above without any justification for the fact that a new clause was imposed on a successful bidder on a discretionary basis, which resulted in avoidable loss of ₹ 94.09 lakh during September 2019 to September 2021 towards differential amount of discount.

[11] ***₹6,25,99,733*15.03%(27%-11.97%)=₹ 94,08,740/-***

CHAPTER – V

Ministry of Environment, Forest, and Climate Change

5.1 Infructuous Expenditure of ₹ 1.04 crore

Lack of co-ordination and in-effective monitoring by MoEF&CC led to non-establishment of Pilot Plant by the industrial partner resulting in infructuous expenditure of ₹ 1.04 crore.

Ministry of Environment, Forests and Climate Change (MoEF& CC) under the scheme "Development and Promotion of clean technology and waste minimization strategies" sanctioned (December 2013) a project, "Technology for Development of polyols form plant based non-edible oils" jointly to Indian Institute of Chemical Technology (IICT), Hyderabad and an Industrial partner at a total cost of ₹ 2.58 crore. The duration of the project was two years. The deliverables were development and commercialization of eco-friendly polyols based on pilot plant studies. While the scope of IICT was to develop technology of polyols, the Industrial partner was to design and install Pilot Plant in its premises and upgrade the technology. MoEF&CC released the first instalment of ₹ 31 lakh to IICT and ₹ 64 lakh to Industrial partner in February 2014.

MoEF&CC in its sanction (December 2013) mandated that an MoU defining roles and responsibilities of IICT and Industrial Partner was to be signed. Audit, however observed that no such MoU between the firm, IICT and MoEF&CC was signed prior to commencement of the project. A bipartite agreement between IICT and Industrial partner was only entered in November 2017 after a lapse of almost six years from the project sanction. Additionally, there was lack of clarity in terms of deliverables in project proposal and release of funds was not tied to any intermediate milestones. The Project Monitoring Committee (PMC) in its first meeting held in September 2014 also raised this issue. In the same meeting, the Committee also expressed concern over non-review of design of pilot plant by the Competent Committee and issues relating to financial safeguards.

Audit further observed that IICT, though completed the development of process know-how for two polyols in February 2015, but could not demonstrate the technology since pilot plant was not erected by the Industrial partner. The negligence of the industrial partner in setting up the pilot plant led PMC to impress upon MoEF&CC to defer the release of second installment to Industrial partner till it was determined beyond doubt through series of reviews that the firm could deliver the objective and else, the risk would be very high for the funding agency.

The Ministry, however, released the second instalment of ₹ 20.50 lakh and ₹ 40.00 lakh to IICT and Industrial partner respectively in October 2016 and December 2016 after evaluating pending tasks and project duration was extended twice till October 2017 with the condition that no further extension would be allowed.

However, the pilot plant was not set up by the industrial partner even after the receipt of second installment. The technology of polyols developed by IICT at a cost of ₹ 50.94 lakh was not commercialized even after a lapse of more than seven years of sanction of the project rendering entire expenditure of ₹ 1.04 crore released to Industrial partner infructuous.

MoEF&CC (January 2023) stated that the firm has been asked thrice in June 2022, July 2022 and October 2022 to set up the plant, demonstrate the production of all polyols and get the polyols evaluated by IICT, but there was no response from the industrial partner. Finally, in January 2023, MoEF&CC has issued an ultimatum to the industrial partner to demonstrate the project before the PMC and complete the project within a 90 day time frame.

The reply need to be viewed in light of the fact that even as of April 2023, the plant has not been setup, defeating the purpose of the project.

Hence, lack of co-ordination and in-effective monitoring by MoEF&CC led to non-establishment of Pilot Plant by the industrial partner and infructuous expenditure of ₹ 1.04 crore besides objectives of development and commercialization of eco-friendly polyols based on pilot plant studies were not achieved.

5.2 Infructuous expenditure of ₹ 3.43 crore on a Waste Destruction Plant

Inadequate monitoring of the project by Project Management Committee of the Ministry of Environment Forests & Climate Change, non-signing of any legal agreement with penalty clause by implementing agencies and poor financial management by the project partners resulted in infructuous expenditure of ₹ 3.43 crore on a project.

Ministry of Environment Forest and Climate Change (MoEF&CC) approved a project (September 2010) named "Demonstration Project of Plasma Technology for Waste Destruction" to a project proponent with collaboration of a foreign partner at a total cost of ₹ 6.26 crore. The project was to be established in GIDC estate, Ankleshwar, Gujarat. MoEF&CC was to provide ₹ 3.71 crore as grants-in-aid and the remaining share of ₹ 2.55 crore was to be borne by the industrial partner (₹ 1.25 crore by the foreign collaborator for providing RF torch of 150 KW and ₹ 1.30 crore by the industry). The objective of the project was to treat hazardous waste to produce electricity by using plasma technology. In addition to Gujarat Pollution Control Board (GPCB) being implementing and monitoring agency, the Ministry also constituted a Project Monitoring Committee (PMC) (October 2012) to monitor and evaluate the progress of the project. The project was to be completed in 18 months till September 2013, but was extended from time to time upto June 2018.

Foreign partner withdrew (April 2013) from this project and PMC (August 2013) decided to involve another foreign agency to provide the technology to project proponent for implementation of the project. Ministry released ₹ 3.34 crore between March 2012 and November 2016, against which an expenditure of ₹ 3.49 crore was reported upto August 2019.

Audit observed that in the original proposal, the cost of RF torch and power supply system, one of the key component of the plasma technology was to be borne by the industry partner. However, after the change of the foreign partner, an amount of ₹ 1.60 crore was paid by project proponent to foreign partner out of the funds provided by the Ministry. The RF Torch, delivered in March 2019 was bought at the expense of the Ministry, which is evident from the show cause notice served by MoEF&CC in January 2019. Further, the torch is lying uninstalled as foreign partner closed down their Indian office. It is also observed that tip part of the RF Torch has corroded due to lack of maintenance and needs repair.

Out of the contribution of ₹ 2.55 crore by project proponent, an expenditure of ₹ 2.42 crore (till August 2019) was reported towards building, land-development, salary, transportation, electricity connections etc. However, the expenditure on cost of land and building was not permissible as per the guidelines for the scheme.

Audit also observed that PMC meeting for the project was not held from April 2015 to January 2020. PMC in its meeting held in January 2020 indicated that the plasma plant was not functional. During the joint inspection of the site of project by the CPCB-Regional Directorate, GPCB vigilance team and GPCB (Regional Office-Ankleshwar) on 4th September 2021, it was observed that the plant was not in operation and machinery were in idle condition, and thus, concluded that the project was not commissioned. A trial run was performed by project proponent on 14th September 2022 and demonstration was done on 15th September 2022. On the trial run report, CPCB and PMC members pointed out that the project is in extremely bad shape and it did not meet its objectives.

MoEF&CC (January 2023) stated that the project proponent had been directed to demonstrate the project before the PMC and complete it within a time frame of 90 days as a final opportunity. The reply of the Ministry implies that the project has not been commissioned so far.

Hence, due to lack of monitoring by PMC and absence of any legal agreement defining clear responsibilities with penalty provisions, the project to demonstrate treatment of hazardous waste to produce electricity by using plasma technology could not be established. This has resulted in unfruitful expenditure of ₹ 3.43 crore including expenditure of ₹ 1.60 crore for procurement of RF Torch besides non-achievement of associated benefits.

CHAPTER – VI

Ministry of New and Renewable Energy

6.1 Infructuous Expenditure of ₹ 13 crore

Non- adherence of terms and conditions of sanction order by IICT and deviations from the envisaged target led to termination of a project after incurring expenditure of ₹ 13 crore.

Indian Institute of Chemical Technology (IICT), Hyderabad approached Ministry of New and Renewable Energy (MNRE) with a project proposal for developing cost effective, durable and more efficient Dye Sensitized Solar Cell (DSSC)[12]. The project was a collaboration with seven other CSIR laboratories and IICT was designated as Nodal laboratory. The project was sanctioned in December 2011 at a total cost of ₹ 42.32 crore for duration of four years. The envisaged output was 12% efficiency for DSSC test cell device and 7% efficiency for modules. MNRE released ₹6.00 crore as first installment in April 2012 and second installment of ₹ 7.00 crore in August 2014.

Audit observed that the project was reviewed in November 2016 by Project Monitoring Committee of MNRE and it was noticed that efficiency achieved by the cell was only 7% against 12% envisaged. The Committee also observed availability of insufficient data regarding stability of the cell. The Committee advised IICT to submit definite work plan to ensure completion of the project. The Committee also recommended release of balance funds if IICT justified requirement of additional equipment.

The project completion date was extended to May 2017. Meanwhile, IICT submitted the revised budget proposal demanding at least ₹ 9.80 crore to complete durability studies. MNRE stated (January 2023) that no funds were released by MNRE due to the poor progress of the project and IICT did not submit utilisation certificate and statement of expenditure (SoE) for the funds released. Further, MNRE found that IICT did not comply with the terms and conditions stipulated in the Sanction order issued for the project. The experts after reviewing the final project report found that IICT deviated number of issues. Hence, with the limited funds released by MNRE, IICT

[12] *The dye-sensitized solar cells (DSSC) provides a technically and economically credible alternative concept to present day junction photovoltaic devices.*

could develop test cell device of far less efficiency than the targeted efficiency of 12% and targeted durability of 5000 hours.

IICT was forced to terminate the project in May 2017 without completing durability studies. The main purpose for addressing the durability issue hindering commercialisation for which the project was undertaken was not achieved. IICT could not approach industries for commercialisation since required durability of 5000 hours was not achieved.

Thus, the project was terminated as the ultimate objective[13] of developing a Eco friendly technology was not achieved due to deviations in a number of issues[14] and non-adherence of terms and conditions of the sanction order.

IICT replied (January 2023) that MNRE did not release further grants and therefore it could not achieve 100 percent objectives of the project. The Institute further stated that while working on DSSC technology, it initiated R&D activity in another technology namely Perovskite Solar Cells and progressed quite well and also generated scientific knowledge in terms of publications.

The reply of IICT is not tenable as the progress of the project was poor and progress reports were not being submitted in time by IICT. Further, IICT did not furnish overall statement of expenditure (SoE) and utilization certificate (UC) for the amount released to IICT. Audit also noticed that the Experts after reviewing project completion report considered research activities carried-out by IICT on another technology namely Perovskite Solar Cell and publication of some papers were also in deviation of the project implementation.

Thus, non- adherence of terms and conditions of sanction order by IICT and deviation from the envisaged target led to termination of project after incurring expenditure of ₹ 13 crore.

Ministry (MNRE) has accepted the audit comment in their reply (January 2023).

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[13] ***The objective of project mentioned in Sanctioned order was to develop cost effective, durable and efficient DSSC besides development of modules with long durability by implementing a holistic approach of integrating novel materials with knowledge-intensive characterization and processes***

[14] ***The High Level Committee after reviewing the final project report (Sep,2017) mentioned number of issues i.e,, goal set by Principal investigator and his group has not been achieved during the specified period of execution of the project and the efficiency obtained in a very small area 0.25 cm2 is not quite high and the scaling up the area as proposed in the project timeline could not be obtained. The research activities carried-out by IICT on another technology namely perovskite Solar Cell and publication of same papers were in deviation from the target. It was concluded that the efficiency of DSSCs is very less compare to other technologies (considering the same active area) capable of room temperature production and with much higher stability than DSSCS, it is not worth investing more in this field for the trial of scaling up from and it was not good for techno commercial aspects.***

CHAPTER – VII

Department of Science and Technology

7.1 Avoidable payment of ₹ 76.75 lakh as management fee due to defective agreement

Technology Information, Forecasting and Assessment Council (TIFAC) entered an MoU with SIDBI for management of project loans. The agreement allowed SIDBI to charge yearly management fee on the initial disbursement amount rather than the reducing balance. Further, SIDBI kept charging management fee even when the projects were financially settled.

Technology Information, Forecasting and Assessment Council (TIFAC) is an Autonomous Body under the administrative control of Department of Science and Technology (DST). The Standing Finance Committee of DST approved (May 2010) the proposal of TIFAC for creation of 'Technology Innovation Fund' towards initiating joint TIFAC -SIDBI Technology Innovation Programme with corpus fund of ₹ 30.00 crore. The purpose of creation of this fund was to financially support development-cum-demonstration of innovative technology projects.

A Memorandum of Understanding (MoU) was executed (November 2010) between TIFAC and SIDBI for management of the Fund. As per Clause 9 of the MoU, a fee of one per cent of the amount disbursed by SIDBI towards project implementation was agreed to be charged by SIDBI towards management of the fund.

The proposed corpus fund of ₹ 30.00 crore was to be placed by TIFAC at the disposal of SIDBI. The Fund was initially for a period of ten years from the date of signing of this MoU, which was further extended to 31 October 2025. As per MoU, SIDBI had to lend the money to companies during the currency of the Fund. It would continue to recover the outstanding loans after the expiry of the life of the fund.

During 2011-22, a total sum of ₹ 21.46 crore[15] was disbursed by SIDBI as loan, under 27 projects approved by TIFAC and against that repayment of loan of ₹ 15.75 crore was received. Further, ₹ 1.59 crore was charged by SIDBI as management fee towards services rendered for the period 2011-22.

Audit observed that Clause 9 of MoU pertaining to booking of management fee did not protect the interest of TIFAC, as it allowed SIDBI to charge management fee on the disbursed loan amount at

[15] *since creation of Fund to till 31 March 2022*

the rate of 1 per cent. However, it did not factor in the repayment of the loan amount and project closures.

As a result, it was observed that during 2012-22, SIDBI charged an excess management fee (including Service Tax) of ₹ 76.75 lakh which included projects, wherein ₹ 15.75 crore has already been received as repayment and fully settled loan of ₹ 9.56 crore. Audit further observed that of these 24 projects[16], 11 projects[17] under which loan amounting to ₹ 9.56 crore was disbursed, were fully settled during 2014-15 to 2020-21, yet management fee (₹ 35.23 lakh) on these settled loans were still being charged by SIDBI as of March 2022. Further, MoU also allowed SIDBI to charge management fee every year, not only on these settled loans of ₹ 9.56 crore but also on outstanding loans which would be settled during April 2022 to October 2025.

Thus, Clause 9 of the MoU was not incorporated by TIFAC in a manner to protect the government interest. As a result of this clause an avoidable payment of ₹ 76.75 lakh was made to SIDBI, towards management fee (including Service Tax), as of March 2022 and further payments up-to 2025.

DST, while agreeing with the audit partially (November 2022) replied that SIDBI has decided to charge the management fee at the rate of 1 per cent of the loan amount disbursed only for live accounts w.e.f. 01st October 2022 and the process of making amendments in the MoU is also being initiated. However, recent arrangement still allows SIDBI to charge one percent management fee on the loan amount which was initially disbursed amount.

Therefore, the clause 9 of MOU requires revision to allow calculation of management fee on reducing balances rather than the principal amount.

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[16] ***In three projects repayment of loans was yet to start***

[17] ***Out of 27 projects***

CHAPTER – VIII

Department of Atomic Energy

8.1 Functioning of Institute for Plasma Research

IPR could not complete the projects in time and exceeded their planned completion period by 21 months to 54 months. It could not achieve the intended objectives of the projects though projects were declared as complete with many extensions and non-achieved objectives were migrated to new projects with further cost implications. Though 16 technologies were developed it could not transfer them even after one to eight years of development.

8.1.1. Introduction

The Institute for Plasma[18] Research (IPR), Gandhinagar, Gujarat, headed by Director, is a premier scientific research institute of India primarily studying plasma physics[19] and its applications. IPR established as an autonomous institute in 1986 under the Department of Science and Technology (DST), Government of India was brought under the administrative control of Department of Atomic Energy (DAE) in 1995.

IPR is involved in the Research and Development activities such as Studies of high temperature magnetically confined plasmas, fundamental studies in plasma physics, fusion reactor relevant technologies and plasma technologies for Industrial and Societal applications. These activities are carried out in its main campus at Gandhinagar and its divisions viz. Facilitation Centre for Industrial Plasma Technologies (FCIPT), Gandhinagar; The International Thermonuclear Experimental Reactor (ITER)-India, Gandhinagar and Centre of Plasma Research (CPP-IPR) Sonapur, Assam.

As of March 2022, IPR had 682 sanctioned posts, of which 621 were for scientific & technical personnel and 61 were for administrative personnel. As against this, 483 scientific & technical personnel and 59 administrative personnel were in place. The total annual expenditure during 2017-18 to 2021-22 varied between ₹ 621.98 crore to ₹ 937.93 crore.

