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सत्यमेव जयते

Report of the Comptroller and Auditor General of India for the year ended March 2015

भारतीय लेखा एवं लेखापरीक्षा विभाग ✦ INDIAN AUDIT AND ACCOUNTS DEPARTMENT

सत्यमेव जयते

Union Government
Scientific and Environmental

Ministries/Departments

Report No. 12 of 2016

(Compliance Audit)

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Presented to Lok Sabha on..........
Presented to Rajya Sabha on..........

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Comptroller and Auditor General of India

for the year ended March 2015

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Contents

Preface

This report of the Comptroller and Auditor General of India for the year ended March 2015 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 Union Government Scientific and Environmental Ministries/Departments.

The instances mentioned in this report are those, which came to notice in the course of test audit for the period 2014-15 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 2014-15 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

Introduction

This report of the Comptroller and Auditor General of India (C&AG) relates to matters arising from compliance audit of the transactions of seven Scientific and Environmental Ministries/Departments of the Government of India. The report contains 11 paragraphs involving ₹ 32.49 crore relating to weaknesses in procurement and contract management, inefficient project management, irregular financial benefits extended to employees, deficient internal controls, etc.

An overview of the specific audit findings included in this report is given below:

Follow up of performance audit of procurement of stores and inventory management

Based on 32 recommendations made in Audit Report of the Comptroller and Auditor General of India No. 13 of 2010-11 (Performance Audit), Department of Atomic Energy (DAE) submitted a detailed action plan with measurable timeframes to implement the audit recommendations. A follow up audit was carried out to examine the extent of compliance by DAE to the proposed action plan.

The follow up audit showed that full implementation was achieved in only six out of 32 recommendations made. While partial implementation was seen in action proposed for seven recommendations, the progress was insignificant against 16 recommendations. No progress was made against actions stated for three recommendations.

Deficiencies in planning for procurements, adherence to time schedules and contract management persisted. Implementation of computerisation of materials management functions remained insignificant.

Thus, on the whole, action taken by DAE against its own stated plan was largely inadequate.

(Paragraph 2.1)

Non-installation of Steam Turbine Generator

Due to inefficient contract management by Heavy Water Board and Directorate of Purchase and Stores, Mumbai, a Steam Turbine Generator could not be installed even after lapse of more than 10 years. This resulted in blocking of ₹ 2.06 crore incurred in its procurement besides loss of opportunity to generate electricity estimated at ₹ 40 crore.

(Paragraph 2.2)

Irregular administrative and entitlements operations

Institute for Stem Cell Biology and Regenerative Medicine, Bengaluru did not follow Government rules and regulations in its administration and entitlements matters. This resulted in irregularities such as recruitment of staff without sanction for creation of posts, payment of higher entitlements of ₹ 2.86 crore to its staff, recruitment of in-eligible candidates, etc.

(Paragraph 3.1)

Unfruitful expenditure on procurement of BSL-3 facility

Centre for Cellular and Molecular Biology, Hyderabad procured a Bio-Safety Level-3 facility by making 100 *per cent* advance payment without ensuring proper installation of the same. There were problems in the facility that could not be rectified, which resulted in unfruitful expenditure of ₹ 1.90 crore incurred in its procurement.

(Paragraph 4.1)

Computerisation in administration, finance and related areas

Department of Space (DOS) undertook in-house development of Computerised Working in Administrative Areas (COWAA). COWAA was implemented in all centres of DOS. The system lacked proper inbuilt validation checks and application controls. Certain business rules were not incorporated. Data entry into the system was not regular. Consequently, information generated from the system was incomplete, inaccurate and inconsistent leading to poor data integrity and significant dependence on manual operations, which defeated the purpose of working in a computerised environment.

(Paragraph 5.1)

Implementation of Telemedicine programme

Department of Space could not ensure effective utilisation of satellite communication for providing health services to patients in rural and remote areas even after incurring expenditure of ₹ 30.18 crore. Out of 389 networks established, only 150 were operational. In addition, selection of beneficiary hospitals was irregular, satellite capacity for remote and interior areas of the country was inadequate and Ka band ground terminals worth ₹ 14.12 crore could not be utilised.

(Paragraph 5.2)

Wasteful expenditure on material for propellant tanks

Department of Space did not prepare a definite time based action plan for phasing out a material found to cause failures in propellant tanks of launch vehicles. This resulted in wasteful expenditure of ₹ 3.49 crore towards the cost of one propellant tank and 65 tonnes of the material kept in stock that was ultimately quarantined.

(Paragraph 5.3)

Loss due to delayed commissioning of equipment

Department of Space waived off liquidated damages for delay in supply and commissioning of a system on-board a satellite having limited operational life and thereby extended undue benefit to the contractor to the extent of ₹ 1.16 crore. Besides, the delay resulted in proportionately lesser use of its operational life.

(Paragraph 5.4)

Unfruitful expenditure on consultancy services

Department of Space hired a firm for providing architectural and other consultancy services for construction of a building in New Delhi without following due diligence in selection of the firm. The firm could not comply with the initial design requirements of the statutory authority and DOS rescinded the contract and decided to carry out the work in-house. Consequently, payment of ₹ 1.04 crore made to the firm was rendered unfruitful.

(Paragraph 5.5)

Non-establishment of desalination plants and wasteful expenditure

National Institute of Ocean Technology, Chennai undertook a project on establishment of desalination plants in six islands of Lakshadweep without conducting detailed survey of locations, techno-economic conditions and assessment of its resources for execution of the large scale project. As a result, out of six plants planned, only two plants were established. Of the remaining four plants, one plant was established but remained non-functional even after spending ₹ 4.32 crore due to site related issues, resulting in wasteful expenditure. NIOT incurred expenditure of ₹ 37.54 crore on the project. An amount of ₹ 69.28 crore remained idle with NIOT.

(Paragraph 6.1)

CHAPTER - I

Introduction

1.1 About this Report

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

The primary purpose of the Report is to bring to the notice of the Parliament, important results of audit. Auditing Standards 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 as also to frame policies and directives that will lead to improved financial management of the organisations, thus, contributing to better governance.

This chapter, in addition to explaining the planning and extent of audit, provides a brief analysis of the expenditure of Scientific and Environmental Ministries/Departments, position of outstanding utilisation certificates, position of proforma accounts of departmentally managed Government Undertakings, losses and irrecoverable dues written off/waived and follow-up on audit reports. Chapters II to VI present findings/observations arising out of the compliance audit of Scientific and Environmental Ministries/Departments and research centres, institutes and autonomous bodies under them. Weaknesses that exist in the system of project management, financial management, internal controls, etc., in various scientific and environmental institutions are also highlighted in the report.

1.2 Audit coverage

The office of the Principal Director of Audit, Scientific Departments is responsible for audit of following Scientific and Environmental Ministries/Departments of the Government of India and their units:

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 (MoEFCC)**
6) **Ministry of New and Renewable Energy (MNRE)**
7) **Ministry of Water Resources, River Development and Ganga Rejuvenation (MoWRRDGR)**

This report covers the audit findings in respect of the above Scientific and Environmental Ministries/Departments and their subordinate/attached offices and autonomous bodies.

1.3 Planning and conduct of Audit

Compliance audit is conducted in accordance with the principles and practices enunciated in the auditing standards promulgated by the C&AG. The audit process starts with the assessment of risk of the Ministry/Department as a whole and each unit based on expenditure incurred, criticality/complexity of activities, level of delegated financial powers, assessment of internal controls and concerns of stakeholders. Previous audit findings are also considered in this exercise. Based on this risk assessment, the frequency and extent of audit are decided. An annual audit plan is formulated to conduct audit on the basis of such risk assessment.

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 2014-15, compliance audit of 175 out of 434 units of Scientific and Environmental Ministries/Departments was conducted.

1.4 Budget and expenditure controls

The comparative position of expenditure of the Scientific and Environmental Ministries/Departments during 2014-15 and preceding two years is given in Table 1.

Table 1 : Details of expenditure incurred by Scientific and Environmental Ministries/ Departments

(₹ in crore)

Ministry/Department	2012-13	2013-14	2014-15
1) DAE	11,981.76	13,437.26	14,281.21
2) DBT	1,282.84	1,291.32	1,346.97
3) DST	2,524.22	2,610.22	2,906.18
4) DSIR	2,945.66	3,159.54	3,393.52
5) DOS	4,856.28	5,168.95	5,821.37
6) MoES	1,177.14	1,248.15	1,301.35
7) MoEFCC	1,996.69	2,158.80	1,862.17
8) MNRE	1,243.72	1,633.52	2,518.10
9) MoWRRDGR	1,055.59	1,094.71	5,524.47
Total	**29,063.90**	**31,802.47**	**38,955.34**
Percentage increase(+)/decrease(-)	**(-)14.84**[1]	**(+)9.42**	**(+)22.49**

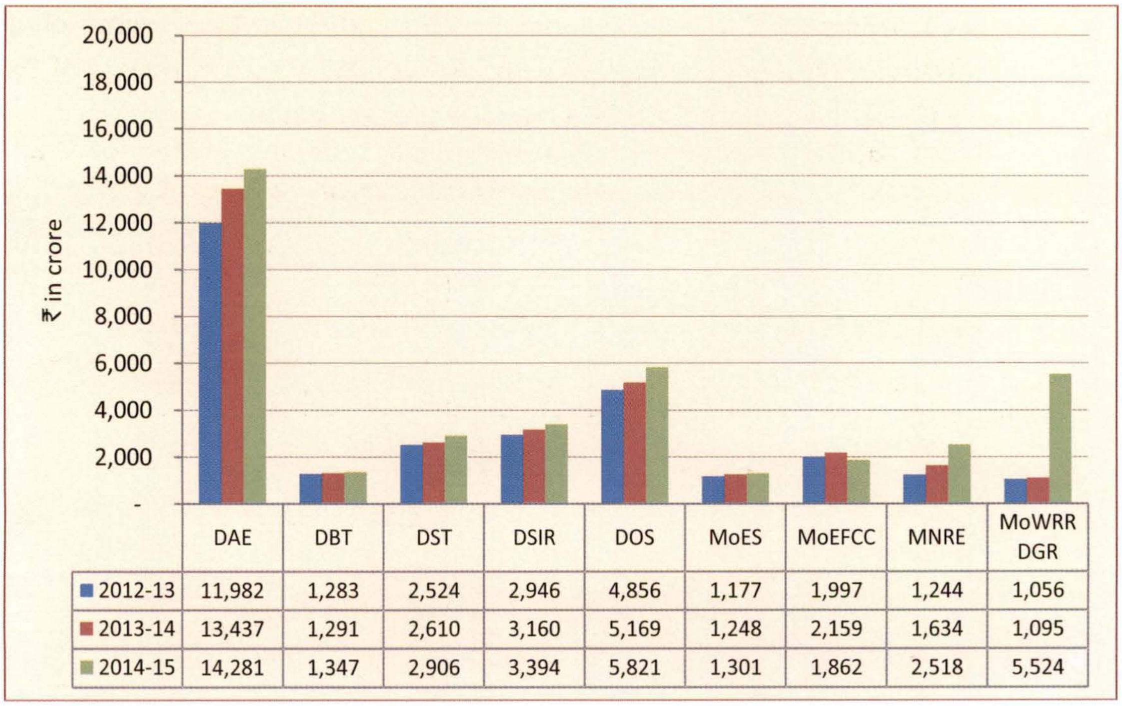
Source : Appropriation Accounts of the respective years

The total expenditure on above listed Ministries/Departments of the Government of India during 2014-15 was ₹ 38,955.34 crore. Of this, 37 *per cent* of the total expenditure was incurred by DAE, followed by DOS (15 *per cent*) and MoWRRDGR (14 *per cent*).

While there was a significant decrease of 14.84 *per cent* in the overall expenditure of the Scientific and Environmental Ministries/Departments during 2012-13 over 2011-12, there was an increase in total expenditure by 9.42 *per cent* during 2013-14 over 2012-13. During 2014-15, there was a significant increase in total expenditure by 22.49 *per cent* due to an increase of 405 *per cent* in the expenditure incurred by MoWRRDGR.

[1] Calculated on the basis of expenditure of ₹ 34,127.84 crore incurred in 2011-12.

Chart 1: Expenditure incurred by Scientific and Environmental Ministries/Departments



	DAE	DBT	DST	DSIR	DOS	MoES	MoEFCC	MNRE	MoWRR DGR
2012-13	11,982	1,283	2,524	2,946	4,856	1,177	1,997	1,244	1,056
2013-14	13,437	1,291	2,610	3,160	5,169	1,248	2,159	1,634	1,095
2014-15	14,281	1,347	2,906	3,394	5,821	1,301	1,862	2,518	5,524

A summary of Appropriation Accounts for 2014-15 in respect of Scientific and Environmental Ministries/Departments is given in Table 2.

Table 2: Details of provision and expenditure incurred by Scientific and Environmental Ministries/Departments

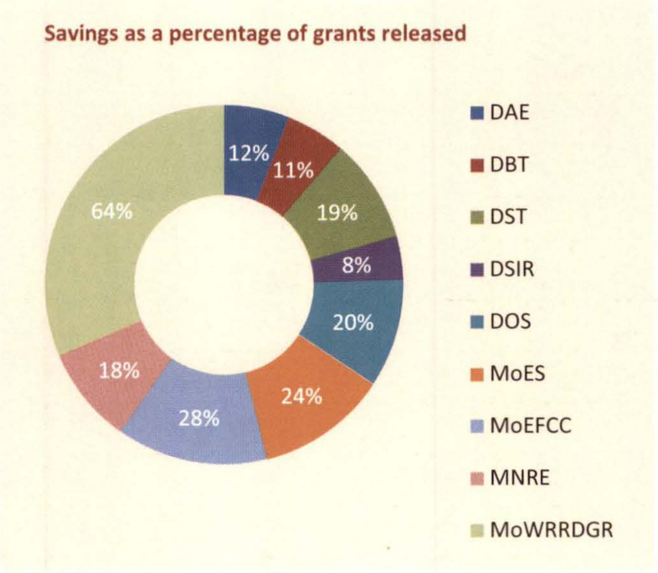
(₹ in crore)

Ministry/ Department	**Grant/ Appropriation (including Supplementary Grant)**	**Expenditure**	**(-) Savings/ (+) Excess**	**Percent-age of unspent grant**
1) DAE	16,147.00	14,281.21	1,865.79	12
2) DBT	1,517.24	1,346.97	170.27	11
3) DST	3,567.13	2,906.18	660.95	19
4) DSIR	3,707.17	3,393.52	313.65	8
5) DOS	7,241.06	5,821.37	1,419.69	20
6) MoES	1,702.23	1,301.35	400.88	24
7) MoEFCC	2,594.52	1,862.17	732.35	28
8) MNRE	3,057.39	2,518.10	539.29	18
9) MoWRRDGR	15,389.06	5,524.47	9,864.59	64
Total	**54,922.80**	**38,955.34**	**15,967.46**	**29**

Source: Appropriation Accounts for 2014-15

It can be seen from the above table that with reference to total budget allotment of ₹ 54,922.80 crore, the Scientific and Environmental Ministries/ Departments had an overall savings of ₹ 15,967.46 crore which constitutes 29 *per cent* of the total grant/appropriation. Out of total savings of ₹ 15,967.46 crore, savings of ₹ 9,864.59 crore (62 *per cent*) were contributed by MoWRRDGR alone.

Chart 2: Ministry/ Department wise percentage of savings



With the exception of DSIR, all the other Scientific and Environmental Ministries/Departments had significant savings ranging between 11 *per cent* and 64 *per cent*. Proportion wise, of the grants released to the Scientific and Environmental Ministries/ Departments, the savings of MoWRRDGR were the highest (64 *per cent*), followed by MoEFCC (28 *per cent*).

1.5 Audit of accounts of Autonomous Bodies

Principal Director of Audit, Scientific Departments is the sole auditor of 14 autonomous bodies for which Separate Audit Reports (SARs) are prepared on their annual accounts under sections 19(2) and 20(1) of the C&AG's (DPC) Act, 1971. The total grants released to these 14 autonomous bodies during 2014-15 were ₹ 4,489.96 crore, as detailed in Table 3.

Table 3: Details of grants released to Central Autonomous Bodies

(₹ in crore)

Name of the Autonomous Body		Ministry/ Department	Amount of Grant released during 2014-15
1)	Science and Engineering Research Board, New Delhi	DST	535.00
2)	Sree Chitra Tirunal Institute of Medical Sciences and Technology, Thiruvananthapuram	DST	90.84
3)	Technology Development Board, New Delhi	DST	6.75
4)	Council of Scientific and Industrial Research, New Delhi	DSIR	3,334.88
5)	Animal Welfare Board of India, Chennai	MoEFCC	16.87
6)	Central Zoo Authority, New Delhi	MoEFCC	29.50
7)	National Biodiversity Authority, Chennai	MoEFCC	19.06
8)	National Mission for Clean Ganga, New Delhi	MoEFCC	254.88
9)	National Tiger Conservation Authority, New Delhi	MoEFCC	10.00
10)	Wildlife Institute of India, Dehradun	MoEFCC	22.30
11)	Betwa River Board, Jhansi	MoWRRDGR	17.00
12)	Brahmaputra Board, Guwahati	MoWRRDGR	80.00
13)	Narmada Control Authority, Indore	MoWRRDGR	10.88
14)	National Water Development Agency, New Delhi	MoWRRDGR	62.00
	Total		**4,489.96**

Source: Separate Audit Reports/Annual accounts of the Autonomous Bodies for the year 2014-15

In addition, supplementary/superimposed audit of 68 other autonomous bodies are conducted under Sections 14 or 15 of the C&AG's (DPC) Act, 1971. The total grants released to 44[2] autonomous bodies during 2014-15 were ₹ 3,353.23 crore.

1.5.1 Delay in submission of accounts

The Committee on Papers Laid on the Table of the House recommended in its First Report (Fifth Lok Sabha) 1975-76 that after the close of the accounting year, every autonomous body should complete its accounts within a period of three months and make them available for audit and that the reports and the audited accounts should be laid before Parliament within nine months of the close of the accounting year.

The position of submission of accounts for the year 2014-15 to audit is indicated in Table 4.

[2] Information in respect of 16 autonomous bodies under DBT and eight autonomous bodies under MoEFCC was not furnished by the Department/Ministry.

Table 4: Position of submission of accounts by Autonomous Bodies

Name of Autonomous Body		Ministry/ Department	Date of submission of accounts to Audit	Delay in submission of accounts (in months)
1)	Science and Engineering Research Board, New Delhi	DST	15.09.2015	2
2)	Sree Chitra Tirunal Institute of Medical Sciences and Technology, Thiruvananthapuram	DST	13.08.2015	1
3)	Technology Development Board, New Delhi	DST	01.10.2015	3
4)	Council of Scientific and Industrial Research, New Delhi	DSIR	10.07.2015	-
5)	Animal Welfare Board of India, Chennai	MoEFCC	23.06.2015	-
6)	Central Zoo Authority, New Delhi	MoEFCC	30.06.2015	-
7)	National Biodiversity Authority, Chennai	MoEFCC	09.06.2015	-
8)	National Mission for Clean Ganga, New Delhi	MoEFCC	30.06.2015	-
9)	National Tiger Conservation Authority, New Delhi	MoEFCC	22.06.2015	-
10)	Wildlife Institute of India, Dehradun	MoEFCC	01.07.2015	-
11)	Betwa River Board, Jhansi	MoWRRDGR	26.06.2015	-
12)	Brahmaputra Board, Guwahati	MoWRRDGR	06.07.2015	-
13)	Narmada Control Authority, Indore	MoWRRDGR	16.06.2015	-
14)	National Water Development Agency, New Delhi	MoWRRDGR	30.06.2015	-

It can be seen from the above table that three autonomous bodies submitted their accounts after delay of one month or more.