8.1.2 Scope of Audit and sample size

The subject specific compliance audit covered closed as well as ongoing projects. All the 13 Plan Projects and a sample of 13 external and collaborative projects out of 27 such projects undertaken between 2017-18 & 2021-22 were analyzed during the audit. Audit also examined documents related to performance of

[18] *Plasma is a state of matter that is often referred to as fourth state of matter, in addition to solid, liquid and gas.*
[19] ***Study of behaviour and properties of plasma***

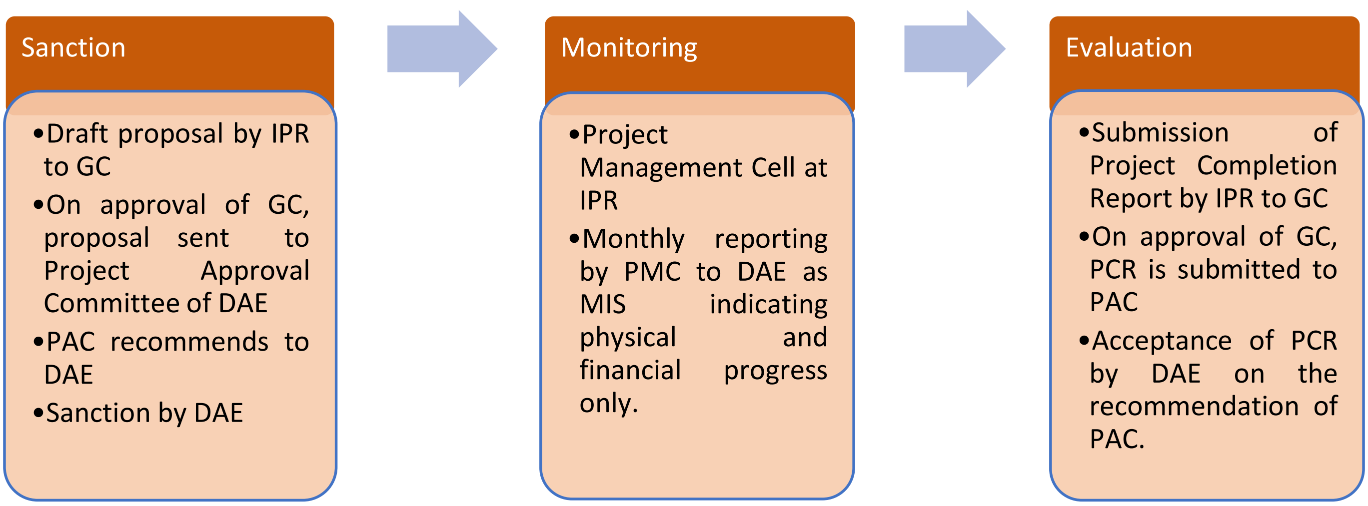
other critical functions of IPR like financial management, formulation and implementation of HR policies as per applicable rules, and effectiveness of internal controls during the period mentioned ibid.

8.1.3 Audit findings

Out of 13 Plan projects selected for audit scrutiny, five Plan projects were completed during the period 2017-18 to 2021-22 and 8 projects are still ongoing (March 2022). Audit observations related to management and achievement of objectives of these projects, issues in Human Resource Management and deficiencies in internal controls are discussed in succeeding paragraphs.

8.1.3.1 Project Management and delivery

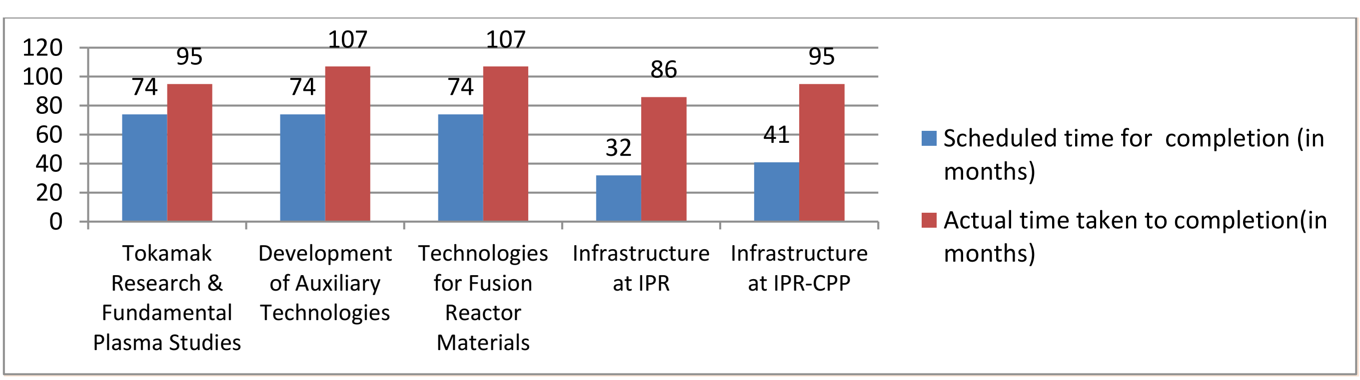
The process flow of project approval, monitoring and final evaluation at IPR is indicated below and observation related to management of projects in completed and ongoing projects follows:



- **Deficiencies in completed projects.**

  - **Delay in completion of projects**

Audit examined five projects completed during the period 2017-22 and observed that not even a single project was completed within the scheduled time. The following chart indicates the scheduled time for completion for these projects as well as the actual time taken for completion.



From the chart, it can be seen that all five projects exceeded their planned completion period by 21 months to 54 months. Out of five, in two projects the delay in completion was more than double the scheduled completion period.

Audit observed that DAE does not have any prescribed guidelines for project management which serves as a criterion for framing the project proposal, sanction of the project, mechanism to oversee implementation and periodicity of monitoring. Even though, IPR has a Project Management Cell for facilitating project activities, it does not maintain any documentation such as approval of GC, Minutes of PAC meetings, Minutes of monitoring committees. In the absence of proper documentation audit could not draw assurance about the efficacy of monitoring mechanism and its possible impact on project outcome. Even though PMC reports to DAE on a monthly basis, the report merely indicates physical and financial progress, devoid of any details about the constraints being faced in project and expected delays. Audit further noticed that rather than continuous monitoring of the project against their milestones, PAC was being apprised of the reasons for stage wise delays in an ad hoc manner. In absence of records related to PAC meeting, it is difficult to ascertain the actual reasons for delays in various stages of these projects, leading up to the overall time overrun.

DAE stated (September 2022) that the Director of IPR reviews the projects periodically. However, PMC merely forwards the MIS reports to DAE and nothing on records indicated any periodic monitoring by Director, IPR. DAE in its response (May 2023) has agreed to improve the existing mechanism for review of projects.

- **Non-achievement of intended objectives.**

Audit examined the five projects completed during the period 2017-22 and observed that two projects namely Infrastructure at IPR and Infrastructure at CPP-IPR that were related to infrastructure projects and one project i.e. Tokamak Research & Fundamental Plasma Studies broadly achieved their intended objectives. The audit observations for remaining two projects are as under:

(a) Project titled “Technologies for Fusion Reactor Material, Blankets, Shields, Diverter & Fuel Cycle” DAE sanctioned (February 2013) the Project titled “Technologies for Fusion Reactor Material, Blankets, Shields, Diverter & Fuel Cycle” at an estimated cost of ₹ 230 crore with a scheduled date of completion as March 2019. Subsequently, DAE extended the timeline of the project four times with final completion date of December 2021 and downward revision of project cost from ₹ 230 crore to ₹ 200 crore. IPR declared the project complete after the Project Completion Report (PCR) was submitted by GC to PAC but final approval of DAE is still awaited

(September 2022). An expenditure of ₹ 189.49 crore had been incurred on the project till December 2021.

Audit observed that the project had seven specific deliverables. Project completion report revealed that IPR could not achieve four out of these seven deliverables, even though they were being stated as achieved. The detailed status of these deliverables is as below:

Deliverables	Status as per PCR	Actual status	Department's reply
Technology concept development and prototype for tritium fuel cycle	Achieved	IPR does not have the necessary permission to handle tritium so technology concept development and prototype for tritium fuel cycle could not be achieved.	DAE stated (May 2023) that technology concept and prototype development phase were performed with hydrogen/deuterium. However, the final system development & its testing with tritium will be taken up in the tritium lab at BARC.
Medium energy (5 MeV) ion accelerator for material science research	Achieved	Due to major change in the project design, 5MeV ion accelerator for material science research could not be achieved.	DAE stated (May 2023) that it was decided to utilize an indigenously developed RF source with 1MW power at IPR.
ODS Ferritic/Martensitic steel alloy plates	Achieved	Due to technological gaps and lack of large-scale production facility, ODS Ferritic/Martensitic steel alloy plates could not be achieved.	DAE stated (May 2023) that the proposed work could not be extended further due to technological gaps in the production of large scale ODS plates.
High pressure helium cooling facility	Achieved	Phase-2 activities are being executed under a new project, High pressure helium cooling facility could not be achieved.	DAE stated (May 2023) that Phase 2 objectives for system acceptance & testing is in progress.

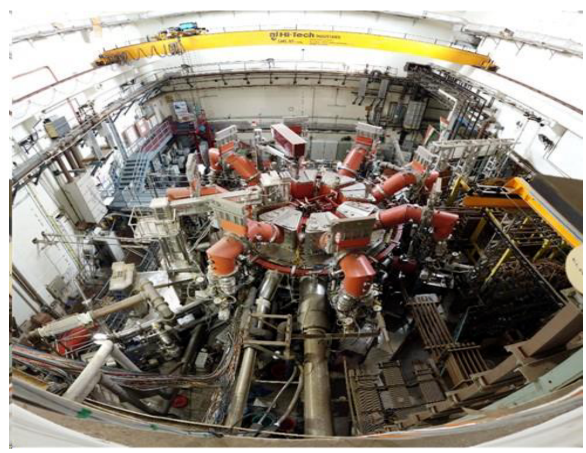
Audit further observed that the project was divided into seven sub projects. One of such sub-project was "Development of Radio Frequency Quadrupole (RFQ) for Accelerator" valued at ₹10.00 crore. It was intended to accelerate the ion beam which is used to study the damage in materials through ion irradiation. This sub-project was dropped after incurring a total expenditure of ₹ 9.11 crore on procurement of its components. The RFQ Accelerator could not be fabricated and commissioned due to vendor's limitations in precision machining and assembly of large-size components and uncertainty in actual delivery time. Audit also observed that RFQ accelerator had no direct linkage with the apex project.

DAE while accepting (May 2023) that the facility for studying material damage through ion irradiation could not be achieved, stated that the amount of ₹ 9.11 crore spent is being utilized at IPR in other projects.

The response of DAE highlights the systemic flaw in project management wherein, even after many extensions, when project deliverables are not achieved, they are being migrated to new projects with further cost implications. Further, sub projects under an apex project are being included without any direct bearing on the objectives of apex project.

(b) Project titled "Development of Auxiliary Technologies for Fusion-Magnets, RF, NB and Plant Systems."

DAE sanctioned (February 2013) a project titled "Development of Auxiliary Technologies for Fusion-Magnets, RF, NB and Plant Systems" at an estimated cost of ₹ 251 crore with scheduled date of completion as March 2019. In April 2019, the project cost was revised down to ₹ 170 crore and in November 2021, the project completion date was extended up to December 2021. The main objective of the project was two-fold, first to commission the existing heating and current drives system on SST-1 tokamak and upgrade them for higher power and higher magnetic field operation, and second to develop enabling technologies for larger tokamak, like SST-2 or DEMO.



Steady State Superconducting Tokamak-1 (SST-1)
Source-IPR, Gandhinagar web-site

The project was declared completed in December 2021 with an expenditure of ₹155.40 crore. Audit observed that the project has 10 specific deliverables. Project completion report revealed that IPR could not achieve 5 out of these 10 deliverables, even though some of them were stated as partially achieved. The detailed status of these deliverables is as below:

Project deliverables	Status as per PCR	Actual position
Commissioning of 0.5 MW PNB system on SST-1 tokamak and development of upgrading heating power upto 1.7 MW.	Achieved	Integration of Positive Neural Beam system with SST-1 was deferred and upgrading power upto 1.7 MW is not achieved due to technical difficulties.
Development of Remote Handling and Robotics Technology (under sub-project no. 10).	Achieved	Remote inspection will be demonstrated in SST-1 when it is feasible. Thus, the fact remains that without successful demonstration of remote inspection it cannot be construed that ultimate objective has been achieved.
Development of 250 kV/1A DC power supply	Partially Achieved	The two out of three components were installed at site, however, third element could not be delivered by supplier due to technical issues hence-PO was cancelled.
Completion of Diagnostic Neutral Beam (DNB) source acceptance testing in Indian Test Facility (INTF) for installation and integration	Major acceptance test completed at factory level. Same shall be applied in INFT.	The manufacturing, integration, assembly and factory acceptance tests of the DNB source are expected to be completed by Q3 of 2023.
Development of Large Cryogenic Plant and Cryo systems	Not achieved	Due to technological challenges involved in the development of high capacity (1.3 kW) cryoplant, the scope had been reduced

DAE stated (May 2023) that due to challenges of unique and extraordinary tasks requiring availability of many rare type of high-end expertise, technologies, industrial capabilities & infrastructure, some of the deliverables were converted as new activities and some other deliverables were dropped.

The response of DAE again highlights the deficiency in project management, wherein not only projects are extending their timelines repeatedly but also the practice of migrating unfinished components to new activities with further cost implications.

- **Deficiencies in Ongoing projects**

  - **Delay in commissioning of Bio-Medical Waste Treatment Facility**

DAE sanctioned (September 2019) a project "Technologies for Industrial and Societal Applications", costing ₹ 52.00 crore with a scheduled date of completion as 48 months. The project included a sub-project titled 'Design, development and setting up of an advanced bio-medical waste treatment facility (BMWTF)' including 200 kg/hr plasma pyrolysis system at Homi Bhabha Cancer Hospital (HBCH), Varanasi. The total cost of this sub project was ₹ 10.47 crore with scheduled date of completion as December 2021.

Plasma Pyrolysis Technology
Source: IPR, Gandhinagar web-site

Audit observed that IPR placed a purchase order worth ₹ 85.10 lakh for design, fabrication, factory acceptance test and supply of waste feeder chamber and support structure and service platform for various components and sub- assemblies in October 2021, i.e. 2 years after due project sanction date, with the scheduled date of delivery as October 2022. Further, from December 2020 to July 2022 IPR procured a few items (power supplies, shredder and Graphite electrodes) valued ₹ 1.00 crore under this sub-project. IPR also had to construct a small shed by June 2021 which was essential for setting up the plasma pyrolysis system for initial operation which was then to be shifted to a Government Hospital for demonstration. However, the work order for shed had only been placed in June 2022.

Audit observed that delays in all these critical aspects of project led to overshooting the mandated completion date of December 2021 and intended benefits of providing advance bio medical waste treatment facility had not been delivered so far (September 2022).

DAE stated (May 2023) that some sub-systems have been procured and remaining are under procurement. It further stated that the system is expected to be commissioned at Facilitation Centre for Industrial Plasma Technology for testing by the end of 2023.

The fact remains that the sub-project milestones have been overshot and the desired benefits are not available.

- **Peer Review of IPR not conducted since 15 years.**

In terms of Rule- 229 (ix) of GFR 2017, Ministry shall put in place a system of external or internal peer review of autonomous organizations every three or five years depending on the size and nature of activity. Such a review should be the responsibility of the concerned administrative division of the Ministry/Department.

Audit observed (August 2022) that IPR had its last peer review in January 2007 and since then no peer review has been conducted for IPR. IPR completed Peer Review of two areas[20] in November 2022, at the instance of Audit and assured that review of three more areas[21]will be planned shortly.

System of peer review, particularly for research organization is a very critical process in strengthening efficiency and benchmarking systems and process flow with standards of peer scientific community.

- **Non-commercialization of technology transferred to Industry**

One of the mandates of IPR is to foster linkages between academic community of teachers and research workers at the Institute and Industry and other agencies through transfer of technologies developed in the Institute. One of its divisions viz. Facilitation Centre for Industrial Plasma Technologies (FCIPT) links Industries with IPR. FCIPT takes up development of plasma processing technologies from concept to commercialization.

Audit observed that during 2005 to 2022, IPR transferred only 13 technologies and except one technology viz Plasma Pyrolysis, there was not much demand for other technologies from Industries. Audit further noticed that during 2017-22, IPR could transfer only two new technologies to the industry. Further, it was observed in Audit that 16 technologies developed by IPR are yet to be transferred even after one to eight years of development.

IPR replied (September 2022) that technologies are commercialized effectively when the industry is provided with sufficient performance data of the technology and that the technology transfers being done by IPR are non-exclusive licenses[22]. IPR further assured (November 2022) to improve the performance demonstrations of technology in effective manner.

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[20] ***1. Societal and Industrial application and Outreach/BRFST 2. Plasma and Fusion Technology-II***

[21] ***1. Plasma and Fusion Technology-I 2. Tokamak Research and Fundamental Research 3. Academic Program***

[22] ***Non-exclusive licenses can be granted to as many licensees as the licensor desires.***

Reply of the IPR may be viewed in light of the fact that even after lapse of one to eight years from development of the technology, IPR could not provide sufficient performance data to Industry leading to non-transfer or commercialization of technology.

8.1.3.2 Deficiencies in Human Resource Management

Audit examined Management of Human Resources in IPR and noticed varied issues related to promotions, recruitments, fixation of pay and hiring of consultants. These issues are discussed, segment wise, in the succeeding paragraphs:

- **Absence of mandated approvals in management of Human resource**

Ministry of Finance (MoF) issued (October 1984) instructions that 'rules and Bye-laws of Autonomous Bodies (ABs) which are fully and or partly funded by the Government of India (GoI) should invariably incorporate clauses relating to the powers of the GBs of such organizations in matters of creation of posts, revision of pay and allowances of their staff and similar establishment expenditure and provide for prior approval of the Central Government in specific cases.' Further, in terms of Rule 4(2)(c) of Transaction of Business Rules of the Government of India, 'unless the case is fully covered by powers to sanction expenditure or to appropriate or re-appropriate funds conferred by any general or special orders made by the Ministry of Finance (MoF), no department shall, without the previous concurrence of the MoF, issue any orders which may relate to the number or grade of posts, or the strength of a service, or the pay or allowances of Government servants or any other conditions of their service having financial implications.'

DoPT stipulated (July 2007) that all appointments to the post of Chief Executive and for all appointments carrying a pay scale of ₹ 18,400- ₹ 22,400 and above (now Pay level-14 and above), in Central Autonomous Institutions, that are wholly or substantially funded by the Central Government should come under the purview of the ACC and needs the approval of ACC. DoPT further stipulated (September 2014) that 'in the absence of specific approval of ACC towards extension of services beyond the date of superannuation, an officer should stand retired on his date of superannuation and under no circumstances should the Ministry/Department concerned extend services beyond superannuation unilaterally without the approval of ACC.' Department of Atomic Energy (DAE) in its comprehensive guidelines for the merit promotion scheme for scientific and technical cadres stated that 'the cases of promotion of selected candidates to posts carrying Grade Pay up to ₹ 8900 (now Pay Level- 13 A) shall be approved in the Department'. Further 'the cases of promotion of selected candidates to posts carrying Grade Pay of ₹ 10,000/-, HAG & HAG^+ (now Pay Level- 14 and above) shall be processed and placed for approval before the ACC. Audit observations related to absence of mandated approvals are discussed below:

- **Excess payment worth ₹ 5.40 crore towards pay and allowances due to upward revision of pay**

Audit noticed (November 2022) that on recommendations (December 2013) of a high-level Panel, IPR revised the pay of 42 officials upwards from July 2014, without citing any rule provision. The above discrepancy was also pointed out by audit in August 2017 as part of compliance audit and IPR was requested to review the pay as per extant rules and to recover the excess amount. However, IPR has not initiated any action on the observation of the Audit.

In September 2021, an ad-hoc internal committee of IPR also observed that the basic salary of these 42 officials was fixed at a higher level with extra increments, for which they were ineligible.

On being pointed out by audit again in October 2022, IPR referred the matter to DAE in November 2022. In response, after examining the case, DAE instructed (December 2022) to rectify the pay and stop further excess payment. DAE also recommended recovery of the last five years' excess payment.

IPR stated (December 2022) that the rectified revised pay will be implemented w.e.f. 1.12.2022 recovery will be done in installments.

Thus, even though pointed out by audit at a very early stage, ad hoc approach adopted by IPR resulted in payment of inadmissible pay and allowances to the tune of ₹ 5.40 crore till March 2022.

- **Absence of approval from ACC**

Audit observed (November 2022) that one Scientific Officer (Pay Level- 14) had retired on superannuation w.e.f. 31.07.2021. However, IPR, with the approval of Governing Council granted him extension of two years of services beyond the date of his superannuation and paid an amount of ₹29.69 lakh (Upto October 2022) besides incurring a financial liability of ₹ 18.68 lakh for the balance tenure of appointment (Nov 2022 to July 2023). The extension of service by GC was not in order, as ACC was the competent authority to allow such extension.

On similar lines, Audit also observed (August 2022) that 26 Scientific Officers were promoted in Pay level-14 and above with the approval of Governing Council and the promotion proposals had not been forwarded to Administrative Ministry (DAE) for obtaining the approval of ACC.

DAE stated (May 2023) that as per the Memorandum of Association and Rules & Regulations, the Governing Council could frame the terms and tenure of appointments, rules of discipline and other conditions of service of the officers and staff of the Institute.

The reply is not tenable. As per DoPT's stipulations mentioned above, extension of service beyond the age of superannuation and promotion for officers in pay Level 14 and above would require approval of ACC. Reply also need to be viewed in light of the fact that IPR is fully funded from grants received by DAE and thus is bound to follow DoPT regulations received from time to time.

- **Lack of approval for Recruitment Rules**

DoPT stipulates (December 2010) that 'as soon as a decision is taken to create a new post/service or to upgrade any post or restructure any Service, action should be taken immediately by the Administrative Ministry / Department concerned to frame Recruitment Rules/ Service Rules therefore.'

Audit observed that IPR revised its Recruitment & Promotion Rules for Administrative staff in May 2019 with the approval of Governing Council and did not obtain concurrence of administrative ministry, DAE. Subsequently IPR recruited 12 officials and granted promotions to 51 employees under the administrative category from 2017-18 to 2021-22. In absence of approved Recruitment and Promotion Rules, these recruitments and promotions were not in order.

IPR stated (November 2022) that Recruitment & Promotion Rules for the administrative staff were approved by Governing Council.

However, the fact remains that approval of the administrative department, DAE has not been secured to the Recruitment and Promotion Rules.

- **Engagement of consultants**

Rule 178 and 180 of GFR 2017 states that the Ministries or Departments may hire external professionals, consultancy firms or consultants for a specific job, which is well defined in terms of content and time frame for its completion. Further, the engagement of consultants may be resorted to in situations requiring high-quality services for which the concerned Department does not have requisite expertise.

DAE circulated (April 2021) CVC's Circular of April 2021 to all its constituent units for compliance to bring transparency in works/purchase/consultancy contracts awarded on a nomination basis. The Circular enumerated that in some exceptional and inevitable circumstances[23], the contract may be awarded on nomination basis. The award of contract on nomination basis without adequate justification amounts to practices, eliminating competition, fairness and equity.

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[23] *During natural calamities and emergencies declared by Government where procurement is possible from a single source only*

Audit observed (September 2022) that during 2017-2022, IPR engaged three consultants on nomination basis and incurred an expenditure of ₹ 41.63 lakh towards their remuneration. Audit further observed that IPR did not make any effort for selection through open competitive bids. Further, the justification note did not record the fact that IPR did not have the requisite expertise. In absence of a valid justification, selection of consultants on nomination basis is in violation of CVC guidelines in this regard. Further, CVC guidelines for award of contract on nomination basis prescribes that details of all contracts awarded on nomination basis should be posted on organization website along with brief reasons for doing so. However, IPR did not post such details of contracts awarded on a nomination basis on its website.

DAE stated (May 2023) that in future, consultant will be engaged through due process existing in DAE.

8.1.3.3 Internal Control and Financial Management

Audit examined availability and efficiency of internal control mechanism at IPR as well as its financial management. The observations in this regard are discussed in succeeding paragraphs.

- **Avoidable expenditure of ₹ 0.60 crore due to delay in disposal of row houses**

Physical Research Laboratory (PRL), Ahmadabad purchased (March 1983) nine Row Houses in the Ruswi Park Society for the Plasma Physics Program, the erstwhile Project name of the Institute for Plasma Research. The row houses were allotted to IPR and utilized for residential purpose for many years since then. At present, row houses are not in a livable condition and need major structural repairs along with normal periodic maintenance, which is estimated to be very costly. Further, the Institute has now built Hostels, Students Accommodation and a Guest House on its main campus, and Ruswi Park row houses, being far from the Institute's campus, are not needed by the Institute.

IPR, in October 2014 constituted an Adhoc Committee with the approval of Governing Council (GC) for the disposal of the Ruswi park row houses. During the Adhoc Committee meeting in November 2014, the then PRL (invitee member) indicated that since the PRL purchased the row houses and it is also in need of such housing, it would be appropriate if PRL takes these row houses from IPR. PRL conveyed (March 2015) its willingness and interest to take over these nine row houses. IPR, in June 2015, put up a proposal to DAE for seeking approval for the transfer/handover the nine row houses in the Ruswi Park Society to PRL. In response, DAE stated (February 2016) that in terms of GFR provisions, the proposal needs the approval of the Cabinet and requested IPR to submit the Draft Cabinet Note (DCN) for the same.

Audit observed that IPR did not forward any proposal/DCN to DAE since February 2016 for further processing of disposal. Further, IPR conducted Structural Audit of the nine row houses through an outside agency in (May 2021), which recommended complete demolition of the building. Structural Audit report was also shared with Ahmadabad Municipal Corporation (AMC). Accordingly, in August 2021, AMC affixed the notice of dangerous building on Ruswi Park row-houses.

Audit further noticed that during 2016-17 to August 2022, IPR incurred an expenditure of ₹ 60,15,139/- towards Security Guards, property tax and electricity charges that could have been avoided if IPR had taken timely action in submission of a draft cabinet note.

IPR stated (October 2022) that below the Ruswi Park row houses, there are 11 no's of shops belonging to different owners, who are not known to IPR. Hence, the transfer of ownership to PRL might also require NOC from these owners. It further stated that while putting up the cabinet note, value of the assets must be known and it requires a clear identification of the assets, which is itself in doubt.

IPR's reply may be viewed in the light of the fact that though it had acquired the nine row houses from PRL long back, it did not initiate appropriate timely action to transfer the title of the property in the name of IPR. Further, IPR has not been able to gather information about the real owner of 11 shops, value and clear identification of the assets, till date despite having constituted two committees for disposal and renovation of nine row houses in October 2014 and July 2020, respectively.

Thus, lackadaisical approach on the part of IPR in disposing-off all the nine row houses of Ruswi park, resulted in avoidable expenditure of ₹ 60.15 lakh (upto August 2022).

- **Excess payment of ₹4.16 lakh due to lack on internal control**

IPR appointed a Project Technician in the Electronics and Instrumentation Group in October 2019. The said official proceeded to his hometown in May 2020 and never reported back to office. However, IPR continued to pay monthly remuneration (@26000 per month) to the official up to September 2021. IPR, in October 2021, wrote to the official to refund the excess amount of ₹ 4.16 lakh but no response has been received. A legal notice was issued to the official in April 2022 for recovery of amount, but it was returned undelivered.

Audit further observed that even though the official was absent from duty since May 2020, the reporting officer intimated the same only in October 2021, i.e. after the lapse of over 16 months, which highlights monitoring lapses on the part of reporting officer.

While accepting (May 2023) the fact, DAE stated that it is exploring legal options for recovering the amount from the incumbent.

- **Non-realization of fund amounting to ₹ 4.97 crore towards excess expenditure under externally funded projects**

Rule 26 of General Financial Rules (GFR), 2017 stipulates that the Controlling Officer has to ensure that the expenditure does not exceed the budget allocation. Further, Rule 61 stipulates that (i) the Accounts Officer shall not allow any payment against sanctions in excess of the Budget provisions unless there is specific approval of the Chief Accounting Authority.

Audit observed that IPR has incurred an excess expenditure of ₹ 4.97 crore (March 2022) over the actual receipts of funds under 14 externally funded projects. Audit further noticed that out of this excess expenditure of ₹ 4.97 crore, about ₹ 3.50 crore, 75% of total excess expenditure, is pending for settlement for over five years.

IPR stated (November 2022) that it incurred excess expenditure anticipating the release of balance funds by sponsoring agency.

Thus, improper financial management on the part of IPR led to excess expenditure over the actual receipt of funds.

8.1.4 Audit Recommendations

1. IPR needs to clearly map apex project, sub projects and project deliverable along with segmented cost and judiciously subsume unachieved project deliverables into future projects.
2. IPR needs to strengthen the functioning of Project Monitoring Cell by equipping it with resources and responsibilities for concurrent and insightful monitoring of project implementation.
3. IPR needs to get its recruitment rules approved by DAE and follow extant rules in matters of recruitment and promotion, particularly when it requires approval at administrative department level.
4. IPR needs to strengthen Internal Control mechanism and practices to avoid systemic issues related to administration and establishment.

8.2 Contract and Material Management in Nuclear Power Corporation of India Limited

Nuclear Power Corporation of India Limited (NPCIL) incurred additional expenditure towards price escalation, extension of insurance policies, extension of warranty charges and retention/ idling of manpower as it could not complete the contracts in stipulated time due to delay in making available the work front, drawings, and other requisite inputs. There were delays in processing of indents and implementation of Integrated ERP (including MIS) besides improper preservation of store items.

8.2.1 Introduction

8.2.1.1 Nuclear Power Corporation of India Limited (NPCIL), Mumbai

Nuclear Power Corporation of India Limited (NPCIL) is a Public Sector Enterprise under the administrative control of the Department of Atomic Energy (DAE), Government of India. It was registered as a Public Limited Company under Companies Act 1956 in September 1987.

At present, NPCIL operates 22[24]commercial Nuclear Power Reactors with an installed capacity of 6780 MW. Currently, NPCIL has eight[25] reactors under various stages of construction totaling 6200 MW capacity.

NPCIL is managed by a Board of Directors headed by the Chairman and Managing Director (CMD). The Directorate of Contracts and Materials Management (C&MM) under the control of Executive Director (ED) is responsible for providing goods and services for the nuclear power projects and stations. The C&MM units are located at eight[26] sites/stations.

The main role of the C&MM is procurement of equipment, materials, components, raw materials, plant & machinery, spare & services etc., as per the technical specification/requirements. It is also responsible for Management of stores i.e., receipt at site, storage and preservation of materials, equipment & spares, issuance of store and inventory control.

A thematic Audit on 'Procurement Contracts' of Nuclear Power Corporation of India Limited (NPCIL) was conducted during July 2013 to September 2013. The Audit findings in this regard had appeared under Para No. 1.3 (Chapter–I) of Report No 21 of 2015 of the Comptroller and Auditor General of

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[24] *Two Boiling Water Reactor (BWRs), 18 Pressurised Heavy Water Reactor (PHWRs) including one 100 MW PHWR at Rajasthan (RAPS-1), owned by DAE, Government of India and two Pressurised Water Reactor Type (WER)*

[25] *Two each at Kudankulam Nuclear Power Projects Unit (3 &4), Kakrapar Atomic Power Project (3&4), Gorakhpur Haryana AnuVidyut Pariyojana Units, (1&2) and Rajasthan Atomic Power Project Units (7&8)*

[26] *Tarapur (Maharashtra), Rawatbhata (Rajasthan), Kalpakkam (Tamilnadu), Narora (UttarPradesh), Kakrapar(Gujrat), Kaiga (Karnataka) ,Kudankulam (Tamilnadu) and Gorakhpur Haryana AnuVidyutPariyojana(Haryana)*

India. Audit had made three recommendations in the said report that were accepted by NPCIL in toto.

8.2.1.2 Scope of Audit

The scope of audit included examination of completed contracts during the period from 2016-17 to 2021-22, which were placed by C&MM, Mumbai upto March 2021 and ongoing contract as on 31 March 2022, which were placed upto March 2019[27].The records maintained by C&MM unit at Mumbai including Trombay Village Stores (TVS), data of stores located at Tarapur and Kakarapar were selected for detailed scrutiny.

Out of a total of 657 completed and ongoing contracts (valued ₹ 16415.23 crore), a sample of 94 contracts (valued ₹ 10090.83 crore) was selected on the basis of stratified random sampling method. The sample size selected for audit scrutiny is detailed in **Annexure-8.1.**

Audit also examined the extent of implementation of recommendations made in the earlier audit and assurances given by the management.

8.2.2 Action taken on recommendations made in last audit

Audit Report No.21 of 2015 had highlighted issues and made recommendations related to 'Procurement contracts of NPCIL', that were reviewed during the current Audit. Management of NPCIL submitted an action plan to implement the audit recommendations. The status of implementation of the action taken proposed by NPCIL is detailed in the table below:

Rec. No.	Audit recommendations	Action proposed by NPCIL on recommendations	Status of implementation
1.	The Company should make proper assessments of materials available in the inventory before floating the tenders and supply such materials to the contractors with due consideration to economy.	The usable materials will be considered for issue as fresh issue material in future projects with due consideration to economy.	**Complied.** Audit observed that based on the availability, NPCIL had issued Free Issue Material (FIM) to contractors for their use.
2.	The Company should lay down a specific time frame for completion of each stage in the tendering	The recommendations for time limits of different activities involved from receipt of indent to placement of purchase	**Partially complied.** NPCIL had constituted a committee (July 2014) to analyze the time required in processing of Indent to placement of purchase order and work break-down structure for different

[27] *Audit has selected the contract mostly having value above ₹ 30 crore. In these contracts, completion period is in the range of more than 36 months. Keeping view of the same, in respect of ongoing contracts, the cut of date for placement of P.O was taken as March 2019.*

	process after receipt of an indent	order have been submitted to Competent Authority and are under the process of approval.	activities pertaining to processing of Indent to placement of purchase order and to recommend the timeline for completion of each activity. Accordingly, Committee recommended timeline for purchase and works in October/November 2014 and the same was approved by CMD in July 2016. However, no timeline has been prescribed for processing of indents in respect of Single, Limited and Nomination basis tenders. Despite specifying timelines for various stages, audit observed that delay continued.
3.	The Company should ensure strict compliance to the terms and conditions of the contracts.	The concerned sections in NPCIL have been advised to take appropriate action in this matter in future.	**Partially complied.** It is mentioned that despite issue of such advisory, audit noticed instances of non-compliance to the terms & conditions of the contracts.

8.2.3 Audit findings

The audit findings have been classified under three major areas viz. pre-contract activities, post contract activities and inventory management. The same has been discussed in the ensuing paragraphs.

8.2.3.1 Pre-Contract activities

- **Delay in Processing of Indent as against the prescribed timeframe in public tender**

The maximum timeline for public tender for processing of 'Indent to placement of purchase order' in respect of Single Part Tender (SPT) is 145 calendar days and for Two Part Tender (TPT) is 300 calendar days.

Scrutiny of records/information of 657[28] purchase contracts revealed that C&MM, Mumbai issued public tender in 561 contracts *(85 percent)*. Out of this, in 333 contracts (59 *percent), C*&MM, Mumbai did not adhere to the prescribed timelines for processing of indent and the delays ranged from 2 to 2528 days in processing of indent.