1.5.2 Significant deficiencies in accounts

Some of the important issues highlighted in SARs on the accounts for the year 2014-15 are listed below:

1.5.2.1 Provisions of Gratuity and other retirement benefits

- **i)** Betwa River Board, National Mission for Clean Ganga and Brahmaputra Board did not include the provision for retirement benefits such as gratuity and leave encashment etc. in the annual accounts.
- **ii)** Accounting policy in regard to post employment benefit/retirement benefit e.g. gratuity and pension and other benefit was not disclosed in Notes to

accounts of Science and Engineering Research Board in pursuance with accounting standard 15 of ICAI.

iii) National Biodiversity Authority did not make provision for terminal benefits for the year 2014-15. Besides, an amount of ₹ 24.83 lakh provided as provision for gratuity, leave encashment etc., for previous years was also reversed and credited to Capital Fund. This resulted in understatement of liabilities and overstatement of Capital Fund to that extent.

iv) As per the actuarial valuation of pension and gratuity got done by Sree Chitra Tirunal Institute of Medical Science and Technology in 2011, it had a liability of ₹ 127.34 crore which was not provided for in the accounts.

v) As per actuarial valuation of Gratuity and Leave encashment as on 31.03.2015, National Water Development Authority had total liability of ₹ 43 crore of which the Authority made provision for only ₹ 11.04 crore which resulted in short provisioning of liability of ₹ 31.96 crore.

1.5.2.2 Other comments

i) Science and Engineering Research Board received an amount of ₹ 535.00 crore under the Object Head-31 'Grant-in-aid General' during 2014-15 including an amount of ₹ 172.86 crore which was diverted towards 'Grants for Creation of Capital Assets' without obtaining the approval for re-appropriation from the Ministry of Finance through the controlling Ministry/Department.

ii) National Biodiversity Authority depicted an amount of ₹ 15.56 crore representing royalty, fee, subscription as Income in Income and Expenditure account instead of showing the amount as addition to Earmarked/Endowment fund under 'liabilities'. Besides, an amount of ₹ 10.77 lakh being interest earned on investment made out Earmarked Funds was also booked as income. This led to overstatement of Income to the extent of ₹ 15.67 crore.

iii) National Biodiversity Authority accounted interest on Savings Bank Account on cash basis in contravention of its significant accounting policy which stated that accounts were prepared on accrual basis.

iv) The annual accounts of National Tiger Conservation Authority were revised based on audit comments. The impact of revision of accounts was that Assets/Liabilities were increased by ₹ 1.21 crore and excess of Expenditure over Income increased by ₹ 61.93 lakh.

v) Expenditure of ₹ 1.14 crore incurred by Science and Engineering Research Board on customisation and training charges etc. on developing application software for online submission and processing of research proposals, which was of revenue nature, was included in Fixed Assets. This resulted in overstatement of Fixed Assets and understatement of Revenue Expenditure by ₹ 1.14 crore.

vi) 14 laboratories/ institutes of CSIR did not account for interest amounting to ₹ 11.88 crore accrued during the year on Term Deposits made out of funds of Laboratory Reserve Fund (LRF) available with them, resulting in understatement of LRF and Current Assets by ₹ 11.88 crore.

vii) Five laboratories/ institutes of CSIR booked interest amounting to ₹ 23.06 crore earned on grants-in-aid for sponsored projects, as generation of LRF during the year. Further, seven laboratories/ institutes also booked the unspent balances of completed/closed externally funded projects amounting to ₹ 10.64 crore as their income generated during the year in LRF.

viii) Interest amounting to ₹ 1.42 crore accrued by National Aerospace Laboratories (NAL-laboratory of CSIR) during the year 2014-15 on Term Deposits made from the funds of Externally Funded Projects and LRF was not accounted in the books of accounts for the year 2014-15, resulting in understatement of Liabilities against Government Grant and Reserve and Surplus (LRF) by ₹ 1.42 crore, besides understatement of Current assets by same extent.

ix) CSIR (Headquarters) drew an amount of ₹ 20.00 lakh in 2005-06 for opening of a Savings Bank Account with ICICI Bank and inadvertently booked the same as expenditure in its books of accounts of the respective year, resulting in understatement of Currents Assets (Bank balance in Savings Accounts) and Current Liabilities (Miscellaneous Deposit and Advances) each by ₹ 20.00 lakh.

x) During 2014-15, NAL rendered its services to sponsoring departments/ agencies and paid Service Tax/ Value Added Tax of ₹ 1.96 crore which could not be realised from their respective sponsoring departments/ agencies as of 31 March 2015. The amount was booked as expenditure in its books of accounts for the year 2014-15 instead of disclosing under Current Assets (Payments on behalf of other bodies due) resulting in understatement of Current Assets (Payments on behalf of other bodies) by ₹ 1.96 crore and overstatement of Expenditure by same extent.

xi) Central Drug Research Institute (CDRI- Laboratory of CSIR) adjusted/ capitalised ten items of advances worth ₹ 11.65 crore in their respective years and the same were not in existence during the year 2014-15. Similarly, five items of advances against which cheques valuing ₹ 7.85 crore were drawn in March 2013 to September 2013 were cancelled in same year and as a result of this, advances were settled in the same year too. However, CDRI again adjusted/ capitalised the same by fictitious adjustment of actual/ genuine advances which were still pending for adjustment as of 31 March 2015.

xii) CDRI drew advances of ₹ 50.30 crore between 2012-13 and 2014-15. Therefore, depreciation at the rate of 10 *per cent* per annum for the period ranging from three to one years was required to be charged on Fixed Assets, considering that desired materials were received in the same year. However, depreciation at the rate of 10 *per cent* per annum for the period 10 to eight years was actually charged by CDRI resulting in charging of depreciation in excess of actual.

xiii) Betwa River Board maintained its accounts on cash basis, instead of accrual basis.

xiv) National Mission for Clean Ganga did not prepare its accounts in the Common Format of Accounts prescribed for Autonomous Bodies.

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 the information furnished by six[3] Ministries/Departments, 9,307 Utilisation Certificates (UCs) due by March 2015, for grants aggregating ₹ 1,573.86 crore were outstanding as given in ***Appendix I***. DST, DBT and DSIR did not furnish information about pending UCs.

Ministry/Department-wise position of outstanding UCs is given in Table 5.

[3] DAE, DOS, MoES, MoEFCC, MNRE and MoWRRDGR

Table 5: Utilisation Certificates outstanding as on 31 March 2015

(Amount in ₹ crore)

Ministry/Department	For the period ending March 2014	
	Number	Amount
1) DAE	1,162	89.61
2) DBT	Details not available	
3) DST	Details not available	
4) DSIR	Details not available	
5) DOS	289	14.66
6) MoES	724	55.70
7) MoEFCC	6,150	461.51
8) MNRE	733	850.31
9) MoWRRDGR	249	102.07
TOTAL	**9,307**	**1,573.86**

1.7 Departmentally Managed Government Undertakings - Position of Proforma Accounts

Rule 84 of the General Financial Rules, 2005 stipulates that departmentally managed Government Undertakings of commercial or quasi-commercial nature will maintain such subsidiary accounts and proforma accounts as may be prescribed by the Government in consultation with the C&AG.

There were two departmentally managed Government Undertakings of commercial or quasi-commercial nature as of 31 March 2015 under audit jurisdiction of this office, viz. Nuclear Fuel Complex, Hyderabad and Heavy Water Board, Mumbai under DAE. The financial results of these undertakings are to be reported through proforma accounts generally consisting of Trading Account, Profit and Loss Accounts and Balance Sheet. However, proforma accounts of both Heavy Water Board and Nuclear Fuel Complex for the period 2014-15 were not received for audit even after delay of more than one year.

1.8 Losses and irrecoverable dues written off/waived

Statement of losses and irrecoverable dues written off/waived during 2014-15 furnished by four Ministries/Departments is given in ***Appendix II*** to this Report. It can be seen from the Appendix that in 47 cases involving ₹ 21.02 lakh, the amounts were written off for 'other reasons'; in one case each, amount of ₹ 7,000 pertaining to waiver of recoveries and ₹ one lakh towards ex-gratia payment, were written off during 2014-15.

1.9 Response of the Ministries/Departments to Draft Audit Paragraphs

On the recommendations of the Public Accounts Committee, 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 within six weeks. This time frame has also been prescribed under Para 207 (1) of Regulations on Audit and Accounts 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. It is brought to their personal attention that in view of likely inclusion of such Paragraphs in the Audit Reports of the C&AG, which are placed before Parliament, it would be desirable to include their comments in the matter.

Draft Paragraphs proposed for inclusion in this report were forwarded to the Secretaries concerned between December 2015 and January 2016 through letters addressed to them personally.

This report contains 11 paragraphs including four long paragraphs involving ₹ 32.49 crore, featured in Chapters II to VI. The replies of concerned Ministries/Departments were received in respect of eight of the 11 paragraphs. Of these, audit observations in two paragraphs were accepted by the Department. The responses received in respect of the remaining six paragraphs have been suitably incorporated in the Report.

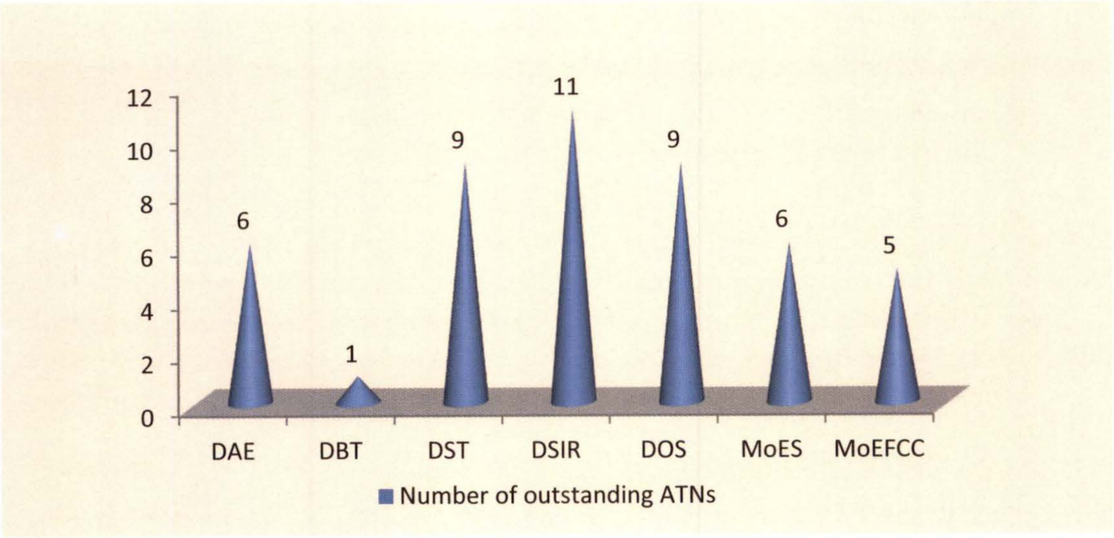
1.10 Follow-up on Audit Reports

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

A review of outstanding ATNs on paragraphs included in the Reports of the C&AG pertaining to Scientific and Environmental Ministries/Departments as of 31 December 2015 (details in ***Appendix III***) revealed that a total of five ATNs pending from three Ministries/ Departments were not received even for the first time, indicating delay in submission of ATNs ranging between 10 to 37 months. Also, revised ATNs in respect of 42 paras were pending from seven Ministries/ Departments ranging up to 104 months (***Appendix IV***).

The total position of outstanding ATNs is summarised in the Chart below:

Chart 3: Number of outstanding ATNs of Audit Reports



CHAPTER – II

Department of Atomic Energy

2.1 Follow up of performance audit of procurement of stores and inventory management

Progress made by Department of Atomic Energy in executing its own stated action plan for complying with recommendations made in an earlier Performance Audit Report on Procurement of Stores and Inventory Management was largely inadequate. Full implementation was achieved in only six out of 32 recommendations made. Deficiencies in planning for procurements, adherence to time schedules and contract management persisted. Implementation of computerisation of materials management functions remained insignificant.

2.1.1 Introduction

Directorate of Purchase and Stores, Mumbai (DPS) is a centralised purchase and stores organisation under Department of Atomic Energy (DAE) which is entrusted with the responsibility of materials management functions for various units of DAE. Procurement activities in DAE are governed by a Purchase Procedure (1972), which was revised in 2001. In order to bring in more professionalism and transparency, DAE brought out a comprehensive Purchase Manual (November 2009) enunciating the procedures for sourcing, procurements, storage and inventory control of materials within the purview of Government guidelines. The stores procedure of DAE was in existence since 1976. A revised and updated Stores procedure had been drafted (September 2014), which was pending approval by the competent authority as of February 2016.

2.1.1.1 Follow up audit

A Performance Audit of 'Procurement of Stores and Inventory Management in DAE' was conducted in 2008-09. Audit findings featured in the Report of the Comptroller and Auditor General of India No. 13 of 2010-11 (Performance Audit) and 32 recommendations were made. DAE accepted the recommendations of Audit and submitted a detailed action plan with measurable timeframes to implement the audit recommendations. DPS also issued (March 2011) a circular carrying out modifications in the practices and procedures followed in DAE. The actions taken by DAE were reviewed periodically through Action Taken Notes submitted by DAE. As the level of compliance to DAE's own commitments was found to be wanting, a follow up audit was undertaken to ascertain the extent to which DAE implemented the audit recommendations. The procurements handled by DPS and Regional Purchase Units (RPUs) at Chennai, Hyderabad and Indore were selected for examination. Out of 79,688 purchase orders valuing ₹5,981.49 crore placed by these entities during the period 2009-14, 2,070 purchase cases valuing ₹ 2,399.80 crore (40 *per cent* by value) selected on stratified random sampling basis and related payment folders were examined in audit.

2.1.2 Audit findings

Audit scrutinised records to examine procurement planning and processes, management of supplies and inventories and computerisation of purchase and stores functions in DPS and the selected RPUs. Audit recommendations made in the CAG's Report No. 13 of 2010-11, action proposed by DAE and audit findings on compliance thereof are discussed in the succeeding paragraphs.

2.1.2.1 Planning for procurements

(1) Overview of audit recommendations and action proposed by DAE

In the Performance Audit Report No. 13 of 2010-11, Audit reported on deficiencies in planning for procurements, ensuring timeliness of procurements and delays in procurements beyond the prescribed timeframes which resulted in additional financial liability for DAE. Audit recommendations made in the report, action plan proposed by DAE and status thereof were as follows:

Audit Recommendations	Action proposed by DAE on recommendations	Status of implementation
Annual Procurement Plans may be prepared and communicated to the purchase units consolidating requirements in advance to avoid delays and repetitive procurements thereby maximising value for money.	DPS in consultation with DAE will approach all the project authorities in the various constituent units of DAE for furnishing the annual procurement requirements/plans. This shall enable DPS to consolidate requirements as well as initiate advance action for procurement arresting avoidable delays as well as derive best value for money. Timeframe for proposed action - two months	Insignificant progress.
DAE may prescribe time schedules for single tender procurements below ₹50 lakh. DAE may also avoid delays in placement of orders.	Timeframes for various stages of procurements, stores and inventory activities will be defined and order will be issued suitably to all concerned. Timeframe by which proposed to be achieved – three months.	Partial implementation.

Audit Recommendations	Action proposed by DAE on recommendations	Status of implementation
The Purchase Orders (POs) should be placed in time to ensure supplies by the delivery schedules specified in the indents. Requirements raised on 'urgent', 'priority', 'immediate' basis etc., may be expressed in terms of specific timeframes for better procurement planning.	Indents raised with the expressions 'Urgent', 'on Priority', 'Immediate' etc., in respect of delivery requirements shall be largely discouraged and the indenters advised to necessarily indicate specific timeframes/dates within which the requirements are to be met. In this regard it is proposed to develop a standard indent template with mandatory fields without which it would not be possible to register the indents at DPS. This shall ensure compliance on the part of indenter to indicate firm delivery requirements by making the field mandatory. A circular is proposed to be issued to take care of this requirement. Timeframe for proposed action – one month	Insignificant progress.
DAE may streamline the system of procurement to ensure that POs are placed timely and supplies are ensured well within the time schedule of intended activities/projects.	A strong emphasis shall be made prevailing upon the project authorities of various units of DAE to plan the procurements in harmony with the time schedules of activities/projects. Timeframe for proposed action – two months	Partial implementation.
Timeframes for various stages of procurements, stores and inventory activities may be incorporated in the purchase and stores procedures.	Timeframes for various stages of procurements, stores and inventory activities will be defined and orders will be issued suitably to all concerned. Simultaneously a monitoring mechanism shall be established to ensure compliance for the timeframe notified. The above orders will be issued as a corollary to chapter 36 of Purchase manual which envisages Time Scheduling and Monitoring mechanism and the same will form part of the Purchase manual. Timeframe by which proposed to be achieved – three months.	Partial implementation.
DAE must put in place a proper oversight mechanism to ensure that timeframe prescribed for processing and finalisation of tenders is strictly adhered to by various procurement agencies of DAE.	In order to evolve a mechanism to ensure the adherence of timeframes, a task force comprising of members from various constituent units is proposed to be set up to study the issue in detail and recommend a strategy to address the point raised by Audit. A tentative composition of the proposed task force/committee shall be suggested to DAE by DPS. Necessary orders based on the recommendations of the committee and approval by competent authority will be issued as an enlargement of Clause 36.1.5 of Purchase Manual. Timeframe by which proposed to be achieved: a) Notification of task force/committee by DAE - two months; b) Final recommendations of the committee to be made within a period of six months after its constitution.	No progress.

Audit Recommendations	Action proposed by DAE on recommendations	Status of implementation
In view of the significant variation between the estimated costs and the actual purchase price in large number of procurements, DAE may examine the feasibility of laying down acceptable ranges of variation to provide benchmarks for determining the reasonableness of the quoted prices in a transparent and objective manner. A comprehensive set of guidelines may be developed to help the indenters prepare more accurate cost estimates at the indenting stage.	Indenting Officers will be insisted on to plan the procurement of items after taking into account the schedule of the project, processing time for placement of order and delivery schedules for the time. They will be impressed upon to indicate realistic delivery schedules on the indent body after factoring in the above mentioned time factors. A circular in this regard will be issued - one month A circular will be issued advising all Indenting Officers to furnish detailed computation and the basis for arriving at the estimated cost while raising the indent. Suitable directions shall also be issued for adopting uniform method while computing the estimated cost. Timeframe for proposed action – one month	Insignificant progress.
DAE may review its material requirement on a regular basis to update the list of common stock items and their optimum inventory levels.	The list of common stock items will be regularly reviewed. For this purpose a feedback mechanism from the users shall be put in place and depending on the consumption pattern, the list modified as may be felt necessary.	Insignificant progress.

(2) Audit findings

Audit findings based on further examination of records at DPS and selected RPUs are discussed in the subsequent paragraphs.

(i) Absence of Annual Procurement Plans

Based on the recommendations of audit, DPS instructed (March 2011) all units of DAE to prepare Annual Procurement Plans and submit the same to DPS by March of each year. Based on the individual plans, DPS was to prepare the consolidated Annual Procurement Plan. Audit observed that Annual Procurement Plans were prepared only for processing of common stock items. Audit further observed that even though Annual Plans were made for processing of common stock items, the requirements were not consolidated and POs were released on piecemeal basis. A case study on piecemeal procurement of furnace oil is discussed in Box 1.

Box 1: Piecemeal procurement of Furnace Oil

Clause 10.6.9 of the Purchase Manual of DAE stipulated that where the order is for large quantity, the benefit of economy of scale should be taken into account for estimation of the cost. DPS issued (November 2012) instructions for entering into common agreement with all the PSU oil companies for supply of furnace oil to achieve economy in price and consistency of rates.

Audit observed that DPS neither entered into annual rate contract nor negotiated with oil companies for supply of furnace oil. Instead, DPS and its RPUs continued to purchase furnace oil on piecemeal basis. During the period from December 2012 to March 2014, Hyderabad Regional Purchase Unit (HRPU) and Madras Regional Purchase Unit (MRPU) placed seven and six POs respectively for procurement of 8,628 MT of furnace oil from three oil companies at total cost of ₹ 45.28 crore. Failure to consolidate requirements and enter into a common agreement with oil companies was in contravention of the provisions of Purchase Manual as well as instructions of DAE. Besides, the possibility of incurring higher costs due to non-negotiation of prices for bulk procurements cannot be ruled out.