Of these cases, 10[29] cases were selected for detailed examination to analyze the extent of delay in various stages of processing of purchase contracts wherein it was observed that delay in processing

[28] *657 Contracts = 474 Completed (2016-22) &183 Ongoing as on 31st March 2022*
[29] *PO Nos. (SPT) - 6477 & 14312 and PO Nos. (TPT)-17369, 6086, 6087, 6117, 6118, 6465, 6466 & 15995*

of indents ranged upto 316 days in case of Single Part Tender and upto 523 days in case of Two Part Tender (***Annexure-8.2***).

Thus, NPCIL did not adhere to the prescribed timeframe at each stage of processing of indent to the placement of purchase order, in violation of its own recommendations (November 2014).

DAE accepted (March 2023) the Audit observation and stated that in few cases requiring modifications in flow process from Indent to PO date, necessary action would be taken by 30th June 2023 to curtail the processing time.

However, the fact remains that NPCIL did not adhere to its own prescribed timeline in 333 contracts (59 *percent)* for processing of Indent to placement of purchase order.

- **Variation between estimated cost and contract value**

Clause A-5 (a) of Part-2 'Section-A' of HQI's (Preparation of Indent & its approval) states that 'while working out the estimated cost of an item all prevailing cost elements thereof as well as market conditions such as inflation, recession, competition etc. as on the date of indent should be taken into consideration so that the estimated cost so worked out is comparable with the market price, with the given specification/quality of product.'

Audit analysis of 657 purchase contracts revealed that there was considerable variation between estimated cost and purchase value in 458 contracts **(Annexure-8.3)**. In 59 cases (9 percent), the PO value exceeded the estimated cost by 11 to 172 percent and in 399 cases (61 percent), the estimated cost was higher than the PO value by 11 to 99 percent.

DAE accepted (March 2023) the audit observation and assured to constitute a committee by April 2023 to review and suggest recommendations after discussing and deliberating the matter with all the stake holders involved in the process.

8.2.3.2 Post contract activities

Efficient contract management includes safeguarding interest of the organization by ensuring timeliness in delivery as per terms and conditions of the contract and ensuring compliance with such contractual terms. Audit observed various weaknesses in contract management that are enumerated in the succeeding paras.

- **Inordinate delay in completion of contracts**

Scrutiny of 657 purchase contracts revealed that 639[30] contracts were to be completed on or before 31st March 2022. Hence, Audit scrutinized 639 purchase contracts and found that in 350 contracts (54.77 percent), there were huge delays in completion of contract as against the contractual date of delivery (CDD), ranging from 1 to 137 months. Further, out of these 350 contracts, in 266 contracts (76 percent), the time taken was more than double the period stipulated for completion (**Annexure 8.4**).

Non-compliance with contractual delivery schedule indicated unrealistic assessment of timelines and lacunae in contract management.

DAE accepted (March 2023) the need to expedite execution of contracts to avoid time and cost overrun and further stated that changes in designs based on the global events and in-house experience etc. delayed the project schedule.

Reply is not tenable as audit observed delay in majority of cases (54.77 percent). Further, timely completion of contracts is an important safeguard against additional financial implications to the department as discussed in succeeding paragraphs.

- **Absence of time frame for various activities**

  - **Mobilization advances**

  Central Vigilance Commission (CVC) had issued guidelines on 'Mobilization Advances' vide its OM dated 10 April 2007 wherein it stated that "Though the Commission does not encourage interest free mobilization advance, but, if the Management feels its necessity in specific cases, then it should be clearly stipulated in the tender document and its recovery should be time-based and not linked with progress of work".

  Out of 30 Erection and Commissioning contracts NPCIL paid mobilization advances worth ₹327.78 crore between 2011 and 2018 to the suppliers in order to initiate the work as per terms of the contract in eight contracts (27 percent).

  Audit observed that NPCIL did not prescribe any timeline for recovery of mobilization advance in line with the CVC guidelines. In all the eight cases, time-based recovery of mobilization advances was not done; instead, the same was linked with the progress of the work. As such, these

[30] *Total 657 purchase contracts minus 18 contracts having contractual delivery date after 31st March 2022 = 639 contracts*

advances worth ₹ 6.27 crore are outstanding for a long period ranging from 41 to 101 months. This, therefore, resulted in NPCIL extending benefits to the contractors by way of unadjusted advances valuing ₹ 6.27crore lying with them beyond Contractual delivery date as on 31 March 2022. This has resulted in violation of CVC guidelines as well as potential loss of interest to the tune of ₹ 3.22 crore for the period from CDD to March 2022.

DAE replied (March 2023) that now NPCIL has started paying advance with interest on unadjusted balance after CDD. DAE further stated that the scrutinized cases are old (indent processed/PO issued during the period from 2009 to 2018) where advances paid to contractor were further paid to sub-vendor by the contractor.

Reply is not tenable as NPCIL did not make provisions of time-based recovery of advances as per CVC guidelines (April 2007) in the contracts, while making mobilization advances to the contractor.

- **Delay Analysis Report (DAR)**

Delay Analysis Report in work contracts is a critical management tool which not only help in finding reasons for contractual delays but also indicates the responsible party for delay in terms of agreement. Clause AA-26 of Part-2 of HQI 2007 (R-3) states that where the purchase order value is more than five lakhs and the delay in supply of goods is attributable to Supplier, the Supplier/Contractor shall pay Liquidated Damages (LD) to NPCIL. The recovery rate of LD for the delay attributable to Supplier/Contractor shall be as per the condition of the contract for supply and will be recovered from the Supplier/Contractor for the period of delay beyond contractual delivery date (CDD).

Audit observed that C&MM, Mumbai had deducted Liquidated Damages (LDs) provisionally amounting to ₹ 47.32 crore subject to final settlement in respect of 65 contracts at the rate of five percent for the value of stores supplied by contractors/suppliers after CDD. Though, these LDs were provisionally deducted from the bills of the contractors/suppliers from the year 2013-14 to 2021-22, they had not been settled as of 31 March 2022 and were being depicted as liability in NPCIL's accounts. This was done since the final extensions were not issued in absence of Delay Analysis Report (DAR) despite receipt/acceptance of material years ago.

The fact remains that in absence of any specific timeframe, DARs had not been prepared despite provisional deduction of LDs for a period ranging from 1 to 9 years that may make it further difficult to hold the contractors responsible for delays on their part.

DAE replied (March 2023) that currently delay analysis is being carried out in line with the existing provisions of the GCC and applicable guidelines and it is planned to carry out the same on yearly basis. DAE further stated that instructions in this regard have been issued on 15 March 2023 to send statement on monthly basis for the review of the Management.

Reply of DAE may be viewed in the light of facts that due to non-preparation of DAR in a timely manner, NPCIL is yet to settle deducted LDs in these 65 cases.

➢ **Cost escalation due to delays**

HQI under Canons of financial propriety prescribed that “Every authority should exercise the same prudence in respect of expenditure incurred from public money as a person would exercise in respect of expenditure of his own money”. Contract management at NPCIL indicated deficiencies in execution, resulting in cost escalation of ₹ 348.55 crore, as discussed in succeeding paragraphs:

- **Cost escalation due to delay in execution**

Clause AA-21 of HQI 2007 (R-3) states that when purchase order is placed with certain pre-requisite conditions to be fulfilled by NPCIL, those need to be ensured to avoid risk of delays and consequential financial implications. Pre-requisites for a work contract need to be ensured along with intermediate milestones for physical progress so as to complete the work in stipulated CDD. Audit however observed that NPCIL did not ensure pre-requisites such as updated designs, regulatory approvals and readiness of sites in a timely manner which resulted in delayed execution of projects beyond CDD. This resulted in cost escalation of ₹ 341.50 crore as illustrated below:

Sl. No.	Audit Observation	Detailed Description
1.	Cost escalation towards Price adjustment charges- ₹216.77 crore.	Due to NPCIL's delays in the release of work fronts, drawings, and other necessary inputs, 13 contracts were not completed within the original CDD. Based on DAR, NPCIL approved revision in 13 contracts for permitting cost change, which resulted in additional financial burden of ₹ 216.77 crore as detailed in **Annexure 8.5**.
2.	Cost escalation of ₹70.32 crore towards extension charges for insurance policies after expiry of CDD	NPCIL placed combined contracts from March 2011 to August 2012 on a consortium of two vendors for KAPP-3&4 and RAPP-7&8 sites. The Marine-cum-Erection (MCE) policies were awarded to other two vendors for KAPP 3&4 (MEQ-1024) and RAPP 7&8 (MEQ-1062) respectively to cover a period upto 13 months and 7 months from the date. Since the projects were not completed in original CDD, NPCIL had to extend the validity of Insurance policies by incurring additional expenditure of ₹ 70.32 crore (**Annexure 8.6**).
3.	Additional financial burden of ₹ 54.41 crore towards retention/ idling of manpower and additional storage facility for DG sets	Audit observed that in three contracts, items/equipment received could not be installed by contractor within the CDD and NPCIL had to bear additional financial burden of ₹ 54.41crore towards retention, idling of manpower and additional storage facility for DG sets.

DAE replied (March 2023) that since the delay is attributed to NPCIL so it had to bear additional financial burden of ₹ 341.50 crore.

- **Non-installation & commissioning of DG sets resulted in avoidable payment of ₹ 6.43 crore towards extension of warranty period.**

Clause 6.1.1 of PO states that defect liability period shall be 18 months from the date of operational acceptance of facilities (commissioning), whichever occurs first, for each reactor unit. NPCIL placed a contract for supply & erection of eight Diesel Generator sets each for KAPP 3&4 and RAPP 7&8.

Audit observed that all DG sets for KAPP 3&4 and RAPP 7&8 were received in July 2014 and January 2015 respectively; however, the same were kept un-installed for reasons attributable to NPCIL, which mainly included delay in release of work front and other requisite inputs etc. The DG sets procured for KAPP 3&4 (₹ 201.15 crore) and RAPP 7&8 (₹ 195.17 crore) had been lying idle for approximately seven years and DG sets for RAPP 7 & 8 were likely to be commissioned in 2023 only.

Since NPCIL was responsible for non-installation, NPCIL paid an amount of ₹3.44 crore towards extension of warranty/defect liability period for the received DG sets for KAPP-3&4 and claim for warranty extension of ₹ 2.99 crore for RAPP 7&8 is under process.

DAE replied (March 2023) stated that efforts will be made to complete the contracts in time to avoid such incidental expenditure in future.

- **Improper assessment of requirement resulted in unwarranted inventory creation and blockage of funds to the tune of ₹ 0.62 crore.**

RAPS-2 site of NPCIL raised requirement of 80 Nos of Hairpin type Heat Exchangers in October 2014 at an estimated cost of ₹ 95 crore with scheduled delivery by July 2016. After due tendering process, NPCIL placed purchase order for Manufacturing, fabrication, testing, inspection and supply of Hairpin Type Heat Exchanger.

Audit observed that in May 2018, after lapse of almost 10 months from placement of PO and more than three years from raising the indent, NPCIL requested suppliers to delete "**Blow-off header assembly (Preheat leg)"** valuing ₹ 31.07 lakh as requirement of the said item no longer existed. However, both the suppliers refused (June 2018) to delete Blow-off header assembly (Preheat leg) from scope of purchase order as they had already started procurement process for raw material required for the same.

Thus, improper assessment of requirement and delayed communication regarding non-existence of requirements resulted in unwarranted inventory creation and blockage of funds to the tune ₹0.62 crore.

DAE accepted (March 2023) the audit observation and assured to take adequate precaution to avoid similar situations.

- **Non- implementation of Integrated ERP solution for over six years**

Ministry of Finance, Department of Expenditure conveyed (March 2012) to all Ministries/ Departments of the Central Government, their attached and subordinate offices, Central Public Sector Enterprises, and autonomous bodies that there was a need to commence e-procurement in respect of all procurements in a phased manner. Further, Apex Committee on National e-Governance Plan (NeGP) had emphasized (November 2013) the need to adopt end to end e-procurement in all Ministries/Departments.

In 2001, NPCIL developed 'Integrated Business Application' (IBA) at a cost of ₹2.5 crore, for HR functions and finance functions to some extent.

Audit noticed that e-tendering module for floating online tender enquiries; receipt of offers, online opening of bids and Inventory module (sub module of IBA) were operational during the year 2012. However, the other purchase processes like requisition/indent, purchase recommendations, post contractual activities etc., were being done manually. Further, consolidation of financial information/data at corporate level on real time basis were not supported by IBA.

Audit further noticed that due to absence of integrated ERP system, C&MM-NPCIL was unable to generate integrated MIS reports and track the status of documents at any point of time. Thus, NPCIL was unable to generate important information required for making an efficient and effective decision by the Management, leaving open the possibility of unwarranted procurement and stockpiling of items. Further, NPCIL was deprived of numerous significant advantages of ERP like automation, integration and standardization of business processes, real time data processing abilities, ability to manage core and support processes, etc.

DAE replied (March 2023) that the separate cell has been created under direct supervision of functional Director. DAE also added that a contract for consultancy for implementation of ERP has already been awarded to vendor and the implementation work will be completed by 31 March 2026.

Reply of DAE may be viewed in the light of fact that NPCIL was yet to implement the end-to-end e-procurement solution despite lapse of considerable period of time.

8.2.3.3 Stores and Inventory Management

Out of nine stores[31], Tarapur (TAPS), Trombay Village (TVS) and Kakrapar (KAPP) were selected for detailed scrutiny and observations in this regard are as follows:

- **Non disposal of obsolete/scrap materials - ₹ 2.82 crore**

Clause 8.2.3 of the Manual for Material Management 2006 states that surplus/scrap lists should be promptly put up to the competent Authority for approval for declaration as surplus/scrap and subsequent disposal.

Scrutiny of Stores records revealed (December 2022) that 165 items amounting to ₹ 2.82 crore were identified as scrap/obsolete in August 2019/February 2020 and are lying in the stores of TAPS, KAPP and TVS for disposal as of 31st March 2022 **(Annexure 8.7)**.

DAE replied (March 2023) that necessary action for disposal and e-auction in this regard is being taken.

- **Improper preservation of store items resulted in avoidable expenditure of ₹ 19.44 crore towards replacement cost of Free Issue Materials (FIM)**

During physical verification at TVS, it was seen that huge stocks of different kinds of materials were lying in an open area for more than 15-20 years, without proper preservation, in a dilapidated condition. Such improper preservation led to deterioration of many items, as pointed out below.

NPCIL placed (March 2009) purchase orders on L&T and BHEL for design, procurement of balance material (other than FIM), fabrication, inspection, examination, testing, preservation and delivery of 700 MWe Steam Generator (SG) and Mandatory spares along with support structure for transportation/handling/erection for KAPP-3&4 at cost of ₹ 345 crore each, totaling ₹ 690 crore. The stipulated date of delivery for both POs was September 2013.

Scrutiny of records revealed (November 2021) that eight numbers of semi-finished shell forgings (cost of one shell being ₹ 2.43 crore), included in the list of FIM under both POs, were lying in the possession of NPCIL at TVS for more than twenty years.

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[31] *Stores at Tarapur (Maharashtra), Rawatbhata (Rajasthan), Kalpakkam (Tamilnadu), Narora (UttarPradesh), Kakrapar (Gujrat), Kaiga (Karnataka), Kudankulam (Tamilnadu), Trombay Village (Maharashtra) and Gorakhpur Haryana Anu Vidyut Pariyojana (Haryana)*

Semi-finished shell forgings lying in open area in stores

Audit further observed that due to absence of original test certificates (TC) for issued shells, the utilization of the same had to be ensured by actual testing, and in preliminary investigation (in-situ metallography), these shells were found in quenched and tempered condition.

NPCIL was liable to issue these semi-finished forgings of shell to both suppliers with stipulation that if it does not meet required specification during testing, then contractor shall arrange to procure the extension shell forging in fully machined condition for use in manufacturing of SG. Accordingly, a component for testing of FIM was included in the scope of both purchase orders. For testing, NPCIL had incurred expenditure of ₹ 1.37 crore & ₹ 1.38 crore in two purchase orders towards mechanical testing, machining & NDE of issued "semi-finished forgings". After some rounds of testing, for affirming the quality, all issued shells were declared as rejected. As a result, NPCIL had to procure new shell forging at cost of ₹ 9.72 crore in the two purchase orders.

Thus, due to improper preservation of the aforesaid materials lying at NPCIL stores for long period, NPCIL had to bear avoidable additional expenditure of ₹ 19.44 crore towards replacement of rejected FIM.

DAE replied (March 2023) that the expenditure is not on account of improper preservation of shells but due to inherent deficiencies in supply that could be detected only at the time of fabrication. The expenditure of ₹ 19.44 crore was made for procurement of new forgings in replacement of these rejected semi-finished forgings.

Reply is not tenable as it indicates inadequate testing for ruling out Inherent deficiencies at the time of acceptance of material. Further, DAE did not provide documents to substantiate its claim of deficiencies not being attributable to improper preservation of these shells.

8.2.3.4 Conclusion

NPCIL-CMM could not implement an integrated ERP Solution (including MIS) for all functional areas. Improper preservation of store items resulted in avoidable expenditure of ₹ 19.44 crore towards replacement cost of Free Issue Materials.

Recommendations of Audit and response of the Department

In view of the aforesaid audit findings, the recommendations made by Audit and the response received from the DAE are as follows:

Sr.No.	Recommendations	Response
1.	NPCIL should prescribe timeline for recovery of mobilization advances to rule out possibility of misuse by the supplier. (Para no. 8.2.3.2*)*	The department stated that the Now NPCIL has started paying advance with interest on unadjusted balance after CDD and in latest EPC requirements, only interest-bearing advance are proposed to be paid to the contractors in line with latest procurement manual for Goods issued by DOE of GoI, subsuming all CVC guidelines.
2.	NPCIL should prescribe a specific timeframe for preparation of Delay Analysis Report (DAR) to facilitate timely closure of Purchase Orders. (Para no. 8.2.3.2)	The department stated that the detailed analysis about the various aspects involved is undertaken and suitable guidelines for preparing delay analysis report in a time bound manner has been issued.
3.	NPCIL should implement an integrated ERP solution (including MIS) within the organization to aid the Management in taking informed decisions (Para no. 8.2.3.2)	The department stated that a contract for consultancy for implementation of ERP has already been awarded and implementation work will be completed by 31 March 2026.
4.	NPCIL should ensure proper preservation of Free Issue Materials (FIM) lying in stores for long period to avoid losses associated with their rejection (Para no. 8.2.3.3)	The department stated that the work instructions for Storage, preservation and material handling of various items at Sites have been issued in January 2022.

8.3 Blockage of funds to the tune of ₹ 7.86 crore

Indigenous High Dose Rate Brachytherapy (IHDR), Treatment Planning Software (TPS) and Applicator with Coupling procured at a cost of ₹ 7.86 crore is yet to be transferred to desired hospitals even after nearly seven years since these were supplied.

Board of Radiation & Isotope Technology (BRIT) submitted (August 2007) a project proposal to Department of Atomic Energy (DAE) titled 'Indigenous High Dose Rate Brachytherapy (IHDR)'equipment at an estimated cost of ₹ 8.00 crore. The objective of the project was to develop 12 sets of inexpensive indigenous version of HDR brachytherapy equipment including Treatment Planning Software (TPS) and development of technology for the production of high specific activity Iridium source suitable for the equipment. The equipment were to be developed, tested and supplied to desired hospitals in India for end use benefit of poor cancer patients by bringing down cost of the treatment. DAE sanctioned (December 2007) ₹8.00 crore for this project with scheduled date of completion as February 2012.

Directorate of Purchase & Stores (DPS) of DAE placed (August 2008) a purchase order with vendor for 'Design, Development, Fabrication, and Supply of 12 no. of IHDR equipment capable of communicating with all common Treatment Planning Software' to be supplied by July 2012.

Audit observed that the TPS, though envisaged in the project proposal of 2007, was not included with the IHDR equipment while placing the PO in August 2008, on the presumption that existing IHDR design already had provision for manual treatment planning. The first prototype of the equipment was supplied in March 2011. In April 2011, BRIT made a supplementary proposal to DAE for procurement of needle-type applicator on account of surge in number of breast cancer patients in India. It was also proposed to include TPS in the IHDR equipment as it was necessary for effectiveness of treatment and utility of equipment. This not only entailed revision of the cost of the project from ₹ 8.00 crore to ₹ 9.60 crore to include supply of twelve numbers of TPS (₹ 1.44 crore) and Needle type applicator (₹ 0.16 crore) but scheduled date of completion was also revised. DAE issued (July 2011) revised sanction of ₹ 9.60 crore with scheduled date of completion as January 2013.

Audit further observed that the Supplier developed and delivered all 12 IHDR equipment by February 2016 after delay of 42 months from scheduled date of completion. DPS on its part released full payment of ₹ 6.19 crore in December 2016.

As regards TPS, it was observed that despite receiving sanction of DAE in 2011, the purchase order was placed in January 2015 for supply of 12 TPS at the cost of ₹ 2.89 crore[32]. The scheduled date of completion was 12 months from the date of opening of Letter of Credit i.e. 07 September 2015. However, the supplier supplied two prototypes belatedly, one in March 2017 and another in 2018 and balance 10 numbers of TPS, were yet to be supplied. Both prototype of TPS have been under evaluation at Radiological Physics & Advisory Division (RPAD), Bhabha Atomic Research Centre, Mumbai & TMH, Mumbai since then. DPS released ₹ 1.62 crore to supplier by November 2018. Further, applicator with coupling was also procured in January 2017 at a cost of ₹ 0.04 crore that were received and regularized in Vashi Zonal Stores.

One unit each of the IHDR equipment was supplied to Tata Memorial Hospital (TMH) and Advanced Centre for Treatment, Research & Education in Cancer (ACTREC), Navi Mumbai in January 2014 and February 2014 respectively for cold trials. These cold trials were completed and these lHDRs equipment brought back to BRIT from TMH & ACTREC in 2018 & 2022 respectively. However, balance 10 units of IHDR equipment are still lying unutilized with BRIT for almost seven years (January 2023).

Thus, due to poor planning by BRIT at conception stage and weakness in project management has resulted in all 12 IHDR equipment along with TPS costing ₹ 7.86 crore lying idle. It is pertinent to mention that this equipment has a life cycle of 15 years and almost seven years have already passed without any utilization.

DAE replied (December 2022) that order has been placed for the first five sets of TPS by DPS. The technology for IHDR has been transferred (July 2022). Besides, commercial scale production and supply of IHDR would now be under the scope of vendor after the required regulatory approval. Further, it was also stated that commercial deployment is expected before the end of 2023.

Reply is not tenable, as Commercial deployment of IHDR, on a large scale is possible only after successful receipt and acceptance of TPS. Besides, the order for next five sets of commercial TPS would be placed only after the first five set of TPS are tested and accepted. After acceptance of commercial version of TPS, clinical studies would be initiated in collaboration with hospitals by vendor. Regulatory approval from Atomic Energy Regulatory Board (AERB) is still pending. Hence, the claim of commercial deployment of IHDR by end of 2023 is unrealistic. As such, the 12 lHDRs have already outlived more than half of their shelf life.

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[32] ***US$ 386100 * ₹ 75= ₹ 2.89 crore (1 US$ = ₹ 75)***

Thus, ad-hoc approach of BRIT in not factoring in of necessary components constituting the project has resulted in idling of equipment for almost seven years in terms of reduced cost of treatment despite incurring expenditure of ₹7.86[33] crore.

8.4 Absence of due process in engagement of legal counsel

Bhabha Atomic Research Centre (BARC) engaged legal Counsels in contravention of orders issued by Department of Legal Affairs, Ministry of Law & Justice.

The Government of India (Allocation of Business) Rules, 1961 (ABR) and the Governmentof India (Transaction of Business) Rules, 1961 (TBR) stipulate that advice on legal matters including interpretation of the constitution and the laws and conveyancing etc. have been allocated to the Department of Legal Affairs (Ministry of Law & Justice) and the TBR's mandates consultation with Ministry of Law in this regard. Again, Department of Legal Affairs, Govt. of India vide O.M. dated 06.10.2017 stated that the function of tendering legal advice may not be conferred upon a contractual employee and emphasized that Ministries/Departments may not resort to such contractual appointment as this practice encroaches upon the functions assigned to Department of Legal Affairs. Further, as per Annex to Schedule I of Exercise of Financial Powers Rules 1978 of Department of Atomic Energy (DAE), legal charges should ordinarily be incurred only with the previous consent of the Ministry of Law & Justice.

Bhabha Atomic Research Centre (BARC), a constituent unit of DAE awarded a work contract to vendor in May 2012. Delays in completion of this work resulted in a commercial arbitration between BARC and vendor for ₹ 470 crore. BARC approached (July 2018) Ministry of Law and Justice for nomination of Sr. Panel Counsel to defend this case and the same was received in September 2018. While preparing the counter claim before the sole arbitrator, the Sr. Panel Counsel requested to get more Counsel nominated to defend the case before the arbitrator for which approval of Ministry of Law and Justice was received in November 2018. Keeping in view the voluminous work and high stakes involved in the matter, these Counsels demanded higher fees to represent BARC. The issue of higher fees was taken up (January 2019) with Ministry of Law and Justice, Mumbai and they advised (January 2019) BARC to approach Ministry of Law and Justice, Department of Legal Affairs, New Delhi through proper channel for obtaining sanction of the Hon'ble Minister of Law and Justice for payment of

[33] *₹6.20 crore (Cost of IHDR) + ₹1.62 crore (Cost of TPS)+ ₹0.04 crore (Cost of Applicator with coupling)= ₹7.86 crore*

higher fees. Accordingly, BARC sent (February 2019) a proposal to DAE for taking up the issue with Department of Legal Affairs, New Delhi for payment of special fees to these Counsels.

Audit, however observed that without obtaining consent of the Department of Legal affairs, BARC got the approval of DAE (June 2019) for engagement of a Law firm to represent BARC in the matter in contravention of the Rules. Subsequently, BARC appointed (July 2019) a Law Firm for arbitration matter between vendor and BARC.

Audit also observed that DAE in supersession of its earlier approval of June 2019, directed (September 2019) BARC to engage law firm only on provisional basis, till the approval from Ministry of Law and Justice and the same was received in November 2019. However, despite approval of Ministry of Law and Justice for payment of special fees to these counsels, BARC continued to engage services of a Law Firm and incurred an expenditure of ₹1.12[34] crore towards their services till March 2022. The case was referred to the Dispute settlement committee which finally settled the issuein March 2022 at the payment ₹ 25 crore in settlement to vendor by BARC.

BARC stated (May 2022/July 2022) that Government Counsels had been of little help and did not extend any support in the Arbitration matter. Thus, in order to protect the public interest and circumstances beyond their control, engagement of Counsels had been resorted to.

Department in its reply (March 2023) stated that hearings were almost completed before the approval of Ministry of Law & Justice was received, so at that time if the services of Law firm were discontinued, there would not be continuity in the arguments and it would have ended up in unavoidable loss to the Government.

Reply is not tenable in view of the fact that even after obtaining approval of Ministry of Law and Justice for appointment of Special Counsel on payment of special fees and specific instructions (September 2019) of DAE, BARC continued to engage services of Law Firm till March 2022. Further, nothing on record indicated that the appointed counsels did not cooperate with BARC nor BARC had made any efforts to engage the approved counsels w.e.f November 2019 i.e. 4 months after engaging the Law Firm especially when the entire exercise would have taken longer period (i.e. till March 2022 in this case). This assertion of BARC that engagement of counsels helped in protecting public interest is need to be viewed in light of the fact that BARC had to pay ₹25 crore in settlement to vendor.

[34] ***₹22.09 lakh to Law Firm and ₹90.00 lakh to a Counsel of the law firm.***

8.5 Loss of dues to the tune of ₹ 77.76 lakh

Shortcoming in selection of suitable candidates and monitoring the performance of Master Business Associate by Electronics Corporation of India Limited resulted in loss of dues to an extent of ₹ 77.76 lakh.

The Computer Education Division (CED) of Electronics Corporation of India Limited (ECIL), Hyderabad is engaged in imparting professional Information Technology training under the brand name of 'ECIT'[35]. As a part of this activity, it also undertakes Skill Development Training Programmes (SDTP) for various Government Departments for training the unemployed youth belonging to weaker sections of the Society. ECIL imparts such trainings through Master Business Associates (MBA), engaged through an agreement with specified terms for monitoring and recoveries for non-performance.

Tamil Nadu Adidravidar Housing and Development Corporation (TAHDCO) decided to organise one such SDTP, to impart training to 1000 candidates[36], from various districts of Tamil Nadu, at a financial commitment of ₹ 275.96 lakh during the year 2014-15. TAHDCO awarded the work to ECIL and signed an agreement with ECIL in November 2014. ECIL was to receive ₹ 259.20 lakh as institutional share in three instalments[37] and remaining ₹ 16.76 lakh as stipend was to be disbursed directly to the candidates.

ECIL, Chennai entrusted the work to its MBA in December 2014 to conduct the trainings on its behalf. The revenue from TAHDCO was to be shared in the ratio of 20:80 (ECIL: MBA).

Audit observed that ECIL raised an invoice for ₹ 114.16 lakh (Ist instalment) in November 2015. TAHDCO released ₹ 90.76 lakh between September 2016 to August 2017 and ECIL in turn released share of ₹ 56.83 lakh to MBA, between November 2016 to October 2017. However, when ECIL raised the invoice for ₹ 154.44 lakh (2nd and 3rd instalment) in June 2017, TAHDCO did not release the amount and instead issued Notice of Termination of Agreement (January 2019) citing production of fabricated records to support the claim and insisted on refund of the amount already released.

Audit further noticed that even though ECIL in its justification (March 2019) to TAHDCO stated that it had successfully completed the trainings in co-ordination with the District Managers[38] (DMs) and

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[35] *Electronic Corporation of India Limited Information Technology Division*

[36] *Belonging to Scheduled Caste/Scheduled Tribes/ Scheduled Caste converted to Christianity*

[37] *40% on commencement of the training and after furnishing the list of selected candidates [duly countersigned by the District Managers (DMs)]; 40% on successful completion of the training and on proof of placement of minimum 75% of candidates trained; and balance 20% after three months from the date of placement and verification of continuation in employment based on submission of salary slip.*

[38] *District officials of TAHDCO*

submitted all relevant records to the DMs. TAHDCO, however, reiterated and maintained the notice (June 2019), stating that the records could not substantiate the claim. Further, TAHDCO pointed out that the trainings were imparted to regular students of colleges instead of unemployed youth as per the agreement and the claims of placement were devoid of genuineness. TAHDCO also stated that it corroborated the facts through field verification and feedback.

Audit also observed that as per the agreement between ECIL and its MBA, ECIL was to ensure the timely receipt of documentation from MBA regarding the completed course, attendance reports, placement details of the candidates etc. Examination of records with ECIL related to these candidates revealed that ECIL did not have the requisite records to substantiate its claim. The following table indicates the status of availability of relevant records with ECIL.

Total No. Of Candidates	No. Of candidates in respect of whom ECIL possessed selection list duly countersigned by DMs	No. Of candidates in respect of whom ECIL possessed Training Completion Certificate duly countersigned by DMs	No. of Candidates in respect of whom offer letters were available with ECIL	No. Of candidates in respect of whom certificate regarding continuation in employment based on submission of salary slip/ passbook available with ECIL
1000	**615 (61.5%)**	**Nil (0%)**	**329 (32.9%)**	**Nil (0%)**

The above data indicates that ECIL did not obtain the necessary records from MBA to verify successful completion of the training program. Further, out of the above 329 offer letters, 321 candidates were offered placement in Arwin Varsity, Tek Shop and Tek Wizard which were all sharing the same address as the MBA. Further, documents to show the acceptance of the offer by the candidates did not have details of the position offered and the salary payable to them.

Audit further observed that ECIL did not inspect the training centres adequately and did not keep a record of the documents countersigned by DMs, though various clauses relating to the performance and monitoring to this effect were incorporated in the Agreement. Out of the 11 Districts where the courses were conducted, ECIL inspected only two Centre and even for this, Inspection Report was not available.

Audit also observed that even though the clause for non-performance in the agreement between ECIL and MBA provided for recovery of charges paid to MBA in case adverse reports are received, ECIL did not initiate (March 2023) any action against MBA in spite of the termination notice and demand for refund by TAHDCO.

Moreover, Audit scrutiny also revealed that candidates pursuing their Diploma/Graduation courses were enrolled for the courses in violation of guidelines issued by TAHDCO. Even more, the Advertisement issued by ECIL in December 2014 also indicated that the candidates possessing Post Graduation/ Graduation/ Diploma[39] were only eligible for selection. Thus, enrollment of candidates who were still pursuing their Diploma/ Graduation courses itself was not in order, since such students could not be attributed as unemployed youth, as objected by TAHDCO. Evidently, the system of selection of candidates by MBA and ECIL staff in association with the District Managers lacked transparency and is compounded by the fact that ECIL did not maintain relevant records.

ECIL stated (October 2021) that its role was limited to co-ordination and the job was entrusted to MBA. It further stated that complete data was verified and submitted toTAHDCO with the approval of DMs. DAE stated (December 2022) that it issued an advertisement inviting candidates for admission duly approved by TAHDCO and that the company selected the candidates in consultation with the District Managers based on the eligibility norms and added that action of TAHDCO in terminating the agreement was unilateral, baseless and devoid of merits.

In its recent response (Oct 2023), ECIL stated that it persuaded TAHDCO for settlement of case (March 2023) and TAHDCO agreed by releasing only 70% of the order value i.e. ₹ 181.44 lakh and forfeited remaining 30% (₹ 77.76 lakh) for violations. ECIL accepted the offer of settlement and TAHDCO released ₹ 90.68 lakh as final settlement. Thus, absence of monitoring of the work done by the MBA resulted in a situation wherein not only ECIL had to pursue for settlement of case but also had to let TAHDCO forfeit 30 per cent (₹ 77.76 lakh) of the order value.

The reply is not acceptable, since ECIL cannot position itself as a coordinator only. It had the responsibility to monitor the work of MBA to whom it entrusted the work. It was also ECIL's responsibility to ensure that the MBA performed the tasks diligently; obtain all the records[40]; verify and document them. ECIL, however, could not maintain and produce complete records to justify its claims. Further, ECIL/ DAE did not initiate any action either on MBA or on staff of Chennai Regional office for

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[39] *Msc., Bed/BSc. Bed/Bsc/Diploma & BE (ECE, EEE and Mech.) candidates*

[40] *List of selected candidates, training completion certificate, proof of placement and verification of continuation in employment based on submission of salary slip/ passbook – all duly countersigned by District Managers*

non-maintenance of the records and substantiating its claim to TAHDCO. ECIL took a decision to close the Skill Development Trainings of CED from April 2021 citing reputation of ECIL brand, which further substantiate the fact that ECIL itself was apprehensive of functioning of MBA.