DAE stated (July 2013) that the feasibility of processing of requirements annually could be assessed on successful implementation of work flow automation software. Audit observed that this software was implemented (July 2014) only in MRPU. However, despite implementation of software, Annual Procurement Plans were yet to be prepared in the unit (May 2015), as the software was stated to be under improvisation. Other units of DAE did not prepare Annual Procurement Plans as the work flow automation system was not operational.

DPS stated (August 2015) that Indenting Units would, according to their plans, consolidate requirements and forward indents to DPS. Hence, there was no separate Annual Procurement Plan for DPS.

The fact remained that DPS was to prepare the consolidated Annual Procurement Plan based on the individual procurement plans, which was not done.

(ii) Delay in processing of indents

Initially, timeframes were prescribed for processing limited and public tenders in June 2002. These were revised in October 2005. After the CAG's Report No. 13 of 2010-11, DAE further re-defined (March 2011) the time schedule for various activities for purchase, stores and accounts. Audit scrutinised 984 purchase cases processed after March 2011 and upto 2013-14 and observed that DPS and selected RPUs failed to adhere to the prescribed timelines in 204 cases (21 *per cent*). The details are given in Table 6.

Table 6: Delay in processing of indents

Nature of tender	Cases	Value in ₹ crore	Time schedule prescribed by DAE (days)	Delay range beyond prescribed period (months)
1) Single Tender	38	24.05	60	3 to 13
2) Limited Tender(single bid)	64	10.53	150	3 to 17
3) Public Tender (single bid)	35	73.86	180	3 to 18
4) (a) Two Part Tender (limited tender)	12	79.28	240	3 to 17
(b) Two Part Tender (public tender)	55	193.38	240	3 to 24
Total	**204**	**381.10**	-	**3 to 24**

Of these delayed cases, 10 cases in each of four categories were selected for detailed examination to analyse stage wise delay. The findings are detailed in Table 7.

Table 7: Extent of delay in various stages of processing of purchase cases

Nature of delay	Single Tender			Limited Tender			Public Tender			Two Part Public Tender		
	Cases with delay	Prescribed time (days)	Delay in days	Cases with delay	Prescribed time (days)	Delay in days	Cases with delay	Prescribed time (days)	Delay in days	Cases with delay	Prescribed time (days)	Delay in days
Delay in issuing enquiry after receipt of indent	5	6	6-121	2	25	56-470	2	25	36-46	4	25	7-178
Delay in time between tender due date and date of issuing enquiry	10	14	9-100	10	30	8-99	8	45	1-38	7	60	13-74
Delay in time taken for preparation of Comparative Statement/referring of the files to User Department after due date	9	3	1-35	3	24	8-277	2	24	1-5	10	12	75-322
Delay in time taken for evaluation of offers and submission of recommendation to DPS	5	15	1-135	5	30	9-194	8	45	24-144	2	90	31-53
Delay in time taken for commercial settlement, preparation and submission of purchase Order to Pre-Audit after receipt of final recommendation	10	14	12-150	10	25	4-207	10	25	46-151	8	30	49-393
Delay in time taken by pre-audit	6	5	9-29	3	9	7-135	5	9	1-13	5	14	1-12
Delay in release of Purchase Order	5	3	2-82	5	7	4-45	2	7	2-40	5	9	1-70

The table shows that most of the delays occurred during commercial settlement, preparation and submission of POs to pre-audit after receipt of final recommendation. Significant time overrun also occurred in the time taken between issue of tender enquiry and receipt of bids.

DPS stated (August 2015) that while processing the indents, DPS was required to follow laid down procedures, CVC guidelines, etc. in order to ensure transparency and competition. Further, it stated that lack of responses, procedural aspects, etc. at times delayed finalising cases on time.

The fact however, remained that the delays in internal processes occurred in spite of time frame and guidelines prescribed by DPS/DAE.

(iii) Delays in placement of POs

Audit observed delays in placing of purchase orders after finalisation of tenders, which not only delayed the process of procurement but also contributed to price escalations due to expiry of validity of offers. In three cases detailed in Table 8, DPS could not place the PO on the lowest bidders within the validity period of the tenders. Later, it had to place PO at higher rates which resulted in a loss of ₹ 68.70 lakh.

Table 8: Cases of delays in placement of POs

Indenting Unit	Item	Lowest offer (₹)	Validity of offer	Issue of PO	PO Price (in ₹)	Difference (in ₹ lakh)
Heavy Water Plant, Manuguru	Caustic Soda lye	2.23 crore	November 2011	February 2012	2.67 crore	43.89
Bhabha Atomic Research Centre	Stainless Steel components	49.74 lakh	January 2008 extended to March 2008	July 2009	65.62 lakh	15.88
Bhabha Atomic Research Centre	Beryllium Copper Alloy Plates	4,675 per kg	June 2009	July 2010	5,000 per kg	8.93 (for 2,749 kg)
					TOTAL	**68.70**

Audit also observed instances in which the POs were placed after the delivery dates specified by the indenters. On review of 2,039 indents, it was observed that against 304 indents (15 *per cent* of cases) valued at ₹ 279.13 crore, POs were placed after periods upto 26 months from the delivery dates specified.

Thus, DPS and selected purchase units were unable to ensure timely placement of POs.

(iv) Lack of clarity in delivery schedules of procurements

DAE advised (March 2011) indenters to plan their procurements after taking into account various factors and indicate delivery schedules accordingly. Indenters were requested to avoid phrases such as 'urgent', 'immediate' etc.

Audit observed that the practice of using these vague delivery terminologies continued in indents. Out of 1,701 indents examined in audit, in 946[4] indents (56 *per cent*) valued at ₹ 907.13 crore, indenters had not specified delivery schedules and used terms such as "Immediate", "Urgent", "at the earliest" etc. This indicates that the instructions of DAE for assessing delivery schedules were not complied with.

Audit further observed that in spite of "Immediate", "Urgent", "at the earliest" delivery schedules mentioned in the indents, DPS and selected RPUs failed to adhere to the maximum prescribed timelines to place the order in 288 cases valued at ₹ 493.58 crore. The delay ranged from one to 115 months beyond the maximum prescribed time limit of 240 days. Though the requirement had been termed as urgent, the cases were processed by DPS in a routine manner.

(v) Lack of oversight mechanism

In its remedial action against the audit recommendation for establishing an oversight mechanism, DAE proposed to set up a task force to study the issue of adherence of timeframes. However, there were no records to indicate that such task force/committee was constituted. Audit observed that DPS prescribed (March 2011) a procedure only for reporting of failure to adhere to time frame. During test check of procurement cases, Audit found no instances of cases of delay in following time schedules being reported to the designated authority and/or corrective action taken.

From the above, it is evident that an oversight mechanism to check cases of delay in processing of procurements was not established.

(vi) Provision for time schedules for purchase and stores activities in Manuals

The updated Purchase Manual of DAE stipulated that officials may adhere to time schedules for each procurement activity prescribed by DPS. DAE had proposed to prescribe definite time schedules which would form part of the manual. DPS redefined (March 2011) time schedules for various activities for purchase, stores and accounts. These time schedules were, however, not incorporated in the Purchase Manual. Similarly, as no oversight mechanism to monitor compliance to prescribed time schedules was established, provisions relating to monitoring of procurement activities also remained omitted from the manual.

(vii) Variations between estimated and actual costs of procurement

Clause 10.6 of the Purchase Manual of DAE prescribes the methodology in arriving at estimates of cost of procurements. DPS also instructed (March 2011) indenting officers to follow the guidelines given in the Purchase manual and to provide a backup paper to show how estimated costs were arrived at. During test check of

[4] In DPS, HRPU and IRPU.

purchase cases, it was seen that no backup papers were attached with indents to justify or demonstrate the basis of cost estimates. In the absence of the same, it could not be ascertained as to whether the cost estimations were being done in accordance with guidelines given in the Purchase Manual.

2.1.2.2 Procurement process

(1) Overview of audit recommendations and action proposed by DAE

In the CAG's Audit Report No. 13 of 2010-11, Audit reported observations on large proportion of procurements being made after restrictive mode of tendering (single/limited tenders) by citing grounds of urgency. This not only restricted competition, but in many cases such tendering without ensuring timely installation/commissioning of equipment defeated the purpose of adopting restrictive mode of tendering. Audit also reported on weaknesses in contract management in DPS. Audit recommendations made in the report, action plan proposed by DAE and status thereof were as follows:

Audit Recommendations	Action proposed by DAE on recommendations	Status of implementation
Proposals seeking dispensation of normal mode of tendering on grounds of urgency could be backed by a certificate of readiness of site or commitment for readiness of site by a specified date and other requirements to ensure justification of such an action.	Efforts shall be made to impress upon the indenting officer to desist from suggesting the deviation only on the reasons of urgency. The matter is already discussed in the DPS council meeting held in December 2009 and the same will be taken up in the next Stores and Equipment Committee, BARC meeting for bringing this to the notice of all the Purchase Approving Authorities. A circular in this regard will be issued within one month.	Full implementation.
Intention to split the quantity, wherever necessary, should be clearly brought out at tendering stage and uniformity of prices may be maintained while awarding contract to more than one supplier. The provisions of GFR in distribution of quantities and determination of ordering price to various suppliers must be strictly followed.	As suggested, any intention for splitting the order shall be included in the tender enquiry document to maintain clarity amongst the bidders before submission of offers. As the purpose of splitting is to pre-empt over-dependence on a single supplier, such cases shall be monitored more stringently with the view of attaining the objectives for which splitting is carried out. Timeframe by which proposed to be achieved – one month.	Full implementation.

Audit Recommendations	Action proposed by DAE on recommendations	Status of implementation
While placing orders, strict compliance with purchase procedure and CVC guidelines may be ensured to maximise competition, minimize delays, reduce procurements and ensure adherence to delegated powers.	The Project Authorities/Indenting Officers shall be suitably advised on the need for complying with the Purchase Procedure as well as the extant CVC Guidelines in the procurement process right from the time of raising of indents upto order placement. This shall, inter alia, aim at minimising deviation from the prescribed tendering modes and generation of sufficient competition, thereby, arresting adverse financial implications. Timeframe by which proposed to be achieved – one month	Insignificant progress.
DAE may discontinue the practice of granting interest free advances to suppliers in compliance to CVC guidelines and adopt a uniform policy across its various procurement units with regard to rate of interest to be charged on such advances. Long outstanding advances against the suppliers may be reviewed and a time bound plan of action may be drawn up to settle them.	The action to assess and recover unadjusted amount of advances will be taken up in a phased manner to resolve the cases at the rate of 10 *per cent* in a quarter. A uniform policy for charging of interest on advances will be adopted.	Insignificant progress.
Extensions in delivery schedules may be granted only in exceptional circumstances instead of allowing extensions as a matter of routine. DAE may also review its general conditions of contract regarding liquidated damages to ensure that liquidated damages are charged as deterrent to avoid delays. Levy of Liquidated Damages (LD) should not be linked to incurring of financial loss, which may be difficult to quantify for R&D organisations.	A circular will be issued to Indenting Officers/ Project Authorities emphasising the need for extensive follow-up with the suppliers to ensure delivery of the item as per the schedules defined in the purchase order. In this context it would be expedient on the part of the Indenting Officers to scrupulously comply with the ordered terms in respect of aspects such as approval of drawings, carrying out of pre-dispatch inspection when called for etc., within a reasonable timeframe. Wherever delays are attributable to the contractor, a mechanism for levy of token LD could be put in place. This being a major departure from the laid down procedure shall require approval of DAE for which separate proposal would be put up within three months. Timeframe by which proposed to be achieved – three months after DAE approval.	Full implementation.

Audit Recommendations	Action proposed by DAE on recommendations	Status of implementation
DAE may like to revisit its provisions for re-fixing of delivery schedules as the new manual now gives legal sanction to re-fixing of delivery schedules due to purely departmental reasons. This will have a cascading effect not only on project schedules but also on financial implications of projects.	A direction in this regard shall be given to all concerned within a period of three months as part of Purchase Manual as an extension of Chapter 29.7. Timeframe by which proposed to be achieved – three months.	Full implementation.
A monitoring committee comprising of DPS and the indenting agencies may be set up for formal periodical monitoring of high value POs. An online monitoring system may be established, linking the various procurement agencies for effective contract management.	The issue of constituting Monitoring Committees comprising of indenting officers/ project authorities and DPS will be discussed with the heads of the units who in turn will be requested to constitute such committees. A communication in this regard will be issued. Timeframe by which proposed to be achieved – one month.	No progress.
DAE procurement procedure may be reviewed and suitably amended/ modified to address deficiencies and make it consistent with the provisions of the new General Financial Rules, 2005.	The purchase procedure shall be subjected to a thorough review to identify inconsistencies and thereafter necessary action shall be initiated towards harmonising the procedure with the provision of General Financial Rules (GFR). Powers to deviate from some of the provisions of GFR stand delegated to Director, P&S by DAE. Further, wherever needed, necessary approvals shall be sought and obtained from the competent authority for any other deviations from the provisions of GFR. Timeframe by which proposed to be achieved – six months.	Full implementation.

(2) Audit findings

Audit findings based on further examination of records at DPS and selected RPUs are discussed in the subsequent paragraphs.

(i) Compliance with Audit recommendations

On the following issues, Audit recommendations on procurement processes were complied with by DAE.

a) DAE agreed (March 2012) that proposals for dispensation of normal mode of tendering on grounds of urgency alone would be discouraged. During test check of purchase orders no case was found where normal mode of tendering was dispensed with on grounds of urgency.

b) DAE instructed (March 2011) that intention to split quantity of orders should be clearly brought out at the tendering stage and uniformity of prices maintained while awarding the contract to more than one supplier. During test check of purchase orders, no cases of splitting of tenders in contravention of above orders were noticed.

c) Regarding re-fixing of delivery schedules, DAE stated (March 2012) that it was decided to use this provision sparingly only when it is fully justified. During test check, no case of re-fixation of delivery schedule in contravention of above orders was noticed.

d) In accordance with its proposed follow up action to the audit recommendation regarding updating of Purchase manual, DAE brought out (November 2009) a comprehensive Purchase Manual enunciating the procedures for sourcing, procurements, storage and inventory control of materials.

(ii) Violation of purchase procedure

DAE instructed (March 2011) indenting officers to follow guidelines on evaluation of tenders and purchase recommendations provided in the Purchase Manual. Audit observed that in three cases, as detailed in Table 9, POs were placed without obtaining requisite approval of DAE.

Table 9: POs placed without approval of DAE

(Amount in ₹crore)

Indenting Unit	Purchasing unit	Item	Nature of tender	Financial powers of the indenting unit	Estimated cost of item	Value of PO
Nuclear Fuel Complex, Hyderabad	HRPU	Double strand 2 HPTR tube reducing mill	Public Tender	8.00	9.00	9.62
Rare Material Plant, Mysore	DPS	Part No. 20-MA-06 and 20-OR-06	Single Tender	2.00	5.10	5.62
Board of Radiation and Isotope Technology, Mumbai	DPS	Sodium Molybdate	Limited Tender	3.00	3.19	3.39

HRPU, which carried out the purchase in respect of Nuclear Fuel Complex above, stated (February 2015) that the criteria for determining competent authority was the basic cost of the material to be procured only, exclusive of the statutory levies and other charges. The reply is not acceptable, as total value of purchase was to be taken as the basis for applying the delegation of financial powers of sanction. This was clarified by DAE (June 2014) that the authority competent to approve purchase is to be determined based on the "total value of purchase" which would include all elements of expenditure including taxes.

(iii) Non-adjustment of advances paid to suppliers

As per Rule 159 of GFRs; incorporated in Clause 19.3.33.4 of the Purchase Manual of DAE, in case of advance payments, adequate safeguards in the form of bank guarantee etc. should be obtained from the firm to whom the advance payment is made. In CAG's Audit Report No. 13 of 2010-11, it was reported that 703 cases of advance payments amounting to ₹ 214.43 crore made by DPS and selected RPUs were lying unadjusted. Although DAE, in response to Audit recommendation, proposed to take action in this regard, Audit observed that substantial amounts of advances remained unadjusted for several years.

Test check of cases revealed that 169 cases of advance payments amounting to ₹ 54.43 crore made by DPS and its RPUs were still unadjusted for periods ranging from one to 33 years, as shown in Table 10.

Table 10: Details of unadjusted advances

(Amount in ₹)

Period of pendency of advance payments (years)	DPS		MRPU		HRPU		IRPU		Total	
	Cases	Amount	Cases	Amount	Cases	Amount	Cases	Amount	Cases	Amount
1 to 5	29	17,39,87,473	6	21,94,77,700	28	12,81,46,890	2	7,55,184	65	52,23,67,247
6 to 10	6	51,56,033	0	0	3	35,40,600	4	77,90,094	13	1,64,86,727
11 to 15	1	44,769	0	0	0	0	4	4,59,190	5	5,03,959
16 to 20	0	0	0	0	12	10,93,103	3	5,50,234	15	16,43,337
21 to 25	0	0	0	0	21	11,54,693	0	0	21	11,54,693
26 to 30	0	0	0	0	24	9,68,581	0	0	24	9,68,581
31 to 33	0	0	0	0	26	12,12,368	0	0	26	12,12,368
TOTAL	**36**	**17,91,88,275**	**6**	**21,94,77,700**	**114**	**13,61,16,235**	**13**	**95,54,702**	**169**	**54,43,36,912**

In HRPU, amount of ₹ 44.29 lakh of advances paid to suppliers was pending for periods up to 16 to 33 years. DAE did not provide information on the number of cases in which advance payments were released but supplies were yet to be received as of March 2015 and the position with regard to obtaining of bank guarantees against the advance payments and validity thereof as of March 2015.

(iv) Release of interest free advances to suppliers

As per CVC guidelines (2006) incorporated as Clauses 19.3.33.4 and 34.3.21.1 of the Purchase Manual of DAE, advance payments released to suppliers should generally be interest bearing so that the contractor does not derive undue benefit. Though DAE proposed in 2010 that uniform policy for charging of interest on advances will be adopted, DPS issued instructions only in November 2012 to charge interest at the rate of 12 *per cent* per annum on all advance payments in which authorised delivery periods were delayed. DPS further instructed that all contracts which authorise advance payment may carry clause for levying interest on advance for delayed period.

Audit observed three cases pertaining to period after issue of instructions by DAE, in which advance payments amounting to ₹ 1.26 crore were released to suppliers, however, no clause for levying interest on advance payments was inserted in the POs. The details are given in Table 11.

Table 11: Details of release of interest free advances to suppliers

Date of issue of PO	Name of supplier	Order value (₹)	Amount of advance (₹)	Date of release of advance	Percentage of advance	Delay in supply (months)	Amount of interest (₹)
1. May 2013	L&T Ltd.	3,47,97,684	34,79,768	July 2014	10	3	1,04,393
2. May 2013	Hind High Vacuum Company Ltd.	3,67,12,500	36,71,250	July 2013	10	19	6,97,538
3. June 2013	Symec Engineers (India) Pvt. Ltd.	2,75,00,000	27,50,000	August 2013	10	10	2,75,000
			27,50,000	January 2014	10	10	2,75,000
TOTAL							**13,51,931**

Although deliveries were delayed by three to 19 months in these cases, DAE could not levy interest on the advance payments released to the vendors in the absence of such enabling clause in the POs. Non-levy of interest on advances released to the firm resulted in loss of interest to the tune of ₹ 13.52 lakh and extending of undue benefits to the suppliers.

(v) Non-implementation of system of monitoring of high value procurements

DPS instructed (March 2011) project authorities to constitute monitoring committees for proper contract management of high value procurements. During the period 2009-14, DPS and selected RPUs processed 825 high value POs i.e. POs valuing more than ₹ one crore. However, no monitoring committees were constituted in any of the selected units. DAE stated (March 2012) that online monitoring system for high value POs would come into vogue when computerisation was completed. The fact remained that system for monitoring of high value procurements was not established even as an interim measure pending computerisation.