Hence, violation of conditions of the contract, poor monitoring of work carried out by MBA, non-maintenance of the records to substantiate the claim resulted in loss of dues to the extent of ₹ 77.76 lakh.

New Delhi
Dated: 12 Dec 2023

(GURVEEN SIDHU)
Director General of Audit
Environment and Scientific Departments

Countersigned

New Delhi
Dated: 18 Dec 2023

(GIRISH CHANDRA MURMU)
Comptroller and Auditor General of India

ANNEXES

Annexure-2.1
[Referred to in paragraph no.2.1]
Electricity payment details: LPSC Bangalore, ISRO Devarayana Patna Tumkur-572104 / Account ID: 0634756031--TUMKUR ISRO CAMPUS

Month	Contract Demand (CD) in kVA	Billing Demand in kVA (85 Per cent of Contract Demand)	Recorded Demand in kVA	Benchmark Value (based on the peak consumption in August 2020)	Rate per kVA paid in ₹.	Excess kVA	Excess expenditure in ₹.
1	2	3	4	5	6	7=(3)-(5)	8=(6)x(7)
Feb-20	5000	4250	250	2375	220	1875	412500
Mar-20	5000	4250	530	2375	220	1875	412500
Apr-20	5000	4250	20	2375	220	1875	412500
May-20	5000	4250	573	2375	220	1875	412500
Jun-20	5000	4250	215	2375	220	1875	412500
Jul-20	5000	4250	215	2375	220	1875	412500
Aug-20	5000	4250	2375	2375	220	1875	412500
Sep-20	5000	4250	468	2375	220	1875	412500
Oct-20	5000	4250	285	2375	220	1875	412500
Nov-20	5000	4250	173	2375	230	1875	431250
Dec-20	5000	4250	138	2375	230	1875	431250
Jan-21	5000	4250	45	2375	230	1875	431250
Feb-21	5000	4250	30	2375	230	1875	431250
Mar-21	5000	4250	78	2375	230	1875	431250
Apr-21	5000	4250	25	2375	230	1875	431250
May-21	5000	4250	25	2375	230	1875	431250
Jun-21	5000	4250	123	2375	250	1875	468750
Jul-21	5000	4250	450	2375	250	1875	468750
Aug-21	5000	4250	178	2375	250	1875	468750
Sep-21	5000	4250	80	2375	250	1875	468750
Oct-21	5000	4250	175	2375	250	1875	468750
Nov-21	5000	4250	28	2375	250	1875	468750
Dec-21	5000	4250	25	2375	250	1875	468750
Jan-22	5000	4250	30	2375	250	1875	468750
Feb-22	5000	4250	40	2375	250	1875	468750
Mar-22	5000	4250	45	2375	250	1875	468750
Total							**11418750**

Annexure-3.1
[Refer to paragraph no.3.1]
Reimbursement of actual expenditure on conveyance and transportation of personal effects to the Scientists on first appointment by the Central Autonomous Bodies

Sl. No.	Name of the Institute	Total Amount reimbursed In Financial Year (from 1998 to 2022) ((₹ in lakh)
1	National Institute of Immunology (NII), New Delhi	2.62
2	National Centre for Cell Science, Pune	30.58
3	Center for DNA Finger Printing and Diagnostics (CDFD)	1.51
4	National Institute of Plant Genome Research (NIPGR), New Delhi	0.34
5	National Brain Research Centre, Manesar	12.50
6	Institute of Life Sciences (ILS) Bhuvneshwar	5.21
7	National Institute of Biomedical Genomics (NIBMG), Kalyani	5.19
8	National Institute for Animal Biotechnology (NIAB) Hyderabad	1.79
9	Regional Centre for Biotechnology, Faridabad	2.35
10	Institute of Stem Cell Science & Regenerative Medicine (InSTEM), Bengaluru	5.39
	Total amount reimbursed	**67.48**

Annexure 8.1
[Refer to paragraph no.8.2.1.2]
Total and selected contracts (Completed & Ongoing)

(₹ in crore)

Particulars	Range of value of contracts	Total Contracts		Selected Contracts		Percentage of Selection in terms of	
		Nos.	Value	Nos.	Value	Nos.	Value
Contracts completed during 2016-17 to 2021-22	₹30 crore and above	7	390.58	7	390.58	100	100
	below ₹30 crore	467	750.28	22	345.64	5	48.13
Ongoing contracts including contracts entered prior to April 2019 which are ongoing as on 31.03.2022	₹30 crore and above	77	14680.99	58	9224.44	75	63
	below ₹30 crore	106	593.38	7	130.17	7	22
Grand Total		**657**	**16415.23**	**94**	**10090.83**	**14**	**61**

Annexure 8.2
[Refer to paragraph no.8.2.3.1]
Stage-wise delay in processing of indent

Single Part Tender				Two Part Tender			
Description of stage wise activity	**Prescribed time (days)**	**Days taken in finalization**	**Delay in days**	**Description of stage wise activity**	**Prescribed time (days)**	**Days taken in finalization**	**Delay in days**
Indent registration and opening of File in C&MM	5	22-55	17-50	Indent registration and opening of File in C&MM	5	6-61	1-56
Scrutiny of Indent and issue of Tender	25	66-341	41-316	Scrutiny of Indent and issue of Tender	25	24-548	0-523
Date of issue of tender/NIT to date of opening of tender	30	10-154	0-124	Date of issue of tender/NIT to date of opening of tender (part I) including extension of time in opening of tender	90	42-164	0-74
Techno Commercial evaluation and receipt of clear Purchase Recommendation (PR)	60	119-247	59-187	Techno Commercial evaluation part-I including approval from Competent Authority for part-II opening)	80	95-416	15-336
Timeline for release of Purchase order	25	1-58	0-33	Opening of part-II and receipt of clear Purchase Recommendation (PR)	70	13-287	0-217
				Timeline for release of Purchase order	30	17-494	0-464
Total	**145**	**1-341**	**0-316**	**Total**	**300**	**0-548**	**0-523**

Annexure-8.3
[Refer to paragraph no.8.2.3.1]
Variation in estimated cost

Nature of Contracts	Cases reviewed		Underestimation of Cost			Overestimation of Cost		
	No. of PO	Value of POs (₹ In crore)	No. of cases	Value (₹ In crore)	Variation (%)	No. of cases	Value (₹ In crore)	Variation (%)
Completed	474	1140.86	39	264.33	11 to 156	270	525.10	11 to 99
Ongoing	183	15274.37	20	1661.46	12 to172	129	11419.42	11 to 97
TOTAL	**657**	**16415.23**	**59**	**1925.79**	**11 to 172**	**399**	**11944.52**	11 to 99

Annexure – 8.4
[Refer to paragraph no.8.2.3.2]
Delay in completion of contract

Type of Contracts	No. of Cases	Value (₹ In crore)	Range of delay beyond CDD (in Months)	Range of delay (in Percentage)	No. of contracts where time taken was more than double the period stipulated for completion
Completed	195	704.01	1 to 137	5 to 4888	122
Ongoing	155	9169.99	20to 131	72 to 6336	144
Total	**350**	**9874**	**1 to 137**	**5 to 6336**	**266**

Annexure-8.5

[Refer to paragraph no.8.2.3.2]

Table -1 : Price adjustment beyond original CDD

Sr No	P.O NO, Date and Amount	Supplier Name	Item details	CDD (Extended CDD)	Period up to which delay analysis done	Period of delay attributable to NPCIL	Date up to which price adjustment(PA) allowed beyond CDD date	Reason for delay in completion of PO	Additional financial implication		
									Description	**Amount (₹ in cr)**	**Remark**
1.	E&C PO No. 6081 Date 19.08.2011, ₹6.60 crore (Supply PO No. 6080 Date 19.08.2011, ₹194.55 crore)	M/s Kirloskar Oil Engines Limited (KOEL), Nashik	Supply cum Erection package for Diesel Generator Sets (8 Nos.) for KAPP- 3&4	KAPP-3 30.04.2014KAPP-4 31.10.2014 KAPP-3 31.03.2020 KAPP-4 31.12.2022	31.05.2018	1400 days	KAPP-3 28.02.2018 KAPP-4 31.08.2018	Delay in release of work front	Financial implication towards PVC as per DAR	2.24	Amendment-VII was issued on 12.03.2019, for allowing price adjustment with prevailing indices up to 28.02.2018 & 31.08.2018 for KAPP 3 & KAPP 4 respectively.
									Financial charges	0.95	As per Amendment no. VI dated 12.10.2018; reimbursement of statutory levies and charges such as insurance charges, bank guarantee charges etc. incurred beyond original CDD was to be paid by NPCIL at actual.
									Total	**3.19**	
2.	E&C PO No. 6425 dated 19.08.2011, ₹7.00 crore (Supply PO No. 6424 dated 19.08.20	M/s Kirloskar Oil Engines Limited (KOEL), Nashik	Supply cum Erection package for Diesel Generator sets of RAPP 7&8	RAPP-7 31.10.2014RAPP-8 30.04.2015 RAPP-7 31.12.2022RAPP-8	31.01.2019	61 months	**31.01.2019**	Delay in release of work front	Payment of price adjustment for works executed up to Jan. 2019	0.07537	In view of delay analysis done upto 31.01.2019, Amendment-X was issued in E&C PO on 26.03.2021, for allowing price adjustment with prevailing indices up to 31.01.2019
									Payment of price adjustment towards expected value of	4.00907	

Sr No	P.O NO, Date and Amount	Supplier Name	Item details	CDD (Extended CDD)	Period up to which delay analysis done	Period of delay attributable to NPCIL	Date up to which price adjustment(PA) allowed beyond CDD date	Reason for delay in completion of PO	Additional financial implication		
									Description	Amount (₹ in cr)	Remark
	11, ₹188.17 crore)			31.01.2023					escalation for left out work		
									Extension of PBG & ABG	0.23224	Reimbursement of financial charges for extension of Bank guarantee for PBG& ABG, Insurance policies, workmen compensation policy during currency of existing BGs/Policies for the period beyond CDD.
									Extension of insurance policies	1.12792	
									Extension of WC Policy	0.01401	
									Total	**5.45861**	
3 PM-35	E&C PO No. 6071 dated 22.07.2011, ₹28.66 crore Supply PO No. 6070 dated 22.07.2011, ₹100.98 crore	Larsen and Toubro (L&T)	Common Services Package contract for KAPP-3&4	KAPP-3 22.07.2014 KAPP-4 22.01.2015 KAPP-4 31.12.2022	31.05.2018	KAPP-3 912 days KAPP-4 1096 days	KAPP-3 19.01.2017 KAPP-4 22.01.2018	Delay in release of work front and drawing	Net additional Payment towards price adjustment due to unfreezing of indices	12.03	As per the contract conditions, the erection work was to be carried out as per the latest revision of the drawings received from engineering division. On scrutiny it is observed that due to non-availability of inputs i.e. drawings and work fronts, delay of 912 days in KAPP-3 and 1096 days in KAPP-4 found attributable to NPCIL. as per delay analysis done up to 31.05.2018. Accordingly, NPCIL vide amendment no. XXII dated 21.01.2020 allowed price adjustment in E&C PO up to 19.01.2017 for KAPP-3 and 22.01.2018 for KAPP-4. Due to delay in providing drawings & work front, NPCIL has to pay additional financial implication of ₹ 13.453 crore for period from 22.07.2014 to 19.01.2017 for KAPP-3
									Reimbursement for extension of performance bank guarantee.	0.093	
									Reimbursement for renewal of insurance charges	0.84	

Sr No	P.O NO, Date and Amount	Supplier Name	Item details	CDD (Extended CDD)	Period up to which delay analysis done	Period of delay attributable to NPCIL	Date up to which price adjustment(PA) allowed beyond CDD date	Reason for delay in completion of PO	Additional financial implication		
									Description	Amount (₹ in cr)	Remark
									Reimbursement of payment towards increased taxes and duties	0.49	and from 22.01.2015 to 22.01.2018 for KAPP-4.
									Total	**13.453**	
4 PM 36	E&C PO No. 6109 Date 07.09.2012 ₹10.68 crore Supply PO No. 6108 dated 07.09.2012 , ₹90.85 crore	M/s BHEL	Supply, Erection & Commissioning of "Control Centre Instrumentation Package" for KAPP 3 & 4	KAPP-3 06.07.2015 KAPP-4 06.01.2016 KAPP-3 30.06.2020 KAPP-4 31.03.2023	(original CDD) KAPP-3 06.07.2015 KAPP-4 06.01.2016	KAPP-3 545 days KAPP-4 523 days	KAPP-3 01.01.2017 KAPP-4 04.07.2017	Delay in release of work front, providing input document/drawing to the contractor, approval of drawing, testing etc	Net Financial Implication for allowing price adjustment beyond original CDD	1.34	Delay analysis was done up to original CDD and submitted to Board Sub-Committee on Monitoring ongoing project in March 2019. As per DAR, delay of 545 days for KAPP-3 and 523 days for KAPP-4 in E&C PO was attributed to NPCIL. Accordingly, amendment was issued in E&C PO on 26 February 2020 for allowing price adjustment beyond original CDD i.e up to 01.01.2017 & 04.07.2017 for KAPP-3 and KAPP-4 respectively. Total financial implication on account of allowing price adjustment beyond original CDD is ₹ 1.37 crore
									Extension of PBG	0.012	
									Extension of insurance cover	0.014	
									Tax implication	0.0057	
									Total	**1.3717**	
5 PM 37	E&C PO No. 6416 Date 22.07.2011 ₹ 28.48 crore	M/s Larsen and Toubro, Chennai	Contract for supply, erection and commissioning of Common Service	RAPP-7 22.01.2015 RAPP-8 22.07.2015 RAPP -8	22.07.2015	821 days	20.10.2017	Delay in release of work front	Price adjustment amount payable at prevailing indices up to period of delays	1.85	NPCIL recommended (October 2018) payment towards price adjustment in the extended contract period for the portion of delay (821 days) apportioned over NPCIL and payment of financial charges towards renewal/extension of validity of Bank Guarantees/ insurance

Sr No	P.O NO, Date and Amount	Supplier Name	Item details	CDD (Extended CDD)	Period up to which delay analysis done	Period of delay attributable to NPCIL	Date up to which price adjustment(PA) allowed beyond CDD date	Reason for delay in completion of PO	Additional financial implication		
									Description	Amount (₹ in cr)	Remark
	(Supply PO No. 6415 dated 22.07.2011 , ₹ 100.98 crore)		Packages contract for RAPP-7&8	31.12.2022					apportioned over NPCIL (22.07.2015-20.10.2017)		instruments/warrantees or guarantees extension, additional taxes/duties as per the contractual provisions. Accordingly, NPCIL vide amendment no. XIX dtd. 22.02.2019 allowed price adjustment, extension of bank guarantee and insurance period upto 20.10.2017 as delay was attributable to purchaser. Freezing of indices has done as on 20.10.2017. The total additional financial implication due to delays attributable to NPCIL under E&C PO stands at ₹.16.30 crore
									Price adjustment amount payable at frozen/prevailing indices for balance work	11.25	
									Charges towards renewal /extension of validity of Bank guarantee/ Insurance/ Warrantees	0.67	
									Charges towards additional taxes/ duties	2.53	
									Total	**16.30**	
6 PM 42	E&C PO No. 6412 Date 03.06.2011 Rs	M/s Punj Lloyd Limited, Gurgaon	Primary Piping Package For RAPS 7&8	RAPP-7 03.06.2015 RAPP-8 03.12.2015	Up to CDD (RAPP-7 03.06.2015 RAPP-8	1097 days	05.12.2018	Delay in release of work front and requisite drawings	Financial implication towards escalation and taxes on prevailing	44.34	Due to delay in erection work on account of non-releasing of site front to supplier, there would be additional financial implication of ₹ 47.29 crore towards escalation over a period up to expected completion of works

Sr No	P.O NO, Date and Amount	Supplier Name	Item details	CDD (Extended CDD)	Period up to which delay analysis done	Period of delay attributable to NPCIL	Date up to which price adjustment(PA) allowed beyond CDD date	Reason for delay in completion of PO	Additional financial implication		
									Description	**Amount (₹ in cr)**	**Remark**
	59.30 crore (Supply PO No 6411 Date 03.06.2011, Rs 289.10 crore)			RAPP-8 31.12.2022)	03.12.2015				/estimated indices up to 05.12.2018 and frozen for the balance period		including reimbursement of Insurance charges and BG charges etc. The financial implication is based on escalation and taxes on prevailing /estimated indices up to 05.12.2018 and frozen for the balance period up to expected completion of work i.e. December 2021.
									BG/PBG/Insurance charges	2.95	
									Total	**47.29**	
7 PM 45	E&C PO No. 6393 Date 24.02.2011 Rs 11.85 crore (Supply PO No 6392 Date 24.02.2011, Rs 31.57 crore)	M/s Larsen & Toubro Ltd, chennai	220/400 kV Switchyard Package	RAPP-7 31.12.2014 RAPP-8 30.06.2015 (RAPP-7 and RAPP-8 31.12.2021	30.06.2017	1212 days	31.10.2018	Delay in release of work front	Price adjustment for the work executed upto Dec-16	0.54	NPCIL issued an amendment No. XV dated 25.01.2019 thereby allowing payment of price adjustment along with reimbursement of financial charges towards renewal/extending validity towards BGs/Insurance Instruments/Warranty or Guarantee extension/additional taxes or duties thereon beyond original CDD i.e up to 31.10.2018 for RAPP 7 & 8 sites. In this context, NPCIL had additional financial implication of ₹.1.64 crore on account of allowing various aforesaid payments beyond CDD which arrived based on the DAR (period upto 30.06.2017).
									Price adjustment for expected value of escalation for left out work	0.77	
									Extension of BG charges (July-15 to Mar-19)	0.09	
									Extension of insurance cover (April-16 to March-19)	0.24	

Sr No	P.O NO, Date and Amount	Supplier Name	Item details	CDD (Extended CDD)	Period up to which delay analysis done	Period of delay attributable to NPCIL	Date up to which price adjustment(PA) allowed beyond CDD date	Reason for delay in completion of PO	Additional financial implication		
									Description	Amount (₹ in cr)	Remark
									Total	**1.64**	
8 PM 47	E&C PO No. 6087 Date 28.09.2011 Rs.387.09 crore (Supply PO No. 6086 Date 28.09.2011 , Rs.446.87 crore)	M/s Dodsal Enterprises Pvt. Ltd, Mumbai & M/s Dodsal Engineering & consortium Pvt ltd, Dubai	Supply, Erection & Commissioning of Balance of Turbine Island Package" for KAPP 3 & 4	KAPP-3 27.03.2015 KAPP-4 27.09.2015 (KAPP-3 27.03.2023 KAPP-4 27.03.2023	KAPP-3 27.03.2015 KAPP-4 27.09.2015	760 days	KAPP-3 27.04.2017 KAPP-4 27.10.2017	Delay in release of work front and requisite inputs	Price adjustment in erection PO-6087	42.76	Total delay of 760 days was found attributable to NPCIL upto CDD. Hence NPCIL allowed price adjustment beyond CDD upto 27.04.2017 for KAPP-3 & 27.10.2017 for KAPP-4 as per prevailing indices. In this context, NPCIL had additional financial implication of ₹.42.76 crore against the payment of price adjustment in erection PO-6087 along with reimbursement against finance charges at actual on Bank Guarantees, Insurance, Taxes & Duties, increases in Service Tax, New taxes at actual as per the terms of the contract.
									PBG charges for extended period (Oct-19 to Dec-21)	2.80	
									ABG charges for the extended period (Oct-19 to Mar-20)	0.036	
									Insurance charges for the extended period (July-20 to Dec-20)	0.72	
									Total	**46.316**	
9 PM 49	E&C PO No. 6067 Date 03.06.2011	M/s Punj Lloyd Limited, Gurgaon.	Primary Piping Package contract for KAPP-3&4	KAPP-3 03.12.2014 KAPP-4 03.06.2015	KAPP-3 03.12.2014 KAPP-4 03.06.2015	1090 days	KAPP-3 28.11.2017 KAPP-4 28.05.2018	Delay in releasing Work fronts, FIM and Drawings	An additional financial implication towards escalation towards	**31.63**	In supply PO, 39% of supplies were made by M/s PLL within CDD. The reason for delay includes delay from NPCIL side in releasing floor response spectra for seismic analysis affecting delivery of 47 items out of 63 items. The floor response spectra were

Sr No	P.O NO, Date and Amount	Supplier Name	Item details	CDD (Extended CDD)	Period up to which delay analysis done	Period of delay attributable to NPCIL	Date up to which price adjustment(PA) allowed beyond CDD date	Reason for delay in completion of PO	Additional financial implication		
									Description	Amount (₹ in cr)	Remark
	Rs 58.64 crore (Supply PO No. 6066 Date 03.06.2011 , Rs.277.54 crore)			KAPP-4 31.12.2022					allowed price adjustment beyond CDD .		provided to M/s PLL after 2 years of PO placement. Under erection PO, work could not be completed within stipulated CDD, due to delay in releasing Work fronts, FIM and Drawings from NPCIL side. In respect of KAPP-3, the first work front was released on 01.04.2014 against stipulated releasing period 01.12.2011 to 31.12.2012. Further FIM Equipment were to be issued to M/s PLL from 01.03.2012 to 30.06.2013 however many of the FIM equipment could not be issued to supplier within CDD. Also, the drawings were to be issued to M/s PLL from 01.10.2011 to 31.10.2012 for KAPP-3 however complete drawings could not be released to supplier within CDD. For KAPP-4 also, there was a delay in issue of FIM, work front release and issue of drawings. As delay was mainly attributable to NPCIL, price adjustment for E&C PO was allowed beyond original CDD. up to 28.11.2017 & 28.05.2018 for KAPP-3 & KAPP-4 respectively Due to unfreezing of price indices and price adjustment provision for Erection PO an additional financial implication of ₹. 31.63 crore in E&C PO would be paid as escalation over a

Sr No	P.O NO, Date and Amount	Supplier Name	Item details	CDD (Extended CDD)	Period up to which delay analysis done	Period of delay attributable to NPCIL	Date up to which price adjustment(PA) allowed beyond CDD date	Reason for delay in completion of PO	Additional financial implication: Description	Amount (₹ in cr)	Remark
											period for the delay attributable to NPCIL at prevailing indices up to 28.11.2017 for KAPP-3 and 28.05.2018 for KAPP-4.
10 PM-71	Erection PO No. 6450 dated 04.07.2012, Rs. 14.01crore (Supply PO No. /6449 dated 04.07.2012, Rs.72.78 crore)	M/s Punj Lloyd Ltd, Gurgaon	Main Plant Air Conditioning and Ventilation System Package of RAPP-7&8	RAPP-7 03.10.2015 RAPP-8 03.04.2016 RAPP-8 (31.12.2022	03.04.2016	663 days	26.01.2018	Non-availability of work front, power supply for equipment system commissioning, process water and chilled water for commissioning of cooling units etc.	Additional financial implication in erection PO due to escalation to be paid over a period up to expected completion of works.	8.45	Audit observed that the NPCIL could not completed the erection work of the main plant air conditioning and ventilation system package within the CDD due to reasons attributable to NPCIL. The main reasons of delay were non-availability of work front, non-availability of power supply from NPCIL for equipment system commissioning, non-availability of process water and chilled water for commissioning of cooling units etc. within the stipulated time period. As per L-2 Committee Report (05.04.2018), delay of total 663 days was found attributable to NPCIL as on original CDD i.e. 03.04.2016. For the reasons of delay in erection work on the part of NPCIL, an additional financial implication of ₹ 9.44 crore are payable to the contractor
									Charges towards renewal /extension of validity of bank guarantee/insurance/warrantee	0.99	
Total										9.44	
11 PM-72	Erection PO No. 6102 dated 04.07.2012, Rs.	M/s Punj Lloyd Ltd	Main Plant Air Conditioning and Ventilation System	KAPP-3 03.04.2015 KAPP-4 03.10.2015	KAPP-3 03.04.2015 KAPP-4 03.10.2015	691 days	KAPP-3 22.02.2017 KAPP-4 22.08.2017	Non-availability of work front and delay in issue of drawings	Additional financial implication to be paid escalation over period	**10.45**	NPCIL could not complete the work within the CDD due to reasons attributable to NPCIL. As per L-2 Committee Report (17.04.2018), delay of total 691 days was found attributable to NPCIL as on original

Sr No	P.O NO, Date and Amount	Supplier Name	Item details	CDD (Extended CDD)	Period up to which delay analysis done	Period of delay attributable to NPCIL	Date up to which price adjustment(PA) allowed beyond CDD date	Reason for delay in completion of PO	Additional financial implication		
									Description	Amount (₹ in cr)	Remark
	13.99 crore (Supply PO No. 6101 dated 04.07.2012, Rs. 72.62 crore)		Package of KAPP-3&4	(KAPP-3 31.03.2020 KAPP-4 31.12.2023)					up to expected completion of works.		CDD For the reasons of delay in erection work on the part of NPCIL, an additional financial implication of ₹. 10.45 crore are to be payable to the contractor.
									Grand Total	**186.54**	

Table-2 Adhoc payment towards assessed additional financial implications

Sr No	P.O NO, Date and Amount	Supplier Name	Item details	CDD (Extended CDD)	Period up to which delay analysis done	Period of delay attributable to NPCIL	Date up to which price adjustment(PA) allowed beyond CDD date	Reason for delay in completion of PO	Assessed additional financial implications			Approved adhoc payment (₹ in crore)
									Description	Amount (₹ in cr)	Remark	
1 PM 50	E&C PO No. 6453 Date 28.06.2012 Rs 21.83 crore (Supply PO No. 6452	M/s HDOL, Mumbai	Field Instrumentation Package (FIP) for RAPP-7&8	RAPP-7 27.12.2015 RAPP-8 27.06.2016 (RAPP-7	27.06.2016	1242 days	Final approval of delay analysis is not there and hence formal amendment for allowing price adjustmen	Delay in release of work fronts, frequent change in facilities, and delay due to	Price variation based on prevailing indices and reimbursement of financial charges towards renewal/extension of validity of Bank guarantees/ Insurance instruments/ warrantee or guarantee/additional taxes or duties	20.23	The erection work in the PO could not be completed within CDD due to delay in release of work fronts, frequent change in facilities, and delay due to deferment of supply of Polysulphide compound from NPCIL to M/s HDOL. NPCIL during October 2019 accorded approval for the adhoc payment of ₹. 20.23 crore under E&C PO to M/s HDOL against	20.23

Sr No	P.O NO, Date and Amount	Supplier Name	Item details		CDD (Extended CDD)	Period up to which delay analysis done	Period of delay attributable to NPCIL	Date up to which price adjustment(PA) allowed beyond CDD date	Reason for delay in completion of PO	Additional financial implication: Description	Amount (₹ in cr)	Remark
	Date 28.06.2012 , Rs 158.17 crore)			30.09.2023 RAPP-8 31.03.2024)			t is yet to be issued.	deferment of supply of Polysulphide compound from NPCIL			price variation based on prevailing indices and reimbursement of financial charges for the delays of 1242 days beyond the CDD found attributable to NPCIL. Pending approval of delay analysis, NPCIL vide Amendment no. IX of dated 18.11.2019 allowed adhoc payment payment of ₹20.23 crore towards Price variation based on prevailing indices and reimbursement of financial charges for extension/renewal of bank guarantee/insurance instruments/warranty/guarantee/additional taxes or duties.	
2 PM-51	E&C PO NO 6105 dated 28.06.2012 Rs. 23.35 crore (Supply Po No 6104 dated 28.06.2012 Rs.	M/s L&T	Field Instrumentation Package (FIP) for KAPP-3&4	KAPP-3 27.06.2015 KAPP-4 27.12.2015 KAPP-4 31.03.2023)	KAPP-3 27.06.2015 KAPP-4 27.12.2015	KAPP-3 841 days KAPP-4 848 days	Final Approval of delay analysis is not there and hence formal amendment for allowing price adjustment is yet to be issued.	Delay in releasing of work front, drawings and engineering inputs etc.	(i) a.)Financial implication on account of PVC in erection PO due to unfreezing of indices up to 22.09.2017 and 31.03.2018 for KAPP-3 & KAPP-4 respectively (b.) Financial implication on account of PVC in erection PO had the work would been completed within original CDD	17.53 5. 68	In respect of supply PO, 95% supplies were completed upto May 2019. The reasons for delay in supply were delay in conveying design inputs/change requests, forwarding change proposal, approval of manufacturing documents to the contractor by NPCIL. In respect of Erection PO, the erection work could not be completed in the original CDD due to delay in releasing of work front, working drawings and	**10**

Sr No	P.O NO, Date and Amount	Supplier Name	Item details	CDD (Extended CDD)	Period up to which delay analysis done	Period of delay attributable to NPCIL	Date up to which price adjustment(PA) allowed beyond CDD date	Reason for delay in completion of PO	Additional financial implication			
									Description	Amount (₹ in cr)	Remark	
	169.5 crore)								Net Financial implication on account of PVC in erection PO (a-b)	11.85	engineering inputs within stipulated time. The delay of 841 days and 848 days for KAPP-3 and KAPP-4 respectively under E&C PO was found attributable to NPCIL. Pending approval of delay analysis, NPCIL in June 2019 approved adhoc payment of ₹ 10 crore under E&C PO towards additional financial implications.	
									(ii) Charge towards extension of bank guarantee	0.129		
									(iii) Charge towards renewal of insurance	0.687		
									(iv)Payment towards increased taxes and duties beyond original CDD and up to 30.06.2017	0.013		
									Total	**12.679**		
									Grand Total	**32.909**		**30.23**
									Grand Total (Table1+ Table2)	**216.77 (186.54+ 30.23)**		

Annexure 8.6

[Refer to paragraph no.8.2.3.2]

Details of Insurance Contracts for which NPCIL incurred avoidable expenditure on account of extension of validity period

Name of the insurer	Site	Original validity of Insurance	Premium paid (₹ in Crore)	Extended period of policy	Premium paid for extension (₹ in Crore)
M/s. The Oriental Insurance Co. Ltd. Mumbai	KAPP-3&4	30.10.13 to 29.04.17	16.18	1st (30.4.17 to 31.12.19)	12.44
	KAPP-3&4			2nd (01.01.20 to 31.03.21)	5.87
	KAPP-4			3rd (01.04.21 to 30.06.22)	2.42
				4th (01.07.22 to 30.06.23)	2.00
M/s. National Insurance Co. Ltd. Mumbai	RAPP-7&8	01.10.14 to 31.03.18	19.06	1st (01.04.18 to 31.03.21)	16.51
				2nd (01.04.21 to 30.09.22)	18.52
				3rd (01.10.22 to 30.09.23)	12.56
Grand Total					**70.32**

Annexure – 8.7

[Refer to paragraph no.8.2.3.3]

Scrap/obsolete items lying in stores.

Sr. No.	Name of Stores	Particulars	No of Items	Value (₹ In crore)
1	TVS	Imported Items	94	0.28
		Indigenous and Fabrication Items	6	0.01
2	TAPS	Township and TAPS 1 to 4 scraps	47	1.85
3	KAPS	Scrap items lying in stores	18	0.68
		Total	**165**	**2.82**

Appendices

Appendix I: Grants released to Central Autonomous Bodies auditable under Section 14 &15 of Comptroller and Auditor General's (Duties, Powers and Conditions of Service) Act, 1971

(Refer to Paragraph 1.5)

(₹ in crore)

Sl.No	Ministry/ Department Name of Autonomous Body	Amount of grants released in FY 2021-22
Central Autonomous Bodies under DEPARTMENT 0F SPACE		
1.	Physical Research Laboratory, Ahmedabad	163.50
2.	National Atmospheric Research laboratory, Gadanki	35.00
3.	North Eastern Space Applications Centre, shillong	32.00
4.	Semi-Conductor Laboratory, Chandigarh	417.55
5.	Indian Institute of Space Technology, Thiruvananthapuram	112.00
	Sub-Total	**760.05**
Central Autonomous Bodies under DEPARTMENT 0F ATOMIC ENERGY		
6.	Atomic Energy Education society, Mumbai	98.00
7.	Harish Chandra Research Institute, Prayagraj	29.89
8.	Institute of Mathematical Science, Chennai	49.30
9.	Institute of Physics, Bhubaneswar	31.31
10.	Institute for Plasma Research, Gandhi Nagar	226.20
11.	Saha Institute of Nuclear Physics Kolkata	113.04
12.	Tata Institute of Fundamental Research Mumbai	630.80
13.	Tata Memorial Center, Mumbai	1006.27
14.	National Institute of Science Education and Research, Bhubaneswar	129.39
15.	Homi Bhabha National Institute, Mumbai	2.67
16.	Centre for Excellence in Basic Sciences, Mumbai	21.61
	Sub-Total	**2338.48**
Central Autonomous Bodies under DEPARTMENT OF SCIENCE AND TECHNOLOGY		
17.	Agharkar Research Institute-MACS, Pune	37.13
18.	Aryabhatta Research Institute of observational sciences, Nainital	41.56
19.	Bose Institute, Kolkata	100.47
20.	Birbal Sahni Institute of Palaeosciences, Lucknow	59.91
21.	Centre for Nano and Soft Matter Sciences, Bengaluru	20.21
22.	Indian Association Cultivation Sciences, Kolkata	128.99
23.	Indian Institute of Astrophysics, Bengaluru	122.78
24.	Indian Institute of Geomagnetism, Navi Mumbai	59.39
25.	Institute of Advanced Study in Science & Technology (IASST), Guwahati	37.32
26.	Indian of Nano Science and Technology, Mohali	60.63
27.	International Advanced Research Centre for Powder Metallurgy and New Materials, Hyderabad	76.61
28.	Jawaharlal Nehru Centre for Advanced Scientific Research, Bengaluru	122.87
29.	Raman Research Institute (RRI), Bengaluru	65.47