2.1.2.3 Management of supplies and inventories

(1) Overview of audit recommendations and action proposed by DAE

In the CAG's Audit Report No. 13 of 2010-11, Audit reported on deficiencies in post-contract management relating to the installation and commissioning of equipment. Audit also reported on serious deficiencies in inventory management. Audit recommendations made in the report, action plan proposed by DAE and status thereof were as follows:

Audit Recommendations	Action proposed by DAE on recommendations	Status of implementation
Time schedules may be prescribed in the Stores Procedure for inspection of materials, replacement of defective/damaged items, rectification of defects etc. All the cases relating to delay/non-clearance of Stores Receiving Vouchers (SRVs) may be reviewed.	All cases related to delay/ non-clearance of SRVs will be reviewed. Time schedule for activities will be prescribed as recommended - one month.	Partial implementation.
Given the fact that installation /commissioning of a large number of machinery/equipment get delayed due to reasons like non-readiness of site etc., DAE may direct its indenting officers to lay down specific timeframes for installation/ commissioning of machinery/ equipment.	A circular will be issued in this regard emphasising the need for defining the time schedules for installation and commissioning of machineries/equipment right from the indenting stage. Timeframe by which proposed to be achieved – one month.	Insignificant progress.
Proper mechanism may be devised to monitor and ensure that the time schedules so prescribed are followed scrupulously by the different executing agencies.	Committees comprising of indenting officers/project authorities and DPS proposed to be set up for monitoring of execution of POs would be mandated with the additional responsibility of monitoring adherence to time schedules of various Stores activities. Timeframe by which proposed to be achieved – one month.	Insignificant progress.
Provisions may also be incorporated in the purchase orders/ contracts by making the suppliers responsible for defective/ short supplies etc., in order to safeguard the Government interests.	Suitable provision will be incorporated as recommended in the Performance Audit for making the suppliers responsible for defective/short supplies etc., in order to safeguard DAE's interest after taking approval from the Competent Authority. Timeframe by which proposed to be achieved – six months.	Partial implementation.

Audit Recommendations	Action proposed by DAE on recommendations	Status of implementation
Adequate safeguards against deficient performance by the suppliers may be provided in the procurement procedures.	Prevailing payment terms in the procedure will be subjected to detailed study and suitable modifications shall be contemplated to install adequate safeguards where firms are found wanting in performance. Timeframe by which proposed to be achieved – three months.	Partial implementation.
A mechanism may be put in place so that procurements are made only on the basis of assessed actual requirement.	The indenting officers/ project authorities will be advised to install a mechanism for realistic assessment of their annual requirements and raise indents accordingly. Timeframe by which proposed to be achieved –two months.	Partial implementation.
Annual review of all the stores units may be conducted to determine surplus items. Specific time schedules for recommending / declaring the items as surplus may be prescribed.	A provision for annual review of stores units will be incorporated in the Stores Procedure which will help in identifying the excess/overstocked items and also help in identifying unserviceable/ obsolete items. Time schedule for recommending / declaring the items as surplus will also be part of the annual review. Timeframe by which proposed to be achieved –six months.	Insignificant progress.
Proper coordination between stores and divisions may be ensured to facilitate an efficient stores management system.	The issue of coordination will be discussed with the Project Authorities and suitable action plan will be evolved for efficient stores management. Timeframe by which proposed to be achieved – six months.	Insignificant progress.

(2) Audit findings

Audit findings based on further examination of records at DPS and selected RPUs are discussed in the subsequent paragraphs.

(i) Compliance with Audit recommendation

Provisions such as liquidated damages, bank guarantees, security deposits, warranty, interest on advance payments for delay in supplies, performance bond, commitment of resources by contractors, etc. were incorporated under relevant chapters in the Purchase Manual of DAE.

(ii) Delay in clearance of received supplies

As per DAE/DPS prescribed time schedules (March 2011) for various stores activities, Stores Receiving Vouchers (SRVs) were to be cleared by the concerned units within a period of 28 days after receipt of supplies. During the period 2009-14, 85,284 SRVs were cleared in the selected stores units, out of which 20,516 SRVs i.e. 24 *per cent* were cleared with delays ranging from one to more than 36 months. This indicates that the time schedules prescribed for clearance of stores were not complied with.

Further, there were 483 cases in which supplies were received but SRVs were not cleared for periods ranging from one month to more than three years. Of the 483 cases, 134 SRVs were selected for detailed examination on random stratified sampling basis. Out of 134 cases, Audit observed that non-clearance of 67 SRVs (50 *per cent* cases) was due to non-installation/non-commissioning of equipment. Of the 67 cases, equipment in 18 cases were not installed as of September 2015/installed after prolonged delays due to defective/short supplies, which resulted in blocking of funds.

Similarly, in eight instances, non-readiness of site was the major reason for non-installation/ delay in installation of the equipment. DAE had instructed (March 2011) the Stores and Equipment committees/Special Purchases committees to verify the readiness of site before supply of machinery/equipment from indenting officers. Audit observed that no such verification of status of site preparation was on record.

Other reasons for non-installation of equipment included non-completion of certain functional tests, delay by suppliers, etc.

(iii) Lack of monitoring mechanism

In order to monitor and ensure adherences to time schedules of various stores activities, DAE, in response to Audit recommendation, proposed that committees constituted for monitoring of execution of POs would be mandated with additional responsibility of monitoring of stores activities. Audit observed that only IRPU had constituted (2009) a Planning and Coordination Cell for monitoring time schedules prescribed in purchase orders. There was no record to indicate that such committees were constituted. In the absence of oversight mechanism, there was no assurance that time schedules were monitored.

(iv) Assessment of requirements of stores items

DAE instructed (March 2011) project authorities to have a mechanism for realistic assessment of their actual requirement and raise indent accordingly. Analysis of stock cards on parameters of turn-over rate, utilisation and frequency of replenishment revealed that there were 212[5] stock cards valuing ₹ 10.33 crore, in

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[5] In BARC, IRPU and HRPU.

which listed inventories were idle for periods of two years to 20 years or even more. This was an area of improvement, as in CAG's Audit Report No. 13 of 2010-11,278 cards valuing ₹ 32.22 crore were reported as idle.

However, when these cards were further categorised in terms of their utilisation percentage, Audit observed that in 201 stock cards, valued at ₹ 9.43 crore, utilisation was below 50 *per cent* of their stocks. Audit further observed that in respect of items worth ₹ 3.65 crore pertaining to 59 cases, in spite of availability of sufficient stock and only meagre utilisation, DAE engaged in additional procurements, resulting in overstocking of inventory. Idling of inventory for prolonged periods, incomplete utilisation and additional procurements of slow moving inventories resulted in piling up of inventories and blocking of funds.

(v) Annual review of stores

As per Clause 7.3.1.1 of DAE Stores Procedure, the stores unit shall conduct annual review of store items group-wise to determine surpluses and obsolete items and suitable action for their further utilisation or disposal may be taken. DAE instructed (September 2011) stores offices to prepare a list of slow-moving items and put up to the authorities concerned for recommending/declaring them surplus. However, it was observed that time schedules for recommending/ declaring the items as surplus were yet to be finalised as of June 2015. Of the nine stores units[6] examined in audit, it was observed that annual review of all stores under only Modular Lab Zonal Stores, BARC, was being done. As a result, surplus/obsolete stores could be identified only in respect of the stores for which annual review was conducted. As all groups were not covered for annual review, the possibility of appearance of additional surpluses could not be ruled out.

Audit further noticed that out of 45,083 items identified as surplus, there were 723 items in which decisions were pending with plant authorities or users concerned for declaring these items as surplus. Delay in declaration of items as surplus causes delays in subsequent actions for further utilisation of such items within their useful life.

Further, as per Clause 8.2.1 of DAE Stores Procedure, stock verification of Capital items and Furniture and Fixtures was to be conducted once in three years and discrepancies observed reconciled by the division concerned. Audit observed that out of 11,787 cases of discrepancies detected in physical verification during July 2012 to March 2014, 10,934 cases remained to be reconciled. These discrepancies

[6] Advanced Fuel Fabrication Facility (A3F), Power Reactor Fuel Reprocessing Plant (PREFRE), Waste Management Zonal stores, BARC, Mumbai (WMZ-B), Waste Management Zonal stores Tarapur(WMZ-T), Reactor Engineering Zonal stores (RED), Fuel Reprocessing Zonal stores (FRZ), Modular Lab Zonal Stores (MLZ), Reactor Control Division (RCND) and Madras Regional Purchase Unit (MRPU) stores.

remained unsettled for a period ranging from one to three years. Non-settlement of discrepancies delays further course of action in respect of these items.

2.1.2.4 Computerisation of Purchase and Stores functions

(1) Overview of audit recommendations and action proposed by DAE

DAE granted (October 1998) approval to DPS for implementing a computerised system of material management. In the CAG's Audit Report No. 13 of 2010-11, Audit highlighted deficiencies in implementation of the computerisation of purchase and stores functions. Audit recommendations made in the report, action plan proposed by DAE and status thereof were as follows:

<table>
<tr><th>Audit Recommendations</th><th>Action proposed by DAE on recommendations</th><th>Status of implementation</th></tr>
<tr><td>In view of magnitude of procurement activities involved in DAE, clear guidelines and instructions pertaining to computerisation may be formulated.</td><td rowspan="5">Action has been initiated for implementation of e-tendering system. It is planned to implement this in the beginning at MRPU and then in sequence at IRPU, HRPU, DPS followed by all other units of DPS. A contract has already been awarded for this purpose and sample files are under process by e-tendering solution. Regular processing of non-sensitive indents by using e-tendering solution will commence from June, 2010 at MRPU. The services of e-procurement solution will be extended in phased manner to other units with a gap of three months.

Actions have also been initiated to implement the workflow automation system at IGCAR and BARC in which Stores Management Information System will also cover the Stores and Purchase activities. An order has already been awarded for this work at IGCAR and is expected to be made available to users in a period of six months. Similarly, a tender has been floated for implementing this system at BARC. The workflow automation system will be implemented at other units of DAE in a progressive manner.

Centralisation of computerisation across DAE units needs an elaborate study by a team of experts considering the aspects of sensitivity and security of data. This aspect will be discussed at DAE level to evolve strategy for moving ahead in this direction.</td><td>Insignificant progress.</td></tr>
<tr><td>On-line connectivity may be provided across all DAE units to maintain uniformity among all purchase and stores units. All purchase and stores unit need to be integrated to achieve better control between purchase and stores activities.</td><td>No progress.</td></tr>
<tr><td>Dedicated task force for computerisation along with technical support at unit levels may be created for ensuring updating, troubleshooting and security of data.</td><td>Insignificant progress.</td></tr>
<tr><td>Inbuilt online checks and controls may be introduced to ensure accuracy and security of database.</td><td>Insignificant progress.</td></tr>
<tr><td>Manual intervention in transmission of an indent from the concerned indenting division to DPS may be eliminated to ensure accuracy and timeliness of processing of requirements.</td><td>Insignificant progress.</td></tr>
<tr><td>A centralised database of various common items, their specifications, prevailing costs, sources of supply should be maintained and be available online to all users for accurate</td><td>A centralised database of various common user items as recommended in the Performance Audit will be created. For this purpose, a massive codification exercise has already been undertaken by DPS whereby assistance of an outside</td><td>Insignificant progress.</td></tr>
</table>

Audit Recommendations	Action proposed by DAE on recommendations	Status of implementation
projection of requirements and realistic estimation of cost.	professional agency is being contemplated to be taken for cataloguing items numbering in the range of 75,000 to 1,00,000 in BARC alone. Once the codification exercise has been completed successfully, harmonisation efforts shall be initiated for allotting the common item code numbers for the same/similar items being procured by units other than BARC. Timeframe by which proposed to be achieved – one to two years	
Regular updating and posting of information on surplus items may be done in a way that the indenters are able to view them before raising the requirements.	Information Technology shall be leveraged to achieve the objective of regular updating and posting of information of surplus items. Timeframe by which proposed to be achieved – six months.	Full implementation.

(2) Audit findings

Audit findings based on further examination of records at DPS and selected RPUs are discussed in the subsequent paragraphs.

(i) Absence of clear guidelines for computerisation

Audit observed that though DAE initiated (March 2012) a new e-tendering system and work flow automation system, documentation for requirements of these systems was not on record/incomplete and iterative in nature. In the absence of system specification documents, Audit could not obtain an assurance on the methodology adopted by DAE to finalise its requirements and expectations from the proposed materials management applications. A case study on inadequate detailing of requirements in BARC is discussed in Box 2.

Box 2: Delay in delivery of Integrated Information System and Material Management System

BARC raised (November 2009) an indent on urgent requirement basis for development, testing and deployment of Accounts and Administration Integrated Information System and Material Management System for working of Administrations, Accounts, Purchase and Stores activities at an estimated cost of ₹ 3.6 crore. After evaluation of bids, DPS placed (February 2011) a PO on CMC limited at a total cost of ₹ 4.04 crore with scheduled date of delivery in January 2012. The Systems Requirements Specifications (SRS) document was finalised in December 2011. However, even after its finalisation, gaps due to insufficient detailing of requirements and frequent changes in the functionality remained. Due to this, delivery period was extended till 30 June 2015. However, this integrated system was not delivered as of August 2015 i.e. even after lapse of more than five years from the date of placing of indent. Payment of ₹ 2.25 crore was released to the firm between May 2012 and May 2013.

DPS stated (August 2015) that delay was due to incorporating procedural aspects, rules and regulations, etc. in the system. In addition, running trials and further modification based on inputs from users were incorporated. The fact remained that BARC could not determine its requirements even though the SRS document was approved as far back as December 2011. As a result, the Accounts and Administration Integrated Information System and Material Management System for working of Administrations, Accounts, Purchase and Stores activities was badly delayed.

(ii) Non-implementation of work flow automation system

In its Action Taken Note to the Performance Audit Report, DAE stated (March 2012) that a self-contained computerisation of materials management activities was planned initially in two units viz. MRPU and IRPU to be extended subsequently to the other units. As of May 2015, e-tendering process was implemented in all the units. However, work flow automation was not completed at any of the units. In the absence of work flow automation, several controls in purchase and stores functions could not be established, as discussed in the following paragraphs.

a) Non-consolidation of procurement requirements

As mentioned in paras 2.1.2.1 (1) and (2)(i), DAE proposed that all project units would be approached for preparation of Annual Procurement Plans, to enable consolidation of procurement requirements. However, Annual Procurement Plans could not be prepared at any unit of DAE due to non-implementation of work flow automation software. As a result, procurement requirements could not be consolidated and planned in advance.

b) Absence of centralised database of common items

In response to Audit recommendation on creation of a centralised database for common items, DAE stated (2009) that a codification exercise to catalogue various items had been undertaken. Codification of items was to be incorporated in the software for work flow automation process. DPS placed (November 2012) a work order on a firm for development, testing and installation of codification of inventories at the total cost of ₹ 37.13 lakh, with the objective of creating a unique code for items having same specifications, make and model in all the existing stores of DPS by December 2013. It was however observed that the system was only partially installed. Payment of ₹ 18.42 lakh was released to the vendor as of June 2015.

However, as of August 2015, the software for work flow automation process, which was expected to cover the codification module, was still under development at DPS and its units. Thus, an online centralised database of various common items, their specification, prevailing costs, sources of supply etc. remained to be prepared.

c) Non evolution of system for coordination between stores and user divisions for utilisation of surplus items

Information on surplus items was being posted on the internal website of BARC. The work flow automation system was expected to address the issue of proper coordination between stores and plant authorities for mobilisation and utilisation of surplus items. However, work flow automation system was still not completed as of August 2015, in the absence of which extent of coordination envisaged between stores and plant authorities and actual achievement thereof could not be ascertained.

(iii) Non-integration of materials management functions

The different purchase units of DAE initiated various actions for computerisation of purchase and stores. However, the status of integration of procurement and inventory management functions was as described in Table 12.

Table 12: Status of computerisation of purchase and stores functions

Name of unit	Status of computerisation
DPS	E-tendering was implemented in July 2014. DPS initiated (May 2015) development of a comprehensive e-procurement solution, however, DAE's approval for the same was still awaited. Work flow automation system was not implemented.
MRPU	E-tendering was implemented in July 2014. As of January 2015, both purchase and stores activities were computerised. However, fully automated materials management system from indenting to destruction of records was not achieved. Purchase management system was computerised in client server mode with Oracle database. Stores management system was in web based mode using a different database, due to which their integration could not be achieved. As of January 2015, efforts were on to replace the purchase management system with web based system to enable its integration with the stores system. Work flow automation system was not implemented.
HRPU	E-tendering was implemented in July 2014. Computerisation of purchase and stores functions was developed in a phased manner. As of February 2015, stores and purchase functions were computerised upto payment stage. Complete computerisation upto record destruction stage was not achieved. Work flow automation system was not implemented.
IRPU	E-tendering was introduced in July 2014 and implemented by May 2015. Purchase and Stores functions were also computerised and integrated. Work flow automation system was not implemented.

Thus, complete integration of database among the Purchase, Stores and Account functions with the existing levels of computerisation was not in place in any of the units, except in IRPU. It was also observed that integration of databases among Purchase, Stores and Accounts functions in DAE was still at discussion stages as of April 2015. DAE was unable to define a date for achieving the integration.

Thus, as of August 2015, DAE could not achieve an integrated system of materials management by bringing about on line connectivity between purchase and stores functions within a unit and among various materials management units.

(iv) Incomplete utilisation of e-tendering system

During the period 2009-14, DPS and selected RPUs finalised and issued 1,34,038 tenders, out of which 27,734 tenders were issued on line (e-tendering) mode, which was 21 *per cent* of the total tenders finalised. Thus, even after existence of e-tendering system in the purchase units, level of utilisation of the same was only 21 *per cent*.

DPS stated (October 2015) that the reason for low utilisation of e-tender was due to its requirements being strategic in nature, existing e-tender solutions not being mature enough to handle two-part tender system, import procurement not being processed efficiently for poor response from foreign bidders and enrolment on e-portal being mandatory for participating in e-tender by the bidder. The fact remained that e-tendering system could not be utilised in accordance with the requirements of DAE.

2.1.3 Summary of compliance to DAE's proposed action plan on Audit recommendations

Audit's examination of the extent of compliance to DAE's proposed action plan on the Audit recommendations revealed that of the 32 recommendations made-

- **a)** There was full implementation of action plan for six Audit recommendations;
- **b)** Partial implementation was made in action plan proposed for seven Audit recommendations;
- **c)** Progress was insignificant in action taken by DAE on 16 Audit recommendations; and
- **d)** No progress was made in respect of three Audit recommendations.

2.1.4 Conclusion

The follow up audit showed that full implementation of action proposed was made only in six out of 32 recommendations. While partial implementation was seen in action proposed for seven recommendations, the progress was insignificant against 16 recommendations. No progress was made against actions stated for three recommendations.

Audit noted that planning for procurements remained inefficient. Annual Procurement Plans were not prepared in any of the units. Indenters continued to raise indents without assessing realistic delivery schedules. The purchase units failed to adhere to time schedules prescribed for various activities. No effective oversight mechanism was established to ensure timeliness in procurements and check delays.

Audit further noted cases of violation of purchase procedures. Contract management was deficient, as substantial amounts of advances were paid to suppliers that were lying unadjusted. There were instances of non-clearance/delayed clearance of Stores Receiving Vouchers due to delays in installation of equipment.

Progress in respect of computerisation of materials management functions remained insignificant. Work flow automation system was not implemented and there was no integration of stores, purchase and accounts functions within a unit or among different Purchase units of DAE. Thus, on the whole, action taken by DAE against its own stated plan was largely inadequate.

The matter was referred to DAE in January 2016; its reply was awaited as of February 2016.

2.2 Non-installation of Steam Turbine Generator

Due to inefficient contract management by Heavy Water Board and Directorate of Purchase and Stores, Mumbai, a Steam Turbine Generator could not be installed even after lapse of more than 10 years. This resulted in blocking of ₹ 2.06 crore incurred in its procurement besides loss of opportunity to generate electricity estimated at ₹ 40 crore.

Heavy Water Board, Mumbai (HWB) raised (April 2003) an indent for design, manufacture and commissioning of a Steam Turbine Generator set at Heavy Water Plant, Kota[7] (HWP) at an estimated cost of ₹ 4.45 crore. The procurement was initiated under the project 'Incorporation of Steam Turbine Generator at HWP for generation of two Megawatt (MW) of electricity from available steam'. The project was conceived as an energy saving scheme to generate electricity worth ₹ four to five crore per year. The project was sanctioned (August 2004) by the Department of Atomic Energy (DAE) at cost of ₹ 4.45 crore, to be completed by December 2005.

After tendering process, Directorate of Purchase and Stores, Mumbai[8] (DPS) placed (February 2005) a purchase order on Kessels Engineering Works at a cost of ₹ 3.99 crore with a stipulated delivery period of October 2005. Payment was to be made in instalments[9] in accordance with the progress of work. As per the purchase order, if the contractor was unable to deliver goods within the delivery schedule stipulated, the contractor would have to obtain extension of delivery schedule, failing which

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[7] A plant under HWB

[8] The centralised procurement agency of DAE.

[9] 10 *per cent* on acceptance of purchase order; 10 *per cent* on finalisation and approval of fabrication drawings; five *per cent* on finalisation and approval of General Arrangement drawings; 60 *per cent* on pro rata basis in maximum of eight instalments; 15 *per cent* along with taxes within 30 days after satisfactory erection and commissioning of equipment and its final acceptance.

DPS would not receive the goods supplied and would return the supplier's bills without any obligation on its part.

The supplier took considerable time to complete the engineering works and thereafter delivered the major equipment in piece meal manner starting from December 2006. While shifting (September 2008) the turbine for erection, it fell down due to failure of the crane carrying the turbine and suffered damage in the process. The supplier did not accept responsibility for the damage but agreed to repair the turbine. Accordingly, the supplier took back (April 2009) the turbine and returned (June 2010) the same to HWP after repair.

However, even after repair of the turbine, the supplier failed to complete the erection and commissioning and left (April 2012) the work incomplete leaving behind the work of supply of piping and valves, piping for steam, condensate, lubrication system, erection of moisture separating vessel, cabling and interconnection of the panels. Ultimately, HWB submitted (April 2014) detailed specifications and cost estimates to DPS for floating a public tender for completion of balance jobs and requested it to proceed with cancellation of purchase order and initiate risk purchase action to the extent of work not completed by the supplier. HWB further communicated (March 2015) to DPS to close the contract formally to facilitate the initiation of risk purchase action. DPS sought (October 2015) legal advice from DAE on cancellation of order at the risk and cost of the supplier. As of December 2015 the case was pending with DAE and steam turbine was not commissioned.

In line with progress of work, an amount of ₹ 2.88 crore was paid to the supplier between September 2005 and August 2008. Due to abandonment of work by supplier, DPS encashed bank guarantee worth ₹ 82 lakh obtained from the supplier. Thus, net amount paid to the supplier was ₹ 2.06 crore.

Audit observed that there was no clause for levy of liquidated damages in the purchase order in the event of delay in supply of equipment. Consequently, though the supplier delayed in supply of equipment and erection work, DPS could not levy liquidated damages. Instead, DPS extended the delivery period six times from September 2006 to August 2010. Further, DPS took two years to initiate the process of risk purchase after the supplier abandoned the work. Even after this, DAE, DPS and HWB continued to correspond with each other for more than one year, for seeking consent and advice for cancelling the purchase order and for taking alternative action for completing the project. As a result, even after more than three years of abandonment of work by supplier, the purchase order was yet to be cancelled and the steam turbine remained uninstalled. Considering the expected saving of ₹ four to five crore per year from the project, HWB also lost the opportunity to generate electricity estimated to be worth ₹ 40 crore (at the rate of ₹ four crore for 10 years).

Thus, due to inefficient contract management by HWB/DPS, the steam turbine expected to be installed by October 2005 for generation of electricity at Heavy Water Plant, Kota was not installed even after lapse of more than 10 years. This resulted in blocking of Government funds to the tune of ₹ 2.06 crore, besides non-completion of the project for generation of electricity from steam.

The matter was referred to DAE in January 2016; its reply was awaited as of February 2016.

CHAPTER – III

Department of Bio-Technology

3.1 Irregular administrative and entitlements operations

Institute for Stem Cell Biology and Regenerative Medicine, Bengaluru did not follow Government rules and regulations in its administration and entitlements matters. This resulted in irregularities such as payment of higher entitlements of ₹ 2.86 crore to its staff, recruitment of in-eligible candidates, recruitment of staff without sanction for creation of posts, etc.

The Institute for Stem Cell Biology and Regenerative Medicine, Bengaluru (INSTEM) is an autonomous body under the administrative control of Department of Bio-Technology (DBT). The primary objective of the institute is to create an organisation structure that promotes growth of expertise in stem cell research, fosters interactions among basic scientists and clinicians in ways that support innovative research to address barriers to progress in the therapeutic use of human stem cells.

INSTEM was approved (August 2008) on project mode for a period four years from 2008-09 to 2011-12 for a total cost of ₹ 203.10 crore. The institute continued to function in project mode and its duration was extended up to March 2016.

Being an autonomous body under Government of India and receiving substantial funding from public exchequer, INSTEM is required to comply with Government rules and regulations in its administrative functioning.

Audit examined the extent of compliance with Government rules and regulations in the administrative and entitlement functions of INSTEM. The audit observations are discussed below.

3.1.1 Non framing of Recruitment Rules

According to instructions (December 2010) of Department of Personnel and Training (DoPT), 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. Recruitment Rules should be framed for all posts which are likely to last for one year or more. The Recruitment Rules were to stipulate the selection criteria for each position, requirements of educational qualification, experience and reservation roster, age limit, composition of the selection committee, manner of selection, details of competent authorities to approve various stages of recruitments, etc.

Audit observed that Recruitment Rules were not framed for INSTEM. Further, INSTEM carried out recruitment of 11 positions and nine temporary positions. Recruitment of regular staff in the absence of Recruitment Rules was irregular. Further, this led to irregularities in the recruitment process adopted by INSTEM which are discussed in the succeeding paragraphs.

INSTEM accepted (February 2016) the Audit observation and stated that the draft Recruitment Rules were submitted to DBT for approval.

The fact remained that the institute recruited regular staff without having approved Recruitment Rules.

3.1.2 Recruitment of staff without sanction for posts

According to instructions (September 1998) of Ministry of Finance (MoF), Department of Expenditure (DoE) Governing bodies of autonomous bodies may exercise powers up to the limit of powers enjoyed by the administrative Ministry/ Department except for creation of posts. Therefore, for creation of posts, approval of MoF and DOPT was required to be obtained. Further, according to Rule 22 of General Financial Rules, 2005 (GFR), no authority may incur expenditure or enter into any liability involving expenditure from Government funds unless the same has been sanctioned by the competent authority. Audit observed that INSTEM appointed staff against posts without sanction, as discussed below:

i) In Faculty cadre, though eight posts were approved by DBT, approval of MoF and DoPT was not obtained. Against these posts, five persons were in position. In addition to the above posts, proposals for filling nine other academic positions and 11 administrative positions were pending for the approval of DBT, MoF and DoPT. Audit scrutiny however revealed that INSTEM operated nine temporary posts against these posts.

While accepting the observation, INSTEM stated (February 2016) that employment through temporary mode was made instead of a structured Recruitment Rules route to obtain desirable persons.

The reply is not acceptable, as creation and operation of regular and temporary posts on regular basis required approval of DBT, DoPT and MoF.

ii) Centre for Stem Cell Research (CSCR) was functioning at Christian Medical College, Vellore (CMC) in project mode (from the year 2005) with funding from DBT. The Union Cabinet approved (2008) integration of this unit with INSTEM on the expiry of its project. Accordingly, CSCR was integrated with INSTEM with effect from 1 July 2011. Audit scrutiny revealed that even after integration of CSCR with INSTEM, the staff of CSCR continued to work for both CMC and CSCR/INSTEM. The work allocation of such staff was not specified separately.

CSCR/ INSTEM incurred[10] ₹ 1.54 crore towards emoluments of such staff during the period from 2011-12 to 2013-14 (July 2011 to March 2014). Payment of lump sum salary and entitlements without identifying and specifying the quantum of work was not in order.

While accepting the observation, INSTEM stated (December 2014) that the matter would be taken up with DBT.

3.1.3 Recruitment of ineligible candidates

Audit scrutiny of recruitment records of the regular staff in INSTEM showed that the recruitment process followed by the institute for the recruitment of its regular staff was arbitrary, subjective and did not follow the due process prescribed for the recruitment in Central Government, as discussed below:

i) INSTEM recruited two persons working in INSTEM in temporary capacity to the posts of Administrative Assistant and Assistant Accounts Officer, by relaxing eligibility criterion of age limit during the recruitment process.

ii) INSTEM recruited two Assistant Investigators in the Grade Pay of ₹ 8,700. Audit observed that the recruitment was without following any due process of recruitments such as advertisement in newspaper duly prescribing selection criteria (such as age, qualification and experience), manner of selection, etc. The two officials directly submitted their curriculum vitae and were appointed for a period of five years. Recruitment of persons without following recruitment process prescribed by DoPT was irregular.

iii) According to instructions on employment of citizens of foreign origin in India, the permission of Ministry of Home Affairs (MHA) is required to be taken. Audit scrutiny however showed that approval of MHA was not on record in respect of recruitment of two persons who were not Indian citizens.

INSTEM stated (February 2016) that relaxation of age limit was part of a flexible type of employment policy to appoint persons initially on temporary basis and subsequently regular continuous appointment was followed to fill the positions with desirable persons. INSTEM further stated that a method of open advertisement for the post of faculty was not resorted to and recruitment was done as and when need arose. With regard to appointment of foreign citizens, INSTEM stated that in one case the appointment was made by DBT and in the second case approval of MHA was being sought.

[10] ₹ 33.05 lakh during the year 2011-12, ₹ 37.45 lakh during 2012-13 and ₹ 83.14 lakh during the year 2013-14.

Reply indicates that recruitment of the persons was made in an arbitrary manner and recruitment process was not followed.

3.1.4 Grant of irregular and higher entitlements to staff

Rule 209 (6)(iv)(a) of GFR stipulates that all grantee Institutions or organisations which receive more than 50 *per cent* of their recurring expenditure in the form of grants-in-aid, should ordinarily formulate terms and conditions of service of their employees which are, by and large, not higher than those applicable to similar categories of employees in Central Government. Audit scrutiny revealed that INSTEM irregularly granted higher entitlements to its staff as detailed below:

3.1.4.1 Inadmissible Travelling Allowance on transfer

According to Government Rules[11] Travelling Allowance (TA) on transfer is admissible when a Government employee is transferred from one place to another place. Similarly Transfer TA is also admissible[12], to permanent Central and State Government servants appointed to posts under the Central Government either on the results of competitive examination or after an interview for appointment to such posts.

Audit observed that during the period from 2009-14, INSTEM paid transfer TA of ₹ 34.64 lakh including travelling cost and cost of transportation of personal effects of eight officials who were working abroad, on their direct recruitment to INSTEM on temporary basis. As the staff were appointed on temporary basis and not transferred from any other previous headquarters, the transfer TA was not admissible. INSTEM did not recover this in-admissible amount.

While admitting that payment of relocation charges was not approved by Government, INSTEM stated (February 2016) that relocation charges were paid to have flexibility and attract quality manpower to the institute.

Reply of INSTEM is not acceptable as payment of relocation charges was against Government rules and regulations.

3.1.4.2 Excess payment of rent accommodation charges

According to the provisions contained in Delegation of Financial Powers Rules, where private accommodation is hired wholly for residential purposes, rent payable to the land lord by Government for residence or for the residential portion shall not exceed an amount equivalent to the total rent recoverable under FR 45A-IV (b) from an officer of the class for whom it is intended and the House Rent Allowance (HRA) which that officer would normally be entitled to. Thus, lease accommodation charges payable should be within the HRA and Licence Fee entitlement of the official.

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[11] SR 2 (18) of Fundamental Rules and Service Regulations Part II.

[12] GOI decision (1) under Rule SR 114

Scrutiny revealed that during the period 2009-14, INSTEM paid rent in excess of HRA admissible towards accommodation leased to 11 staff (permanent as well as temporary) to the extent of ₹ 37 lakh. This was in violation of Delegation of Financial Powers Rules. INSTEM did not recover the excess payment from the concerned officials.

INSTEM stated (September 2014 and December 2014) that in the absence of housing facility of its own for the employees, Institute put in place a policy of hiring private accommodation for its employees.

The reply is not acceptable as the policy was against Government rules.

3.1.4.3 Irregular expenditure of ₹ 1.08 crore towards foreign tour

Audit observed that scientists of the institute were permitted on foreign tour for seminars, workshops, presentation of papers etc. for 438 days during the period 2009-14. These foreign tours were approved by the Dean of the Institute instead of the Secretary of DBT/ Minister-in-charge in violation of the instructions of Government. INSTEM incurred irregular expenditure of ₹ 1.08 crore on foreign travels from the core grant released by DBT.

INSTEM stated (September 2014/ December 2014) that tours were undertaken to keep scientists abreast of science and interactions were of great importance to science research.

The fact remained that the foreign tours were permitted in violation of Government instructions and irregular expenditure to the tune of ₹ 1.08 crore was incurred.

3.1.5 Irregular expenditure on employment of consultants

Rules 163 to 177 of GFR prescribe the procedure to be followed for appointment of consultants. DBT instructed (June 2010) its autonomous bodies to follow these provisions as well as Manual of Policies and Procedure of Employment of Consultants.

The recruitments were carried out without following transparent process of recruitment enumerated in GFR and MoF guidelines as detailed below:

i) In terms of GFR Rule 163 and 165, external professionals, consultancy firms or consultants may be hired for a specific job and according to Central Vigilance Commission (CVC) guidelines, the role of consultants should be intellectual, advisory and recommendatory and final authority and responsibility should be within the departmental officers only (not for day to day routine work which is available in Government) and in situations requiring high quality services (professionals) for which the concerned Ministry/ Department does not have requisite expertise.

ii) Further according to Rule 168 and 169 of GFR, selection of consultants shall be carried out by advertising the requirement in at least one national newspaper of repute. Selection shall be based on their qualifications of the assignment. They shall be selected through comparison of qualifications of at least three candidates among those who have expressed interest in the assignment. According to MoF guidelines, selection will be carried out by a Consultancy Evaluation Committee (CEC) which will award marks for the educational qualifications and experience and select the most suitable candidate for the assignment.

Audit scrutiny, however, revealed that INSTEM recruited three non- professionals as consultants for regular positions in Administration, Finance/ Accounts and Project without advertisement and were not selected through comparison of qualifications with candidates who had expressed interest. The selection was not carried out by the CEC but they were directly offered appointment and recruited as consultants and these persons were engaged for routine official work such as general administration, cheque signing for payments, accounts, foreigner registration activities, financial management etc.

Further, the consultants were not only paid consolidated salary but were also paid HRA, Transport Allowance, Medical Reimbursement, Leased Accommodation, Ex-gratia payment, Performance Related Incentives and reimbursement of Leave Travel Concession (LTC) similar to the regular employees in Government.

INSTEM incurred an expenditure of ₹ 1.06 crore towards emoluments of these consultants during the period from November 2009 to October 2014. Of this, amount of ₹ 13.58 lakh was towards payment of allowances as mentioned above.

Thus, employment of non-professionals as consultants for regular work in Administration, Finance/ Accounts and Project was against the provisions of GFR, MoF and CVC guidelines as explained above.

While admitting the fact, INSTEM stated (February 2016) that appointment of consultants was made on need basis and persons were recruited through reference/ nomination.

The fact remained that the consultants were hired against the provisions of applicable rules and instructions.

3.1.6 Conclusion

Institute for Stem Cell Biology and Regenerative Medicine (INSTEM) did not institute a comprehensive and effective administrative mechanism in the recruitment of staff and payment of their entitlements. INSTEM carried out recruitments against regular posts without having approved recruitment rules in place. INSTEM further recruited staff without obtaining sanction for creation of posts. Audit also observed issues such as recruitment of in-eligible candidates, irregular expenditure of ₹ 2.86 crore on payment of higher entitlement to its staff in violation of Government rules and instructions and in hiring of three consultants.

The matter was referred to DBT in January 2016; its reply was awaited as of February 2016.

CHAPTER – IV

Department of Scientific and Industrial Research

4.1 Unfruitful expenditure on procurement of BSL-3 facility

Centre for Cellular and Molecular Biology, Hyderabad procured a Bio-Safety Level-3 facility by making 100 *per cent* advance payment without ensuring proper installation of the same. There were problems in the facility that could not be rectified, which resulted in unfruitful expenditure of ₹ 1.90 crore incurred in its procurement.

Council of Scientific and Industrial Research (CSIR) Purchase Procedure 2002 stipulated that advance payments could be made to vendors on case to case basis against equivalent bank guarantee. The procedure further stated that in no case the advance payment could exceed 90 *per cent* of the price of the material procured.

Centre for Cellular and Molecular Biology, Hyderabad (CCMB), a constituent unit under CSIR, was entrusted with research work on three major diseases prevalent in India i.e. HIV, Tuberculosis and Hepatitis. Research on these infectious diseases required a Bio Safety Level-3[13] (BSL-3) facility.

CCMB placed a purchase order (August 2005) on M/s Techcomp Ltd., Hongkong (firm) through their Indian agent M/s Blue Star India Ltd., Mumbai on proprietary basis for supply, installation, commissioning, testing and validation of a pre-fabricated BSL-3 facility at a cost of US$ 3,90,000 against 100 *per cent* advance payment.

The facility was covered under warranty for a period of two years from the date of installation. As per terms and conditions of the purchase order, the firm was required to submit Performance Bank Guarantee (PBG) for 10 *per cent* of the order value valid for a period of 90 days after the warranty period. Accordingly, the firm submitted (August 2005) PBG for a value of ₹ 17.20 lakh with validity up to April 2008. The firm was also required to carry out performance tests during validation/commissioning of the facility. Further, according to international requirements for certification of BSL-3 facility, besides certification of such a facility upon installation, re-certification should be performed on annual basis as a minimum.

[13] A high containment facility to tackle bio safety issues in handling highly infectious disease agents.

The BSL-3 facility was received (December 2005) and 100 *per cent* payment amounting to ₹ 1.79 crore released through Letter of Credit. The facility was installed and tested (February 2006) by the firm, however, due to problems in the same, it was not validated by CCMB engineers. Thereafter the facility was put under trial by user scientists.

In the subsequent period of trial usage, the BSL-3 facility did not function properly due to repeated failures/breakdowns. Although the firm tried to carry out repairs, replacements and modifications, problems persisted and research work could not be pursued.

Prefabricated BSL-3 facility

Ultimately, CCMB demanded (January 2008) that the firm either replace the entire facility with a new one or refund the entire cost of the unit. The firm proposed to replace vital components and overhaul the facility to make it operational, which was accepted by CCMB. After the firm confirmed that the facility was completely functional, CCMB appointed an expert committee with external expert, senior Scientists and Engineers for its validation.

During the validation process (December 2008) the expert committee found that the facility was still not operational and could not be used for BSL-3 work. CCMB again demanded (December 2008) refund of entire cost of procurement of the facility with penal interest. CCMB continued to correspond with the firm; however the facility could not be revamped as of May 2010.

In the meantime, validity of the PBG submitted by the firm lapsed; however, the same was not renewed. CCMB also appointed five Scientists (2005 to 2007) who were to conduct research in the area of infectious diseases and would need the BSL-3 facility for the purpose. However, in the absence of BSL-3 facility, the scientists were unable to begin their research work. Consequently, CCMB initiated (April 2008) a proposal to set up an alternate new BSL-3 facility in one of its existing laboratories. CCMB established (January 2010) the new facility by incurring expenditure of ₹ 2.44 crore.