Sl.No	Ministry/ Department Name of Autonomous Body	Amount of grants released in FY 2021-22
30.	S.N. Bose National Centre for Basic Sciences (SNBNCBS), Kolkata	49.75
31.	Wadia Institute of Himalayan Geology, Dehradun	63.66
32.	Technology Information, Forecasting & Assessment Council (TIFAC), New Delhi	22.00
33.	National Innovation Foundation- India, Gandhinagar	13.75
34.	Northeast Centre for Technology Application and Reach (NECTAR), Shillong	13.00
35.	Vigyan Prasar, Noida	18.72
36.	Indian Academy of Sciences, Bengaluru	4.00
37.	Indian National Academy of Engineering, New Delhi	3.55
38.	Indian National Science Academy, New Delhi.	20.24
39.	Indian Science Congress Association, Kolkata	4.50
40.	The National Academy of Sciences, India, Prayagraj	3.50
	Sub-Total	**1150.01**
Central Autonomous Bodies under DEPARTMENT OF BIOTECHNOLOGY		
41.	National Institute of Immunology, New Delhi	76.89
42.	National Centre for Cell Science, Pune	48.25
43.	Centre for DNA finger printing & Diagnostics, Hyderabad	46.06
44.	National Brain Research Centre, Gurgaon	29.25
45.	National Institute for Plant Genome Research, N.Delhi	59.25
46.	Institute of Bio resources & Sustainable Development, Imphal	19.61
47.	Institute of Life Science, Bhubaneswar	52.15
48.	Translational Health Science & Technology, Faridabad	42.85
49.	Rajiv Gandhi Centre for Biotechnology, Thiruvananthapuram	120.30
50.	National Institute of Biomedical Genomics, Kalyani	30.72
51.	National Agri-food Biotechnology Institute, Mohali	19.18
52.	Institute for Stem Cell Research and Regenerative Medicine, Bengaluru	39.64
53.	National Institute of Animal Biotechnology, Hyderabad	28.80
54.	Centre for Innovative and Applied Bio Processing, Mohali	8.70
55.	International Centre for Genetic Engineering and Biotechnology, New Delhi	33.50
	Sub-Total	**655.15**
Central Autonomous Bodies under MINISTRY OF ENVIRONMENT, FORESTS AND CLIMATE CHANGE		
56.	Indian Council of Forestry Research and Education, Dehradun	230.00
57.	Central pollution Control Board	115.73
58.	G.B. Pant National Institute of Himalayan Environment, Almora	24.00
59.	Indian Institute of Forest Management, Bhopal	27.50
60.	National Centre for Sustainable Coastal Management (NCSCM), Chennai.	23.88
61.	Salim Ali Centre for Ornithology and Natural History (SACON), Coimbatore.	10.55
62.	Institute of Forest Genetics and Tree Breeding (IFGTB), Coimbatore.	16.98
63.	Padmaja Naidu Himalayan Zoological Park, Darjeeling	35.35
64.	Tropical Forest Research Institute, Jabalpur	17.65
65.	Institute of Forest Productivity, Ranchi	10.12

Sl.No	Ministry/ Department Name of Autonomous Body	Amount of grants released in FY 2021-22
66.	Rain Forest Research Institute, Jorhat	16.09
67.	Forest Research Centre for Bamboo & Rattan, Aizawl	1.10
	Sub-Total	**528.95**
Central Autonomous Bodies under MINISTRY OF NEW AND RENEWABLE ENERGY		
68.	National Institute of Wind Energy	20.00
69.	National Institute of Bio Energy	4.96
70.	National Institute of Solar Energy	13.66
	Sub-Total	**38.62**
Central Autonomous Bodies under MINISTRY OF EARTH SCIENCES		
71.	National Institute of Ocean Technology, Chennai	196.61
72.	Indian National Centre for Ocean Information Services, Hyderabad	59.79
73.	National Centre for Earth Sciences Studies, Thiruvananthapuram	23.27
	Sub-Total	**279.67**
	Total	**5750.93**

Appendix II: Outstanding Utilisation Certificates

(Refer to Paragraph 1.6)

(₹ in crore)

Sl. No.	Ministry/Department	Period to which grants relate (upto March 2021)	Utilisation Certificates outstanding in respect of grants released upto March 21 which were due by 31st March 2022	Amount (₹ in Crore)
			Number	**Amount**
1.	**Department of Atomic Energy**			
		Up to March 2014	238	18.26
		2014-20	589	87.71
		2020-21	53	2.66
		Sub-Total	**880**	**108.63**
2.	**Department of Space**			
		Upto March 2014	129	3.70
		2014-20	318	30.06
		2020-21	73	6.76
		Sub-Total	**520**	**40.52**
3.	**Department of Scientific and Industrial Research**			
		Upto March 2014	210	1596.48
		2014-20	1337	9237.93
		2020-21	239	219.30
		Sub-Total	**1786**	**11053.71**
4.	**Department of Science and Technology**			
		Upto March, 2014	--	--
		2014-20	5808	2560.38
		2020-21	3301	1855.48
		Sub-Total	**9109**	**4415.86**
5.	**Department of Biotechnology**			
		Upto March 2014	--	**--**
		2014-20	15304	6144
		2020-21	2737	1860

Sl. No.	Ministry/Department	Period to which grants relate (upto March 2021)	Utilisation Certificates outstanding in respect of grants released upto March 21 which were due by 31st March 2022	Amount (₹ in Crore)
		Sub-Total	**18041**	**8004**
6.	**Ministry of Environment Forest & Climate Change**			
		Upto March 2014	3791	163.25
		2014-20	725	451.67
		2020-21	199	178.49
		Sub-Total	**4715**	**793.41**
7.	**Ministry of New and Renewable Energy**			
		Upto March, 2014	114	79.08
		2014-20	404	715.33
		2020-21	275	1017.89
		Sub-Total	**793**	**1812.30**
8.	**Ministry of Earth Sciences**			
		Upto March 2014	462	31.94
		2014-20	132	27.69
		2020-21	68	7.69
		Sub-Total	**662**	**67.32**
		Total	**36506**	**26295.75**

Appendix III: List of Central Public Sector Enterprises
(Refer to Paragraph 1.7)

SI No.	Ministry/Department	Apex CPSE/Implementing Unit or Plant	Name of CPSE
1.	MNRE	Apex	Himachal Renewables Limited
2.	MNRE	Apex	Indian Renewable Energy Development Agency Ltd., Delhi
3.	MNRE	Apex	Solar Energy Power Corporation of India Limited, Delhi
4.	MNRE	Apex	Lucknow Solar Power Development Corporation Limited
5.	MNRE	Apex	Rewa Ultra Mega Solar Limited, Corporate Office
6.	MNRE	Apex	Karnataka Solar Power Development Corporation Limited, Bengaluru
7.	MNRE	Apex	Renewable Power Corporation of Kerala Limited, Kasargod
8.	MNRE	Apex	Andhra Pradesh Solar Power Corporation Private Limited, Vijayawada
9.	DBT	Apex	Biotechnology Industry Research Assistance Council, Delhi
10.	DBT	Apex	Bharat Immunological & Biological Corporation Ltd., Delhi
11.	DBT	Apex	Indian Vaccines Company Limited, Delhi
12.	DSIR	Apex	Central Electronics Ltd., Ghaziabad
13.	DSIR	Apex	National Research Development Corporation, New Delhi
14.	MoEF&CC	Apex	A&N Islands Forest and Plantation Dev. Corporation Ltd., Port Blair
15.	DOS	Apex	Antrix Corporation Ltd, Bengaluru
16.	DOS	Apex	New Space India Limited, Bengaluru
17.	DAE	Apex	Bhartiya Nabhikiya Vidyut Nigam Limited (Bhavini), Kalpakkam
18.	DAE	Apex	Electronics Corporation of India Limited, Hyderabad
19.	DAE	Apex	Anushakti Vidyut Nigam Limited, Corporate Office, Mumbai
20.	DAE	Apex	Indian Rare Earth (India) Limited, Head Office, Mumbai
21.	DAE	Apex	Nuclear Power Corporation of India Ltd - Indian Oil Nuclear Energy Corporation Ltd, Mumbai
22.	DAE	Apex	Nuclear Power Corporation of India Ltd - NALCO Power Company Limited, Mumbai
23.	DAE	Apex	Nuclear Power Corporation of India Ltd., Corporate Office, Mumbai
24.	DAE	Apex	IREL-IDCOL Ltd, (Corporate Office)
25.	DAE	Apex	Uranium Corporation of India Ltd., (UCIL Corporate Office)
26.	DAE	Implementing Unit/Plant	Indian Rare Earths Ltd. Manavalakuruchi Kanyakumari
27.	DAE	Implementing Unit/Plant	Madras Atomic Power Station, Kalpakkam
28.	DAE	Implementing Unit/Plant	Uranium Corporation of India Ltd., Tummalpalle, Andhra Pradesh.
29.	DAE	Implementing Unit/Plant	Indian Rare Earths Limited, Chavara
30.	DAE	Implementing Unit/Plant	Electronics Corporation of India Limited, Mumbai

Sl No.	Ministry/Department	Apex CPSE/Implementing Unit or Plant	Name of CPSE
31.	DAE	Implementing Unit/Plant	Indian Rare Earths Limited, Aluva
32.	DAE	Implementing Unit/Plant	Electronics Corporation of India Limited, Zonal office, Bengaluru
33.	DAE	Implementing Unit/Plant	Nuclear Power Corporation of India Ltd, Narora
34.	DAE	Implementing Unit/Plant	Nuclear Power Corporation of India Ltd, Kaiga
35.	DAE	Implementing Unit/Plant	Nuclear Power Corporation of India Ltd - Contract and Material Management, Mumbai
36.	DAE	Implementing Unit/Plant	Nuclear Power Corporation of India Ltd - Kakrapar Atomic Power Station (Units 1 & 2), Gujarat
37.	DAE	Implementing Unit/Plant	Nuclear Power Corporation of India Ltd - Tarapur Atomic Power Station (Units 1 & 2), Maharashtra
38.	DAE	Implementing Unit/Plant	Nuclear Power Corporation of India Ltd - Rawatbhata Rajasthan Site
39.	DAE	Implementing Unit/Plant	Indian Rare Earths Ltd (IREL), Ganjam, Odisha
40.	DAE	Implementing Unit/Plant	Electronics Corporation of India Limited, Chennai
41.	DAE	Implementing Unit/Plant	Kudankulam Nuclear Power Project, Kudankulam

Appendix IV: List of CPSE against which Nil comments were issued.
(Refer to Paragraph 1.7)

SI. No.	Ministry/Department	Apex CPSE/Implementing Unit or Plant	Name of CPSE
1.	MNRE	Apex	Indian Renewable Energy Development Agency Ltd., Delhi
2.	MNRE	Apex	Solar Energy Power Corporation of India Limited, Delhi
3.	MNRE	Apex	Rewa Ultra Mega Solar Limited, Corporate Office
4.	MNRE	Apex	Karnataka Solar Power Development Corporation Limited, Bengaluru
5.	MNRE	Apex	Renewable Power Corporation of Kerala Limited, Kasargod
6.	DBT	Apex	Biotechnology Industry Research Assistance Council, Delhi
7.	DOS	Apex	Antrix Corporation Ltd, Bengaluru
8.	DOS	Apex	New Space India Limited, Bengaluru
9.	DAE	Apex	Bhartiya Nabhikiya Vidyut Nigam Limited (Bhavini), Kalpakkam
10.	DAE	Apex	Electronics Corporation of India Limited, Hyderabad
11.	DAE	Apex	Nuclear Power Corporation of India Ltd., Corporate Office
12.	DAE	Apex	IREL-IDCOL Ltd
13.	DAE	Apex	Uranium Corporation of India Ltd.
14.	DAE	Apex	Indian Rare Earth (India) Limited

Appendix V: Statement of losses and irrecoverable dues written off/waived during 2021-22 *(Refer to Paragraph 1.8)*

(Amount in ₹. lakh)

Name of Ministry/ Department	Write off of losses and irrecoverable dues due to									
	Failure of system		Neglect/fraud etc.		Other reasons		Waiver of recovery		Ex-gratia Payments	
	Cases	Amount	Cases	Amount	Cases	Amount	Cases	Amount	Cases	Amount
Department of Atomic Energy	-	-	-	-	13	4.12	-	-	-	-
Ministry of New and Renewable Energy					2058	7.70				
Department of Bio-Technology	NIL									
Department of Science and Technology	NIL									
Department of Scientific and Industrial Research	NIL									
Department of Space	NIL									
Ministry of Earth Sciences	NIL									
Ministry of Environment, Forest and Climate Change	NIL									
Total					**2071**	**11.82**				

Appendix VI: Department/Ministry wise break-up of outstanding Inspection Reports and Paragraphs

(Refer to Paragraph 1.9)

Sl. No.	Ministry/Department	IR	Para
1.	Department of Atomic Energy	183	926
2.	Department of Space	155	1063
3.	Department of Scientific and Industrial Research	185	1101
4.	Department of Science and Technology	266	1503
5.	Department of Biotechnology	78	426
6.	Ministry of Earth Sciences	81	487
7.	Ministry of Environment, Forest and Climate Change	320	2014
8.	Ministry of New and Renewable Energy	45	382
	Total	**1313**	**7902**

Appendix VII: Summarised position of the Action Taken Notes (ATNs) awaited from various Ministries/ Departments as of March 2023- ATNs which have not been received from the Ministry/Department even for the first time.

(Refer to Paragraph 1.11)

Sl. No.	No. & Year of Report	Para No.	Para title	Date of laying in the Parliament	Delay in submission of ATNs
Ministry of Environment, Forest and Climate Change					
1.	4 Of 2022	Entire Report	Performance Report on 'Conservation of Coastal Ecosystems'	08/08/2022	06 Months
2.	26 Of 2022	2.3.4 (sl.no. 47)	Current Assets (Schedule 11): ₹ 16.79 crore	20/12/2022	28 Days
3.	26 Of 2022	2.3.4 (sl.no. 48)	Current Assets, Loans, Advances: ₹ 83.32 crore	20/12/2022	28 Days
4.	21 Of 2022	5.4	Short recovery of rent of ₹ 96.72 lakh from a bank	20/12/2022	2 Months and 5 Days
5.	21 Of 2022	5.3	Unfruitful expenditure of ₹ 73.35 lakh on a demonstration project	20/12/2022	2 Months and 5 Days
6.	21 Of 2022	5.2	Pollution caused by Plastic	20/12/2022	2 Months and 5 Days
7.	21 Of 2022	5.1	Assistance to Botanic Gardens Scheme	20/12/2022	2 Months and 5 Days
Department of Biotechnology					
8.	6 of 2020	14.2	Extra expenditure towards grant of allowances to employees	23/09/2020	26 Months and 22 Days
Department of Scientific and Industrial Research					

9.	26 Of 2022	2.3.2 (sl.no. 24)	(i) Current Liabilities: 70.35 crore (ii) Liabilities against Government grants (Schedule 5): ₹ 99.84 crore	20/12/2022	28 Days
10.	21 Of 2022	4.1	Irregular grant of incentives and allowances	20/12/2022	2 Months and 5 Days
11.	2 of 2021	11.1	Functionality of IT Application System 'OneCSIR'	24/03/2021	21 Months and 23 Days
Department of Space					
12.	21 Of 2022	2.1	Management of fabrication activities at Vikram Sarabhai Space Centre	20/12/2022	2 Months and 5 Days
13.	21 Of 2022	2.4	Non-utilisation of GSAT-6 Satellite	20/12/2022	2 Months and 5 Days
Department of Atomic Energy					
14.	2 of 2021	3.2	Short realisation of lease rent	24/03/2021	20 months and 23 Days
Commercial Units					
Ministry of New and Renewable Energy					
1.	6 of 2020	13.1	Non-availing of CENVAT credit in time on inputs/capital goods procured	23.09.2020	29 Months
2.	6 of 2020	13.2	Payment of tax deducted at source (TDS) on behalf of land owners	23.09.2020	29 Months
Department of Atomic Energy					
3.	2 of 2021	4.5	Payment of inadmissible Family Planning Allowance to Employees	24.03.2021	23 months
4.	2 of 2018	10.1.1	Irregular payment towards leave encashment.	13.03.2018	60 months

Appendix VIII: **Summarised position of the Action Taken Notes (ATNs) awaited from various Ministries/ Departments as of March 2023- ATNs on which Audit has given comments/observations but revised ATNs have not been received.**

(Refer to Paragraph 1.11)

Sl. No.	No. & Year of Report	Para No.	Para title	Date of issue of vetting comments on the ATN	Delay in submission of revised ATNs
Department of Space					
1.	21 Of 2022	2.5	Irregular expenditure of ₹ 7.57 crore towards development of Sullurupeta	24/02/2023	15 Days
2.	21 Of 2022	2.3	Avoidable payment of Taxes and Duties of ₹ 69.02 lakh	24/02/2023	15 Days
3.	21 Of 2022	2.2	Avoidable Investment of ₹ 28.09 crore	24/02/2023	15 Days
Department of Biotechnology					
4.	2 Of 2018	4.2	Irregular grant of promotion and entitlement.	31/10/2022	04 Months and 11 Days
Ministry of Earth Sciences					
5.	2 OF 2018	8.2	Irregular protection of pay	01/10/2021	17 Months and 10 Days
Ministry of Environment, Forest and Climate Change					
6.	27 of 2014	6.3	Wasteful expenditure on hiring of office accommodation	13/09/2017	66 Months and 8 Days
Department of Atomic Energy					
7.	2 of 2021	3.3	Payment of House Rent Allowance at higher rates[41]	31/10/2022	04 Months and 10 Days

[41] ***National Institute of Science Education and Research, Bhubaneswar paid House Rent Allowance to its employees at higher rates, which resulted in excess payment of ₹ 2.80 crore during the period from July 2015 to February 2020.***