During Audit scrutiny, CCMB again informed (November 2014) that the pre-fabricated BSL-3 facility had been made functional and would be re-validated by an expert committee. However, the same was not done as of January 2016, indicating that the facility did not meet the standards required for validation. No log book for utilisation of the facility was maintained.

Audit observed that CCMB did not take adequate measures to safeguard the interest of Government while procuring the pre-fabricated BSL-3 facility. Even though establishment of the facility required stringent testing and validation processes, CCMB released (December 2005) 100 *per cent* payment to the firm in advance without obtaining equivalent amount of bank guarantee corresponding purchase price and ensuring that the facility was handed over after complete validation. This was in contravention of CSIR Purchase Procedure. Although PBG was obtained from the firm, CCMB neither took action to encash the PBG nor renew the same before the expiry of validity period.

CSIR stated (February 2016) that problems in the facility were rectified and it was fully functional from 2009 onwards. CSIR added that scientists carried out research work and published papers from inception of the facility. The reply is contradictory to factual position as problems in the facility persisted as of September 2010. Validation of the facility qualifying it for use in carrying out research of highly infectious diseases was not done as of January 2016. CCMB also could not produce a log book towards utilisation of the facility. Further, at the time of establishment of the second BSL-3 facility, CCMB had given the justification that scientists recruited for carrying out research work using the BSL-3 facility were idle in the absence of the same.

Release of entire payment as advance without ensuring proper functioning of the delivered facility and failure to renew the PBG obtained from the firm placed CCMB at a disadvantage as it was unable to insist with the firm to replace the defective facility or refund of its cost. This resulted in unfruitful expenditure of ₹ 1.90[14] crore as the BSL-3 facility could not be used for the intended purpose.

[14] ₹ 1.79 crore paid to the firm plus ₹ 11 lakh paid towards LC establishment charges, freight, customs duty, etc.

CHAPTER – V

Department of Space

5.1 Computerisation in administration, finance and related areas

Computerised Working in Administrative Areas package developed by Department of Space lacked proper inbuilt validation checks and application controls. Certain business rules were not incorporated. Data entry into the system was not regular. Consequently, information generated from the system was incomplete, inaccurate and inconsistent leading to poor data integrity and significant dependence on manual operations, which defeated the purpose of working in a computerised environment.

5.1.1 Introduction

The Department of Space (DOS) is responsible for promoting development of space science and technology and space applications for national development. The Indian space programme is executed through Indian Space Research Organisation (ISRO) which is the research and development wing of DOS, along with other centres/units of ISRO.

DOS undertook computerisation in its Administration, Finance and related areas by developing Computerised Working in Administrative Areas (COWAA). COWAA is an in-house package developed in order to introduce a rationalised and standard computerised working in areas of Administration, Accounts, Finance, Payroll, Purchase and Stores. Borland C++ Builder Version 6.0 was used for development of front end Graphic User Interface (GUI) Screens and Sybase was used as database server. The executables for front end screens were developed on Windows Operating System. COWAA was deployed across all centres of DOS in a phased manner from 2002 onwards. The database server maintained by each Centre was independent and not inter connected.

Development/maintenance of the packages was undertaken by Satish Dhawan Space Centre, Sriharikota (SDSC, SHAR), a unit of DOS. The in-house development teams consisted of Scientists, Engineers and Technical Staff in addition to hired manpower for coding.

The COWAA package resided on Stratus FT Server 4500 with Intel Xeon-4 core processor and Linux RHEL 5.2 as Backend. Processors Intel Pentium IV or above and Operating System Windows 95 and above were used for Client operations.

The audit objectives were to assess whether COWAA package incorporated all the business rules, generated reliable MIS reports, maintained data integrity and application controls.

Audit was conducted at SDSC during September to November 2015. The audit process included interactions with developers and users of the packages and scrutiny of data and records. User Manuals were referred wherever found necessary. Backup of the Data covering the period from introduction of COWAA (2002) to August 2015 was obtained and analysed by using IT Audit Tools.

5.1.2 Audit findings

COWAA Package contained modules such as Administration, Accounts, Payroll, Finance, Purchase and Stores. Audit observed absence of Application Controls, Validation Checks and non-incorporation of Business Rules in many processes which are detailed in subsequent paragraphs.

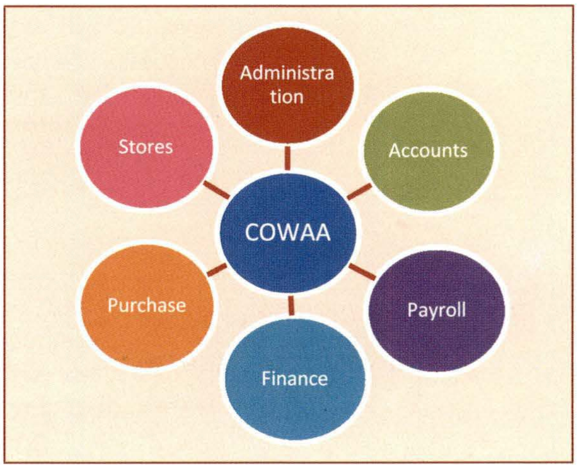


Chart 4: Modules of COWAA

5.1.2.1 Administration module

The Administration module was used to capture the general information and personnel information of each employee as well as for processing claims relating to Loans and Advances, Personal Claims, etc. Since all the basic information was captured here, this needed to be robust and it was to be ensured that the data was complete and accurate. The deficiencies noticed in four sub-functions of Administration module are elaborated below:

(1) Personnel/General Information System

The General Directory System containing basic information on an employee such as employee code, personal bio-data and service particulars was built through this system. The entries relating to bio-data were made at the time an employee joined ISRO/DOS. The employee code was generated automatically through COWAA. Audit observed incomplete data entry by DOS and deficiencies in validation checks in the system.

(a) Incomplete data entry and gaps in system

i) The Employee Table had 4,303 records. However, there were 799 gaps with 1,553 employee codes missing at various places giving room for manipulation. DOS stated (November 2015) that the gaps were due to migration of data from legacy system. Audit, however, observed gaps in the employee codes generated as late as 2012.

ii) The Bio-data table contained 4,257 records which contained blank fields. Even important entries of permanent nature such as "Character Verification" and "Personal Identification Marks" were not entered in respect of 1,510 records and 1,228 records respectively. Information such as "Spouse Employed", "Home Town", which had a bearing on the assessment of eligibility criteria for entertaining various claims, also remained blank in respect of 2,243 and 90 records respectively. DOS stated (November 2015) that data was migrated from legacy system and certain data which was not available at that juncture was left blank. DOS agreed to review the gaps for correction by administrative users.

iii) In five cases, date of joining Government service entered was later than date of joining ISRO.

iv) Out of 904 employees who joined service after 1 January 2006, the Joining Grade Pay was not entered in respect of 193 cases (21 *per cent*). DOS agreed (November 2015) to review the cases and carry out necessary corrections.

The above incomplete data entry and gaps in the system showed that due caution was not exercised while entering and verifying the data.

(b) *Absence of validation checks*

Audit noticed lack of validation checks in the following fields:

i) In the screen "Employee Initial Joining Details", there was no check to see whether the Earned Leave and Half Pay Leave at credit of the employee were commensurate with the date of Joining Central Services/ date of Joining ISRO.

ii) In the screen "Previous Employment Details – Data Entry", there was no check to see whether the "Service From" and "Service To" dates were prior to "Date of joining ISRO".

iii) In the screen "Previous Pension Details – Data Entry", there was no check to see whether the "Pension from Date" was acceptable with reference to the "Date of Birth", "Date of Joining Government Service", etc.

iv) While entering details in the "Employee Transfer In/Out Details" screen, the system allowed entering details for Transfer in to SDSC of a person who was currently working in SDSC. DOS agreed (November 2015) that the bug would be reviewed and corrected.

v) There was no check to ensure that the Hometown could be changed only once after initial declaration. Further, there was no history of changes made in the Hometown. Thus, there was no check to see if at the time of changing the Hometown, "Current Home Town" being entered was different from the Hometown previously declared.

vi) In the Employee "Study Leave – Data Entry" screen, there was no validation check to ensure that data of only eligible persons was accepted. For example, for an Administrative staff, Study Leave of five years for acquiring Ph.D. could be entered into the system.

vii) There was no validation check in the screen, "PIS – Change in Designations and Grades", to ensure that the new designation, pay and grade pay entered in the case of "Promotion" were not lower than the existing designation, pay and grade pay.

viii) In the event of change of designation, pay, etc., due to promotion, Modified Assured Career Progression (MACP), etc., the data in the screen "Employees – Change in Basic Pay & Increment Date" could be fed only after the details of change were entered in screen – "Personal Information System (PIS) – Change in Designations and Grades". However, there was no check to ensure that the same data under pay, grade pay, etc., was entered in both the screens.

ix) The date of superannuation of an employee was calculated based on date of birth of the employee entered into the system and the date of attaining the age of 60 and captured in the "TBAD_Biodata" table. The date of superannuation should be reflected as the last date of the month in which the official attained the age of 60. In the cases where date of birth fell on 1st of the month, the superannuation date should be last date of the previous month. However, this was not ensured under the system. The date of superannuation captured in 38 cases was incorrect. In one case the difference between date of birth and date of superannuation was 67 years. Similarly, the date of superannuation for the people born in February in a leap year was shown as 28 February instead of 29 February. DOS stated (November 2015) that the same would be reviewed.

x) While entering details in the screen "Employee Change in Service Status (Punishments – Data Entry)", under Service Status, though options such as "Exit from Service", "Non-duty", "Transfer", etc., were given, the option of "Service" was not given. DOS stated that options were provided based on user requirements. This showed that requirements were not projected correctly.

Thus, there were no checks to validate data entered into the system. As a result, users had to carry out necessary checks manually, process the papers/files and simultaneously feed the data at each stage in the relevant screens.

On being pointed out in audit, DOS agreed (November 2015) that the checks had to be carried out manually and that these would be reviewed for future operations.

(2) Children's Education Allowance

The purpose of this function was to process reimbursement claims of employees. The system captured Norms, Eligibility Details and Request Details. Audit observed that for the claims relating to earlier years, the system took into account the current rates instead of allowing the rates applicable for that period. This gave scope for processing claims relating to earlier periods at current rates.

DOS stated (November 2015) that the calculation was verified manually in case the claim related to old periods. This indicated that the business logic was not embedded into the system.

(3) Provident Fund System

This sub-function dealt with advances, withdrawals and conversion of advances into withdrawal from the Employees Provident Fund (PF) Account. It captured the PF details of the employees. Audit observed the following:

i) As per existing rules, there is no option to Government employees, except Technical and Scientific staff for converting the fund subscription from Contributory Provident Fund (CPF) to General Provident Fund (GPF). Audit observed that in the screen "Employee PF Details Data Entry", there was no check to see if the employee belonged to Technical/Scientific Staff. The screen also allowed change from GPF to CPF, which was incorrect.

ii) There were 28 staff members who moved from CPF to GPF during 2010-11, however, the database showed only two records. This showed that data was not entered into the system.

DOS stated (November 2015) that these should be checked manually and that the cases would be reviewed for future operations. The reply indicated that necessary checks were not built in.

(4) Nominations

This sub-function captured data related to Nominations made by the employees viz. type of Nominations, Nominee Details. The system was to generate reminders for non-submission of nominations or incomplete nominations. Audit observed the following programming errors:

i) COWAA only accepted first/alternate nominations where 100 *per cent* share was allocated to one nominee and did not accept those nominations where the share was divided among more than one nominee. In view of the deficiency, nominations received were not fed by the users. To this extent, the database remained incomplete.

ii) The report for "Reminder for DCRG nominations" showed 1,510 employees. However, as per data extracted by Audit, there were only 748 employees who were in service and had not filed their nominations. Analysis of the report showed that the report included names of persons who had retired/resigned/been transferred.DOS agreed (October 2015) that the bug had to be removed to generate the correct output.

5.1.2.2 Payroll module

The Payroll module was being used to draw the Pay and Allowances of employees. Audit observed the following deficiencies in three sub-functions of the module:

(1) Transport Allowance

According to rules, Transport Allowance is not payable to those employees who remained on leave for the entire calendar month. Audit observed five instances in which Transport Allowance was drawn even when the officials were on leave for entire calendar month(s) resulting in overpayment of ₹ 8,000. This indicated that there were no checks in the system to prevent the drawal of Transport Allowance for employees remaining on leave for an entire calendar month.

Further, in cases where leave was sanctioned after monthly salary was processed, the recovery of Transport Allowance paid was computed manually and entered in the recoveries screen. Audit observed that in all the above five cases, recovery was not effected. Therefore, even the manual process was not complied with.

(2) Interest bearing advances

The sub-function was used to handle interest bearing and non-interest bearing advances and generate broadsheets. Audit observed the following deficiencies:

i) COWAA did not calculate the interest on Long Term Advances. The interest was calculated manually and entered into the system.

ii) In the cases where remittances were made in one lump sum, the data was not automatically updated. Database showed 58 such cases of lump sum remittances where recovery of Principal/Interest was shown as stopped in between. This included 42 cases of retired employees where the advances were settled at the time of retirement but were reflected as unsettled.

iii) There was no provision to close the data on advances relating to employees who had been transferred out of the organisation. As a result, COWAA database continued to show such advances as outstanding thereby providing inaccurate position of outstanding advances.

iv) There was no check to ensure that long term advances for purchase of conveyance on second/subsequent occasion were accepted only after full repayment of first/earlier advance along with interest. In one case the database showed recovery of interest of earlier advance and recovery of Principal of subsequent advance proceeding simultaneously.

v) There were errors in broadsheets generated by the system. In one case broadsheet depicted opening balance of interest even when the recovery of Principal was continuing, which was incorrect as recovery of interest commences only after the Principal amount has been fully recovered. In contrast, there were two cases where recovery of Principal was completed but recovery of interest did not commence. In two more cases, recovery of interest was commenced after a lapse of more than two to three months from recovery of Principal amount.

DOS confirmed (November 2015) the audit observations and agreed to correct the business logic.

(3) Provident Fund

As per the provisions of GPF Rules, subscription can be enhanced twice and reduced once in a calendar year. However, COWAA did not restrict the number of times of increasing or decreasing of the subscription. This indicated inadequate input controls and validation checks. DOS replied (January 2016) that it was to be checked manually.

5.1.2.3 Accounts module

The Accounts Module of COWAA processes the generation of Personal Claims, Medical Expenses, Suppliers Bills, Miscellaneous Bills and has provision for drawal of cheques and cash. In addition, the compilation and consolidation of Monthly Accounts are run through this module. A review of this module showed that there was no provision for calculation of entitlements in respect of personal claims such as Travelling Allowance (TA) and Medical claims, etc. There was also no provision to calculate the penal interest applicable on delayed refunds. The claims were processed manually and COWAA was used only as a tool to generate bills/vouchers. Also, instances of weak Application Controls, non-incorporation of certain provisions and programming errors as elaborated below were noticed.

(1) Personal Claims

i) While processing grant of TA advances, COWAA captured only date of commencement of tour and did not capture the date of completion of tour. It also permitted drawal of advances for overlapping periods i.e. it permitted drawal of advance for a period prior to the date of completion of the earlier tour. COWAA also did not check for submission of TA adjustment bills within the prescribed time limit. DOS accepted (October 2015) the observation.

ii) In the cases where employees were transferred out of a particular centre/ retired from service, there was no provision to settle the advances pending against their name from the database. As a result, the COWAA database could not be updated even after receipt of the refund/recovery/settlement information from the borrowing office. DOS agreed (January 2016) that provision to this extent was not made.

iii) The data extracted from COWAA database showed 904 travel advance cases ranging from the period 2001 onwards as outstanding, although there were actually only 14 outstanding advances. Analysis revealed that though a separate screen was available (AC50S) for entering details of refund of unutilised travel advances, this was not used. Instead, users entered the refund particulars under 'Miscellaneous Receipts' screen. Consequently, refunds of advances were not linked with the position of outstanding advances. Similarly, recoveries/adjustments made through Pay Bills were also not linked with the advances. The position of outstanding advances was therefore rendered inaccurate. This showed lack of integrity of data.

DOS accepted (January 2016) the above observations.

(2) Medical Expenses

The claims relating to the payment and settlement of medical advance, settlement of medical reimbursement, settlement to hospitals/laboratories were processed through this function. The details of beneficiaries, Hospital/Laboratory, Doctor, etc. were accessed from administrative function. The amount to be paid was, however, computed manually. The review of the sub-module revealed the followings:

i) COWAA did not capture the nature of illness.

ii) There was no check to ascertain if the period of treatment for a particular beneficiary was overlapping with any previous claim. Thus, it did not check for duplicate claims.

iii) There was no check to ascertain if the claim pertaining to a particular Hospital/ Diagnostic Centre was during the period of recognition of the Hospital/ Diagnostic Centre.

iv) COWAA did not capture the date of submission of medical claim. Hence there was no check to ascertain if the claim was submitted and processed within the prescribed time limit.

v) There was no check for the period of consultation. As a result, the "To date" could be entered earlier than "From date".

vi) In the case of treatments taken at an outstation location, the option "Travel" in the "Medical Reimbursement Claims – AC64S" screen was available for claiming travelling allowance. Though the option should be invoked only in cases where treatment was taken outside, it was observed that the option was accepted by the system even for the cases where treatment was taken with local Authorised Medical Officer (AMO). The option "Travel" was invoked in 12,878 cases though the treatment was taken locally. Thus, the system lacked the validation check for eligibility of travelling allowance for treatment.

vii) There was no check to link the selected AMO with the Medicine Type. For example, for the option of "Ayurvedic doctor" as AMO the system allowed selection of "Allopathy" as Medicine Type.

viii) SDSC received claims from hospitals for the treatment extended to the employees (serving and retired) and the amount was paid directly to the hospital. In cases where employees availed benefits beyond their entitlement, the excess amount in the case of serving employees, was either recovered from the employee through Pay Bill or refunded by them. In the case of retired employees, the amount was refunded by them. The refund particulars were entered through the 'Miscellaneous receipts' screen. Audit observed that such refund/recoveries were not linked to the excess claims. Due to this, amounts that had already been adjusted continued to be shown as outstanding. The table containing claims of serving employees showed 7,324 cases as outstanding even though the recovery had been effected through pay bills in 7,112 cases.

DOS accepted (January 2016) the above observations.

(3) Supplier Bills/Miscellaneous Bills

The purpose of the Supplier Bills sub-function was to process and generate bills towards Supplier Advance Payments/Bill Settlement, Letter of Credit opening/ settlement, etc. The Miscellaneous Bill sub-function was used for handling miscellaneous payments and receipts which were not covered in other COWAA functions. Audit observed the following:

i) There was no check to ensure that the "Billed Amount" was not more than the "Purchase Order (PO) Amount", and it matched the quantum of goods received. In response, DOS stated (January 2016) that the inbuilt check was removed based on the user requirement to pay extra amount after verifying the claims. The action taken by DOS to suit user needs was fraught with risk of overpayments.

ii) The screen "AC04N – Party cheque preparation" was used for preparation of cheque for issue to Suppliers, other parties, etc. Payments to employees were processed through another screen 'Payment through Banks', in which case the account number of the employee was printed in the intimation letter, details reflected in the pay slips and database updated in the relevant table. Audit however observed that the screen for payments to suppliers also permitted processing of payments to employees. This was not correct, as in such cases, the employee database could not be updated after payment. DOS replied (January 2016) that some Centres asked for Party Cheque for employees to put in different banks for various payments. While acceding to the user request, DOS did not exercise caution to ensure that the database was uniformly updated.

iii) Although there was provision for entering details relating to payments made by Letter of Credit (LC) separately, the same was not used. Instead, the screen "AC82SN – Supplier Bills Settlement" was used by generating a note marked as "LC Payment". As a result, complete details of payments made through LC could not be generated through COWAA. DOS agreed (January 2016) that they were not using the screen.

iv) The Receipt Bills Screen "AC96S" was used for entering details relating to receipts. While operating this screen, the Accounts Clerk/Officer was unable to view the purpose for which the remittance was made though the same was available in the database and therefore, exercise a check. DOS justified (January 2016) that the screen layouts were decided based on the user inputs and modifications could be carried out based on future inputs.

(4) Cheques and Cash

This sub-function was used for processing and generation of bills for party/self cheque preparation, cash drawal, receipt collection, generation of cash book and cheque register. An analysis of the table containing the details of cheques issued revealed the following

i) In 25 cases the cheque amount was not entered. Out of these, in 5 cases, the cheque status[15] was shown as encashed. Permitting of generation of blank cheques and further allowing of updation of cheque status indicated lack of application control and is also fraught with the risk of misuse. DOS stated (January 2016) that these were dummy cheques that were not actually prepared. The reply is not acceptable since there was no provision to differentiate a dummy cheque and in such instances, date of encashment was also indicated.

[15] When the cheque was prepared it was represented by 0, on encashment by 1 and on cancellation by 2.

ii) In 1,160 cases the cheques were shown as "Cancelled" even though the field labelled "Encashed Date" contained information. This showed absence of validation check. DOS accepted (January 2016) the possibility of back end correction.

iii) In 140 cases, the cheque numbers were duplicate. DOS stated (January 2016) that this was due to back end corrections.

iv) There was no check on the date of issue of cheque. This gave scope for issue of cheques with ante date even after closing of the accounting year. DOS accepted (January 2016) the observation.

v) While the cheques were prepared for payment to employees/other parties, the purpose for which payment was made was not displayed and it was also not printed on the intimation letter. The same was done manually.

vi) In Government cheques, it is mandatory to mention the amount "Under ₹____". Cheques were issued by the centre without this figure as COWAA did not have the provision to fill the relevant figure. In response, DOS stated (January 2016) that the requirement was not projected by the Domain Committee. The reply is not acceptable as it was contradictory to Government procedures for issue of cheques.

vii) The field "Regtime" captured the date/time when the cheque details were first entered. This field was overwritten whenever the record was edited i.e. during registration of cheque by Officer, entering of encashment details, etc. thereby leaving no scope for audit trail or history. DOS accepted (January 2016) the observation.

5.1.2.4 Purchase module

Purchase function had six sub functions viz., vendor registration, indent processing, tender processing, indent recommendations and approvals, purchase/work order processing and exemption and clearance. In addition to Purchase Module in COWAA, DOS also deployed web based secured Electronic Government Procurement System (EGPS) from 1 July 2012. DOS issued instructions to its Centres/Units to process the indents valuing above a specified amount[16] through EGPS. Thus, both Purchase module of COWAA and EGPS were operated simultaneously. EGPS had processes only up to placement of orders, after which the data was migrated to COWAA.

Audit observed that the entire exercise of indent generation, tender, comparative statement, selection of bidders, approvals of pre-audit, approvals of committees and

[16] Purchase cases valuing above ₹ 10 lakh from April 2012 and purchase cases valuing above ₹ five lakh from April 2015

placement of order was done manually on the file and the data was fed into COWAA at every stage to generate print outs. The purchase module lacked certain important checks and was also not user friendly. Observations relating to each sub-function are elaborated below.

(1) Vendor Registration

The purpose of this function was to create vendor directory with identification of materials and services and registration of suppliers/contractors. Audit observed that there was no check to prevent addition of vendors already existing on the database. While adding a vendor to the directory, the user was required to verify the existence of same vendor in the directory through query mode. This check was however not carried out by the users with the result that there were multiple vendor codes for the same vendor. For example, there were four entries for the vendor "Beta Scan Systems" and six entries for "Kronix X-Ray and Allied Products". This led to data inconsistency and gave scope for incorrect results on querying. DOS agreed (January 2016) to modify the system in future.

(2) Indent Processing

This function was used to generate indents by entering indent items with details. On completion of data entry indent numbers were generated, which were registered by the Purchase section. Audit observed the followings:

i) There was no check for verifying if the indenter and the indent approving authority belonged to the division for which indent was raised. This posed a risk of grant of unauthorised approval of indents by the system. DOS stated (January 2016) that after indent preparation a printout was taken and checked manually and signed by both indenter and indent approving authority. The fact remained that there was no check in the system.

ii) There was no check to ensure that the item indented for and the line item code belonged to the same nature of expenditure i.e. Revenue or Capital. As a result, COWAA accepted indent raised for procurement of an asset item under revenue expenditure, which was incorrect. DOS agreed (January 2016) that this was to be done manually.

iii) Access control roles were not clearly defined in COWAA. The Purchase Clerk in the Purchase Section had access to edit the contents of the indent such as Item, Quantity, etc. which was not correct, as keeping the "EDIT" option open after the indents were approved by the indent approving authority is fraught with risk.

iv) After the indents were raised by the indentor, the Purchase Section had to "Register" the indent. If an error in the indent was identified after registration by the Purchase Section, there was no scope for editing. The only option available was "Re-floating/ Re-tendering". Consequently, the history of the whole case was lost without trail.

v) Although there was provision in COWAA for closure of indents that did not materialise into purchase orders, the same was not done. This resulted in 39,887 such cases remaining in the database. Further, these were displayed in the drop down menu of indents making it cumbersome for the user to select. The drop down menu also displayed indent numbers of the cases for which purchase orders had already been placed. DOS accepted (January 2016) the observations and stated that there was an interface issue with regard to the data migrated from EGPS to COWAA and that the same would be addressed in future.

(3) Tender Processing

Tender Processing function covered file opening, tender enquiry/notification, advertisement, Register of valuables, technical/commercial comparative statement, etc. Audit observations are as follows:

i) Register of Valuables screen was used to record the details of demand drafts received from the vendors. The screen had provision for reflecting the status of the draft as "Validity is Over", "Realised" and "Returned". Audit observed that COWAA accepted the dates of Demand Drafts even though the same exceeded the validity indicating lack of validation check. DOS agreed (January 2016) that errors will be removed in future.

ii) Although a Technical Comparative Statement screen was provided for comparing technically qualified vendors, the comparative statement was not generated, instead, separate technical reports in respect of each vendor were generated. This did not serve the purpose of preparation of comparative statement.

iii) The Commercial Comparative Statement screen was provided for comparison of quotations of vendors who responded against tender enquiry. This facilitates preparation of Commercial Comparative Statement and generation of "Rank" based on Vendor Code and Vendor option of each case. Audit, however, observed that these processes did not work.

iv) The program did not permit horizontal data population covering both technical and commercial bid details in the relevant table. DOS agreed (January 2016) that there was a bug in the program.

v) The option to print the comparative statement item-wise did not work. It displayed an error message. DOS agreed (January 2016) that there was a bug in the program.

vi) Indented items could be deleted from the Commercial Comparative Statement screen by the user. When these were deleted, the records were completely erased from the table without trail. There was no provision for correction of errors in the Technical/ Commercial Comparative Statement once it was registered by the Officer. The Officers had to resort to "Re-floating/ Re-tendering" option wherein the indent was reverted to generation stage and all the intermediate details were lost without trail. DOS accepted (January 2016) the observation and stated that the corrections would be carried out in future.

vii) The provision to automatically generate the comparative statement and select the lowest tenderer though available was not being used. Instead, technical and commercial comparative statements were being prepared manually and fed into the database. DOS accepted (January 2016) that the task of uploading the entire bid contents was a herculean task and if there was an error in the data entry, all the procedure from Indent Generation had to be reworked. This showed that the module was not user friendly.

(4) Recommendations and Approvals

Comparative statements were to be directed back to the indenter for providing a recommendation for the purchase. The Recommendations and Approvals screen was used for entering the purchase approval dates. Audit observed the following:

i) There was no provision for pre-audit of purchase cases in COWAA. Instead only the recommendations of pre-audit were entered by the Purchase section.

ii) There was no check to ensure the chronology of events up to the date of entry of data into the system. For example, system allowed entering of dates later than current date in the fields. Also it was possible to enter the "Lack of competition approval date" prior to the "Need Aspect Committee date" which was incorrect since Need Aspect approval should/would have been taken at the indent stage itself. Similarly, the system accepted the date of pre-audit clearance which was later than current date.

iii) The system also did not contain provision to check whether the dates of approvals entered for one vendor for a file matched with the dates entered for another vendor of the same file.

DOS accepted (January 2016) the above observations.

(5) Purchase order release

The Purchase and Work Order Release screen was used to enter data after successful completion of the purchase approvals. Audit observed that the system did not check for the total quantity for which order was to be placed for a particular item. For example, in an indent with quantity of 20, COWAA permitted placement of order on two vendors with quantity of 20 each. The system did not check whether the item for which the order was placed was approved by the indenter. DOS accepted (January 2016) the above observations.

5.1.2.5 Stores module

Stores module dealt with receipt of material, stock handling, inventory control and disposal of stores. Audit observations are as following:

(1) Material inward

The Material Inward function was used to record entry of lorry/rail receipts, collection of material by Collection Cell, receipt of materials at corresponding stores, intimation of arrival of material to the indenter, inspection and issuing of materials to concerned divisions. Audit observed following deficiencies:

- **i)** The material receipt details were entered with the help of a combo-box which displayed the consignment numbers. However, the combo box also displayed those consignment numbers relating to purchase orders for which items were received earlier. Similarly, in the Stock Handling Function also the combo box displayed list of consignments which were already taken into stock. Thus, the database was not updated.
- **ii)** The materials received and entered into the material receipt function were not registered in the system immediately, but only after the same were inspected by the indenter. Quantity of goods accepted/rejected was recorded manually by indenter and entered into the system by Stores wing after receipt of inspection report. The system is fraught with risk and leaves scope for gaps in data of material received in stores and inspected by the indenter.
- **iii)** The Lorry Receipt (LR) pending report generated for one Stores (SHPS04) showed that 60 items of LR were pending from July 2001 onwards. The Material Inspection Receipt Voucher (MIRV) pending report generated for the same Stores showed pendency of 2,001 items. This showed that the database was not updated thus rendering it unreliable.
- **iv)** There was no inbuilt check for verifying full supply or part supply against the ordered quantity. The same was entered manually. As a result, COWAA accepted entries of part supply even when full supply was received and vice

versa. Audit observed that in 6,110 cases, though full supply was received, the system showed it as part supply. Similarly, in 3,685 cases, full supply was reflected against actual receipt of part supply.

v) In case of part supplies, when entries relating to second and subsequent supplies were made, the records were not appended but were overwritten leaving no history of events. Only the quantity received as on date was available.

(2) Stock handling

The Stock handling function dealt with receipt, issue and transfer of stock items. Audit observed that though a provision was available for automatic generation of stock card number upon entering details of new stock card, the same was not used by the users. Instead, stock card numbers were entered manually. This resulted in 2,478 stock card numbers occurring more than once. Numbers[17] were repeated twice, thrice and even up to seven times.

(3) Material disposal

This function dealt with disposal of stock items. However, despite the fact that the stores module had provision for disposal of unserviceable and obsolete items, this was not used and was done manually.

5.1.2.6 Finance module

The Finance Module was used for preparation of budget documents in standard formats. It was also used for on-line budget checking for making commitments and expenditure. The major functions in this package are preparation of Revised Estimates, Budget Estimates, Operating Budget, Budget consolidation, Budget Re-Appropriation, Transfer of Revised Budget details, etc. Audit noticed that there were no checks in the module to ensure allotment of funds under a particular line item or activity. In the COWAA MIS report FAC004 "Activity wise Statement of Expenditure and Commitments", it was seen that in one of the activities, though there was no budget allotment, expenditure had been incurred, resulting in adverse balance under that Activity. Audit further observed that the bifurcation of expenditure between Plan and Non-plan shown in the COWAA MIS report did not tally with the report generated through COWAA. This showed that COWAA permitted mixing of Plan and Non-Plan Expenditure. There was also no mechanism to check the pace of expenditure and alert the management in the case of slow or heightened expenditure during a particular quarter of the year.

DOS confirmed (January 2016) the shortcomings and stated that the same would be addressed based on inputs from domain experts.

[17] Stock Card number occurring (i) twice – 1,808 cases, (ii) thrice – 89 cases, (iii) four times – 24 cases, (iv) five times – 139 cases, (v) six times – 73 cases and (vi) seven times – 125 cases

5.1.2.7 Inconsistent COWAA and MIS reports

The COWAA system could generate inbuilt reports in addition to standard MIS Reports. A test check of the reports generated through COWAA showed inconsistencies with the MIS reports. The management could not rely on the data extracted from the database and also the reports generated through COWAA. As a result, whenever information was required the same was extracted from manual records. Deficiencies noticed in reports covering Administration, Finance, etc. are elaborated in ***Appendix V***.

5.1.3 Conclusion

The COWAA package developed by Department of Space lacked basic validation checks, application controls and referential integrity. Certain business rules were also not embedded in the package. The system had programming errors and bugs. The data flow within a module and between various modules was also weak. There were gaps in data entry by users of the COWAA system. As a result, data was incomplete, incorrect, inconsistent and MIS reports generated through COWAA being unreliable. This led to significant dependence on manual operations which defeated the purpose of a computerised environment.

The matter was referred to DOS in January 2016, DOS accepted audit observations in the exit conference (March 2016) and stated that points raised by Audit were being addressed in the COWAA Web Interface System (COINS), which was under development. However, detailed replies were awaited as of March 2016.

5.2 Implementation of Telemedicine programme

Department of Space could not ensure effective utilisation of satellite communication for providing health services to patients in rural and remote areas even after incurring expenditure of ₹ 30.18 crore. Out of 389 networks established, only 150 were operational. In addition, selection of beneficiary hospitals was irregular, satellite capacity for remote and interior areas of the country was inadequate and Ka band ground terminals worth ₹ 14.12 crore could not be utilised.

5.2.1 Introduction

Department of Space (DOS) initiated (November 2001) Telemedicine Programme with a view to provide access of speciality health care services to rural population living in geographically distant, remote and interior parts of the country. The programme sought to connect remote/ rural hospitals to the specialty hospitals located in urban areas using satellite bandwidth of transponders on INSAT/ GSAT satellites. With the facility, medical images and records of patients in rural areas could be transmitted to the doctors in specialty hospitals who could provide diagnosis and treatment through live two-way audio and video conferencing.

Space Commission approved (August 2002) the policy paper on Telemedicine programme. Implementation of the programme was to be done in two phases. Under Pilot (Phase-I) of the programme (November 2001 to March 2003), 18 remote patient ends in nine States/ Union Territories[18] were to be connected with nine specialty hospitals (Details in ***Appendix VI***). After completion of the pilot project, the respective State/UT Governments were to take over operations and run the Telemedicine centres at the respective hospitals. Under Phase-II (April 2003 to March 2007), Telemedicine networks were to be expanded based on the commitments made by concerned State Governments and regional coordinating bodies with regard to their stake/ involvements.

After completion of the pilot phase, DOS briefed (May 2003) Space Commission on achievements and policy frame work for Telemedicine programme. Based on the proposal of DOS, Space Commission approved (June 2003) establishment of Telemedicine facilities at certain district/ other hospitals in:

- **i)** Remote areas such as North Eastern India and Jammu and Kashmir;
- **ii)** Interior/hilly/remote/under developed areas of some States (parts of Uttarakhand, Himachal Pradesh, Odisha, Bihar, Jharkhand and Uttar Pradesh);
- **iii)** Islands and Union Territories; and
- **iv)** Two to three selected hospitals in other mainland States for technology demonstration purpose only.

Implementation of the Telemedicine programme was to be done by the Ministry of Health and Family Welfare (MHFW) and the respective State Government agencies and Non-Government Organisations (NGOs). Healthcare being a State subject, identification/selection of the patient end, district hospitals/ trust hospitals as well as specialty hospitals for providing Telemedicine connectivity was vested with State Governments and its application in different parts of the country was to be pursued by the respective State Government hospitals, NGOs, etc. for delivery of such services. State Governments and the specialty hospitals were to allocate funds for their part of infrastructure, manpower and facility support. The role of DOS in the programme was limited to bringing awareness and introducing the technology of satellite based tele-connectivity in the form of pilot projects.

Under the programme Telemedicine network was to be established through Telemedicine nodes installed at Patient Ends, Specialty Hospitals, mobile vans as well

[18] Andaman and Nicobar Islands, Andhra Pradesh, Assam, Jammu and Kashmir, Karnataka, Kerala, Lakshadweep, Odisha and Tripura

as for monitoring purposes. DOS established 389[19] Telemedicine nodes upto July 2010 as shown in Table 13.

Table 13: Distribution of Telemedicine nodes

Area	Nodes established
Mainland States	275
Remote Areas	62
Interior Areas	21
Island States and Union Territories	26
Sub Total	**384**
Monitoring Nodes	5
Total	**389**

The State wise distribution of Telemedicine nodes is given in ***Appendix VII***. There was no further expansion of nodes after July 2010; however, DOS continued to incur expenditure to cover annual maintenance of the operational nodes. As of March 2016, DOS incurred expenditure of ₹ 30.18 crore under the programme.

5.2.2 Audit findings

Audit examined records in DOS relating to establishment of Telemedicine networks and allocation of satellite capacity for the period up to March 2014. Audit observations on these areas are discussed in the succeeding paragraphs.

5.2.2.1 Planning for satellite capacity

Satellite Communication Programme Office of DOS proposed (2001) to launch a health satellite with about 10 transponders at 36 MHz each (360 MHz) to provide medical expertise to the people in remote areas. DOS decided (September 2002) to launch a technology development satellite (GSAT 4), with a satellite capacity of 1,200 MHz in Ka band[20]. The satellite was planned to be launched in April 2005 but it was delayed and launch was attempted in April 2010 using the launch vehicle GSLV D3. In addition, 40 Ka band ground terminals at a cost of ₹ 14.12 crore were established (April 2010) to receive signals from GSAT-4.

However, GSLV D3 flight was not successful and hence GSAT 4 could not be placed in orbit. In the meantime, DOS arranged for satellite capacity through its other satellites viz. INSAT 3A, GSAT 3 and INSAT 4A. DOS continued to use its other satellites for allocation of capacity for the Telemedicine programme. However, Ka band ground terminals created at a cost of ₹ 14.12 crore could not be utilised elsewhere.

Audit further observed that DOS assessed the satellite capacity requirement of 360 MHz without obtaining inputs from the States. Against the assessed capacity, the

[19] Consisting of 302 Patient End nodes, 64 specialty hospitals, 18 mobile vans, five monitoring nodes

[20] Ka band is an electromagnetic spectrum in the frequency range of 26.5–40 GHz. This spectrum is used to speed up transmission of high-rate science data from space missions.

maximum user requirement during the entire period from 2004 to 2015 was only 56.5 MHz i.e. about 1.5 transponders (as detailed in para 5.2.2.5).

Thus, Ka band terminals planned to be used for Telemedicine applications could not be utilised.

5.2.2.2 Inadequate Telemedicine connectivity

Space Commission approved (June 2003) establishment of Telemedicine facility at remote and interior areas of the country in accordance with requests received from the concerned State Governments. The status of establishment of networks in remote and interior areas was as shown in Table 14.

Table 14: Status of establishment of networks

Region/State	Nodes to be established as per request of State Government	Nodes actually established	Shortfall (%)	Private nodes established	Total nodes established
(1)	(2)	(3)	(4)	(5)	(6)=(3) +(5)
Remote Areas					
North Eastern India	94	30	68	2	32
Jammu and Kashmir	20	12	40	0	12
Armed Forces (North Eastern India and Jammu and Kashmir)	Information not available	18	-	-	18
Total		**60**		**2**	**62**
Interior Areas					
Uttarakhand	13	2	85	2	4
Himachal Pradesh	27	1	96	1	2
Odisha	32	9	72	1	10
Jharkhand	30	0	100	1	1
Uttar Pradesh	70	1	99	2	3
Bihar	Information not available	0	-	1	1
Total		**13**		**8**	**21**

The above table shows that DOS was unable to provide adequate connectivity in the remote and interior areas. Information in respect of islands and Union Territories was not available. DOS stated (March 2016) that the States did not firm up plans with necessary infrastructure. Reply confirmed the lack of management structure to address the infrastructure issues.

5.2.2.3 Irregular connectivity to mainland States

Space Commission approved (June 2003) establishment of Telemedicine facility at two to three selected hospitals in the mainland States for technology demonstration purpose only. Audit observed that against this direction DOS covered the

Telemedicine network extensively and incurred irregular expenditure as detailed below:

i) More number of nodes (275) were established in Karnataka, Maharashtra, Gujarat, Rajasthan, Kerala, Tamil Nadu, Andhra Pradesh, Madhya Pradesh, Punjab, West Bengal and Chhattisgarh in the main land, as compared to the States with more rural population and poverty such as Uttar Pradesh (three nodes), Bihar (one node) and hilly states like Uttarakhand (four nodes), Himachal Pradesh (two nodes), and in Jharkhand (one node), which were barely connected with Telemedicine networks.

While accepting this point DOS stated (March 2016) that in cases where States decided to use satellite based option with their own funding, DOS encouraged the States by providing appropriate satellite resources to serve the lesser priority areas. Thus, DOS allocated scarce and valuable satellite resources to lesser priority areas.

ii) Space Commission had approved establishment of only two to three nodes in Andhra Pradesh. However, DOS set up Telemedicine nodes at seven hospitals. Providing connectivity to additional four nodes at a cost of ₹ 18.00 lakh from DOS funds was irregular.

DOS stated (March 2016) that Telemedicine nodes in Andhra Pradesh were implemented with due approval process of DOS. However, the fact remained that connectivity to additional four nodes was against the direction of the Space Commission.

iii) Space Commission approved providing communication equipment, basic medical equipment etc. for State wide networks only in the State of Karnataka as a role model. However, DOS covered the States of Kerala (30 nodes) and Rajasthan (40 nodes) under Telemedicine programme at a cost of ₹ 6.35 crore from its own funds.

DOS stated (March 2016) that Telemedicine nodes were implemented with due approval process of DOS. DOS added that Telemedicine nodes in Rajasthan were implemented from funds provided by the State Government. Reply of DOS is not acceptable as connectivity to additional nodes was against the direction of the Space Commission. Further, MoU with Government of Rajasthan clearly stipulated the financial liability of DOS for hardware and equipment.

iv) In accordance with Space Commission approval, four hospitals in Kerala were connected (November 2002) and DOS provided Telemedicine systems costing ₹ 75 lakh. Subsequently, DOS established (June 2004) 16 terminals at a cost of ₹ 2.02 crore to connect all district hospitals, which was irregular.

DOS stated (March 2016) that Telemedicine systems were connected with due approval process of DOS and the matter was reported to the Space Commission. However, specific approval of the Space Commission for the deviation was not obtained.

v) ISRO/DOS entered (December 2005) into MOU with Government of Rajasthan to establish Telemedicine network linking one specialty end to 31 district hospitals, six mobile units and six medical colleges with hub at a cost of ₹ 5.94 crore. ISRO/DOS provided Telemedicine systems to additional 35 hospitals (over and above the approved number of hospitals) at a cost of ₹ 4.33 crore which was irregular.

DOS stated (March 2016) that Telemedicine facility at additional hospital was established with the funding from the State. However, MoU with Government of Rajasthan clearly stipulated the financial liability of DOS for hardware and equipment.

5.2.2.4 Execution of MoU with hospitals

As discussed in para 5.2.1, identification of hospitals for establishing Telemedicine nodes was the responsibility of the State Governments. After completion of pilot project, State Governments were to take over the operations and run the Telemedicine centres at the respective hospitals. Accordingly, DOS was to enter into MoU with participating hospitals.

Audit observed that out of 384 Telemedicine nodes (excluding five monitoring nodes) established, DOS did not execute MOUs in respect of 154 nodes (40 *per cent*) as detailed in Table 15.

Table 15: Status of MOUs executed with various agencies

Description	Nodes established		Total
	With MOU	Without MOU (Percentage)	
1) Patient End at Private/ Trust Hospitals	29	19 *(40%)*	48
2) Patient End at Government Hospitals	168	86 *(34%)*	254
Total Patient End	**197**	**105*(35%)***	**302**
3) Speciality Hospitals	26	38 *(60%)*	64
4) Mobile Van	7	11*(61%)*	18
TOTAL	**230**	**154 *(40%)***	**384**

DOS stated (March 2016) that MOUs were available for 115 out of 154 hospitals mentioned by Audit and MOUs of the remaining 39 hospitals could not be traced. However, DOS could not produce the MOUs for verification by Audit.

5.2.2.5 Idling of Telemedicine nodes

DOS allocated satellite capacity from different satellites for establishing Telemedicine network. The details of Telemedicine nodes established and satellite capacity allocated from different satellites are given in Table 16.

Table 16: Establishment of Telemedicine nodes

Month/Year	Nodes	Satellite	Satellite Capacity in MHz
Jan 2004	70	INSAT 3A	15.5
Jan 2005	300	GSAT 3	36
Oct 2009	14	INSAT 4A	5
Total	**384**		**56.5**

In addition to the above 384 nodes, five monitoring modes were established. GSAT 3 was decommissioned in September 2010, after which satellite capacity for Telemedicine was re-organised as shown in Table 17.

Table 17: Position of Telemedicine nodes after decommissioning of GSAT 3

Month/Year	Nodes	Supporting Satellite	Satellite Capacity in MHz	Remarks
October 2009	384	INSAT 3A, GSAT 3 and INSAT 4A	56.5	Installed capacity at the time of decommissioning of GSAT 3.
Sept 2010	-300	GSAT 3	-36	De-activation of nodes due to decommissioning of GSAT 3.
Oct 2010	38	INSAT 3C	9	Re-activation of Nodes in INSAT 3C
Jan 2011	47	INSAT 3A	9	Re-activation of Nodes in INSAT 3A
July 2012	190	GSAT 12	36	-
March 2013	-38	INSAT 3C	-9	It was decided to allocate capacity on GSAT 12
June 2013	-117	INSAT 3A	-24.5	It was decided to allocate capacity on GSAT 12
June 2013	117	GSAT 12	36	117 nodes on INSAT 3A allocated on GSAT 12
	321	**TOTAL**	**41**	

On decommissioning of GSAT 3 (September 2010), 300 out of 384 nodes were de-activated. Subsequently, during the period from October 2010 to June 2013, 321 nodes were re-activated. The status of remaining 68 Telemedicine nodes was not on record.

Audit observed that though satellite capacity of 41 MHz was available for 321 nodes, only 150 Telemedicine nodes were operational (August 2013). The remaining 171 Telemedicine nodes were not operational even as of March 2016 and were, therefore, idling. The satellite capacity of 21.84 MHz kept idle during the period from August 2013 to March 2016 had a market value of ₹ 8.09 crore at the rate of ₹ five crore per unit (36 MHz) per annum.

Audit further observed that some of the users were not willing to continue with the Telemedicine connectivity provided by DOS. Sir Gangaram Hospital, New Delhi decided to discontinue (January 2010) the Telemedicine connectivity to three Community Health Centres[21] and two mobile vans stating that the completion of project period of three years was over. The Telemedicine connectivity was provided at a cost of ₹ 38 lakh. Similarly, Rajasthan State Government decided to pursue Telemedicine through their State owned terrestrial network and opted out (March 2013) of Telemedicine programme where 38 Telemedicine nodes costing ₹ 5.10 crore were established. DOS did not shift these unused and idling nodes to other users though there were requests from another 33 users.

Thus, idling of satellite capacity and failure of DOS to re-allocate the same to available users resulted in non-utilisation of these nodes.

DOS stated (March 2016) that the capacity earmarked for societal application has indirect value and applying market value may not be appropriate. The fact remained that satellite capacity was not provided to other users in spite of pending requests.

5.2.2.6 Irregular expenditure incurred under the programme

Audit observed instances of irregular expenditure incurred under the Telemedicine programme as listed below:

i) The Space Commission (June 2003) had not approved for providing components such as Multi Conference Unit and Internet Protocol phones, internet bandwidth cost, hub manning cost from DOS budget. However, Audit observed that in Andaman and Nicobar Islands expenditure of ₹ 47 lakh was incurred against this direction.

DOS stated (March 2016) that the network was established with the approval of DOS. However, these components of network were provided against the direction of Space Commission.

ii) As per circular issued by DOS for work done on behalf of outside bodies, DOS was required to collect funds in advance from the user, credit the same under its Deposit head and incur expenditure from the deposit head of account. Instead, DOS instructed Antrix Corporation Ltd. (Antrix), its commercial arm, to collect money from the State Governments while incurring expenditure from DOS budget for the Telemedicine programme. Audit scrutiny revealed that Antrix received amount of ₹ 1.62 crore from the State Government of Chhattisgarh and ₹ 2.60 crore from the State Government of Maharashtra, which was not credited to Government account and remained with Antrix.

[21] At Gohana, Sonepat in Haryana and Kethun in Rajasthan

While accepting the point, DOS stated (March 2016) that a detailed account of transaction of funds had been sought from Antrix.

iii) Space commission (June 2003) had not approved providing mobile vans under Telemedicine programme. Against the direction, DOS established 18 mobile Telemedicine units at a cost of ₹ 2.51 crore. Of these, two mobile Telemedicine buses costing ₹ 47.50 lakh were provided (May 2003/ July 2004) to two corporate hospitals viz. Vittala International Institute of Opthalmology, Bengaluru, Sankara Netralaya, Chennai thereby extending undue benefit. Sankara Netralaya, Chennai was also provided with spectrum analyser and multi casting video conferencing equipment.

While accepting the position DOS stated (March 2016) that with respect to distribution of mobile vans ISRO supported the hospitals which showed interest in the project without any preference to the region.

5.2.2.7 Avoidable expenditure on providing annual maintenance

In terms of MOU entered with State Governments and private/trust hospitals, annual maintenance of communication equipment and medical equipment provided by DOS was the responsibility of State Governments/private/trust/specialty hospitals after one year of warranty of the equipment. However, DOS entered into comprehensive Annual Maintenance Contracts (AMC) for 100 nodes[22] and incurred avoidable expenditure of ₹ four crore on AMC during the period 2010-16.

While admitting the Audit observation, DOS stated (March 2016) that though AMC was the responsibility of the States as per MOU, it was not practicable to implement. The fact remained that DOS went against the provisions of its own MOU.

5.2.2.8 Wasteful expenditure in procuring VSAT terminals

Prior to 2005, DOS utilised a version of VSAT systems costing ₹ five lakh. A new version of VSAT systems capable of providing data on real time basis was available (2005) with Bharat Electronics, Bangalore (BEL) costing ₹ 1.50 lakh. As the older version was costlier by ₹ 3.50 lakh, DOS decided (2005) to procure new version of VSAT systems from BEL.

Audit, however, observed that DOS procured (March 2005) 40 numbers of old version of VSAT system costing ₹ two crore from another vendor which could not be put to use. In contrast, the cost of new version of system would be only ₹ 60 lakh for 40 systems. Thus, DOS incurred avoidable expenditure in procurement of the older version which worked out to ₹ 1.40 crore (₹ two crore - ₹ 60 lakh).

[22] AMC of 100 nodes was awarded in 2013 at a cost of ₹ 1.75 crore and 100 computers were also replaced. In addition, DOS sanctioned an amount of ₹ 11.50 lakh to Amrita Institute of Medical Sciences (AIMS), Kochi for repair/replacement of equipment and payment of around ₹ 10 lakh for all applicable duties and taxes extra.

DOS stated (March 2016) that old VSAT systems were needed to meet the connectivity requirement in the groups which were based on old systems during the time frame of 2004-05. Reply is not acceptable since DOS had decided in 2005 itself to procure new version of VSAT system since older version was costlier.

5.2.3 Conclusion

The mandate of Department of Space (DOS) in satellite based application projects was demonstration of satellite based application technology catering to the requirement of the user and its transfer to the user.

DOS planned a satellite with capacity more than the estimated requirement which resulted in idling of Ka band ground terminals worth ₹ 14.12 crore. DOS could not achieve its objective of demonstration of a cost effective technology even after incurring expenditure of ₹ 30.18 crore under the programme. As on March 2016, out of 389 networks established, only 150 were operational. The selection of super specialty/ private hospitals for the programme was arbitrary. DOS selected the hospitals directly without involving the State Government. There was inadequate connectivity for remote and interior areas. In contrast, DOS established more number of nodes in the mainland area against the direction of Space Commission. DOS incurred avoidable expenditure on Telemedicine nodes and the purchase of VSAT system.

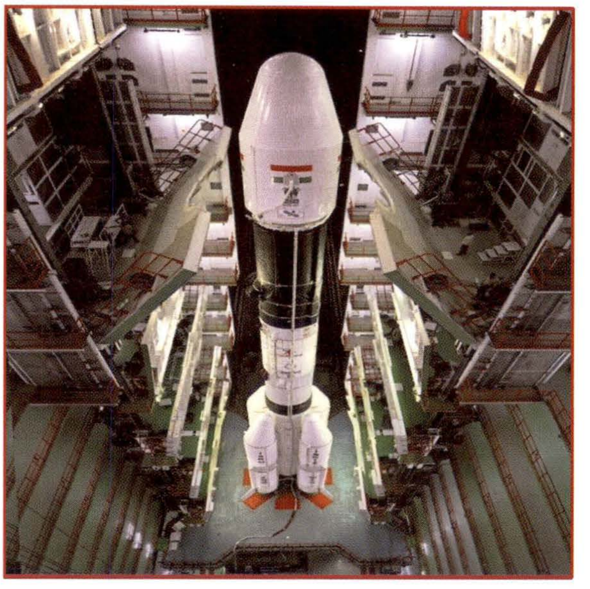
5.3 Wasteful expenditure on material for propellant tanks

Department of Space did not prepare a definite time based action plan for phasing out a material found to cause failures in propellant tanks of launch vehicles. This resulted in wasteful expenditure of ₹ 3.49 crore towards the cost of one propellant tank and 65 tonnes of the material kept in stock that was ultimately quarantined.

Liquid Propulsion Systems Centre (LPSC), located at Valiamala (Thiruvananthapuram) and Bengaluru is a unit under Indian Space Research Organisation (ISRO) of Department of Space (DOS) responsible for development of earth storable and cryogenic engines, stages and associated components, propulsion systems, propellant tanks, etc. for launch vehicles and spacecraft. Vikram Sarabhai Space Centre, Thiruvananthapuram (VSSC) is another unit of ISRO engaged in research on launch vehicle technologies.

ISRO had been using AFNOR 7020, an alloy of Aluminium, for the construction of propellant tanks for both Polar Satellite Launch Vehicle (PSLV) and Geo-Stationary Satellite Launch Vehicle (GSLV). During 1995-96, there were failures in the propellant and water tanks using AFNOR 7020 material. Around the same time, a paper was published (June 1996) by Scientists of Materials and Metallurgy Group, VSSC wherein it was indicated that the alloy material AA 2219 was proposed to be used for construction of tanks in Indian launch vehicle programmes. The paper also mentioned that the material "now has been indigenously developed on an industrial scale" in India.

A National Committee was constituted (April 2002) by ISRO to analyse these failures. The Committee concluded that failure was due to stress corrosion cracking and recommended migration to AA 2219 in a phased manner. The Committee also recommended continuing the use of AFNOR 7020 during the transition period. However, no time frame was suggested for migration at that time.



Geo-Stationary Launch Vehicle GSLV Mk III

However, VSSC had entered into a contract (March 2007) with Hindustan Aeronautics Limited, Bengaluru for fabrication and supply of GSLV light alloy structures and tankages including four propellant tanks. LPSC was the contract manager for development of propellant and water tanks. The tanks were to be developed using AFNOR 7020, which was to be provided by VSSC. Tanks were to be delivered in stages between July 2009 and January 2011. Of these, one tank made out of AFNOR 7020 at a cost of ₹ 1.14 crore had been delivered. LPSC also had stock of about 65 tonnes of AFNOR 7020 material worth ₹ three crore.

While discussing the status of realisation of tankages for PSLV and GSLV, Launch vehicle sub-committee decided (June 2010) that AFNOR 7020 material would be put on hold and only AA 2219 material would be used for realisation of tanks.

Based on this decision, LPSC placed the GSLV tank and balance stock of AFNOR 7020 material under quarantine. The value of the scrap material was estimated at ₹ 65 lakh.

Audit observed that even though the National Committee had recommended phasing out of AFNOR 7020 as early as 2002, DOS delayed the same for eight years. No time frame and action plan to phase out the material was prepared. In fact, DOS procured additional quantity of AFNOR 7020 material for seven PSLV tanks during the transition period (2008). Audit also noticed that DOS was also aware that other space agencies such as Ariane (French Space Agency) had also phased out the material for the same reason. Further, a GSLV-D5 launch (August 2013) had to be aborted due to leakage of propellant tank which was made out of AFNOR 7020 material, indicating that delay in phasing out the material had adversely affected DOS.

Thus, DOS did not take a definite time-based action to phase out AFNOR 7020 material which resulted in wasteful expenditure of ₹ 3.49 crore[23] due to quarantine of material.

On this being pointed out, DOS stated (March 2016) that though there was a general recommendation to change over from AFNOR 7020, considering the stable and successful performance in 21 PSLV missions, the decision to sustain its usage was pragmatic.

The reply is to be viewed in the light of the fact that LPSC had earlier (January 2015) accepted that even though tanks of AFNOR 7020 material were used in 21 PSLV flights, the material showed proneness to stress corrosion cracking in service condition in due course of usage.

Thus, failure of DOS to prepare a definite time linked action plan to phase out AFNOR 7020 resulted in stock piling of huge quantity of the material of 65 tonnes (sufficient to build about 11 propellant tanks[24]) and wasteful expenditure.

5.4 Loss due to delayed commissioning of equipment

Department of Space waived off liquidated damages for delay in supply and commissioning of a system on-board a satellite having limited operational life and thereby extended undue benefit to the contractor to the extent of ₹ 1.16 crore. Besides, the delay resulted in proportionately lesser use of its operational life.

According to Rule 204 (xiv) (a) and (b) of General Financial Rules, 2005, the terms of a contract, including the scope and specification once entered into, should not be materially varied. Wherever material variation in any of the terms or conditions in a contract becomes unavoidable, the financial effect involved should be examined and recorded and specific approval of the authority competent to approve the revised financial commitment obtained, before varying the conditions.

ISRO Satellite Centre, Bengaluru (ISAC), a constituent unit of Indian Space Research Organisation (ISRO)[25]/ Department of Space (DOS), entered (February 2010) into a contract with Thales Alenia Space, Italy (contractor) for the manufacture, integration tests and delivery of GPS Radio Occultation System (ROSA) at a total cost of Euro 28,50,000. The instrument was to be commissioned on-board Megha-

[23] ₹ 1.14 crore (cost of quarantined tank) + ₹ 3.0 crore (value of material in stock) - ₹ 0.65 crore (recovery value of scrap material)

[24] About 5.5 tonnes of AFNOR 7020 is required for fabrication of one propellant tank.

[25] ISRO is the research and development unit of Department of Space.

Tropiques, an Indo-French Joint Satellite Mission for providing scientific data for climate research and aiding scientists to refine prediction models. The main function of the ROSA instrument was to determine the atmospheric temperature and humidity profile which are essential for interpreting and modelling the atmosphere.

Payment was to be released in four instalments on achievement of specified milestones. The last instalment of five *per cent* of contract value was payable on commissioning of the system or maximum within eight months of delivery of ROSA whichever was earlier.

As per Clause 11 of the contract, supply of ROSA Proto Flight Model (PFM) and on-orbit commissioning of the system was to be completed within December 2010 and August 2011 respectively, synchronous with launch of satellite. Further, as per Clause 23 of the contract, except in the case of 'force majeure', if the contractor failed to deliver the system within the stipulated time, Liquidated Damages (LD) of 0.5 *per cent* of the contract price per calendar week of delay up to maximum of five *per cent* of the contract price was recoverable by ISAC.

Around the stipulated time of delivery, the contractor informed (December 2010) that the assembling and testing of ROSA was delayed due to internal flooding at their site. The contractor assured restoration of flooded 'pickling line' by 10 January 2011 and requested for extension of delivery period under 'force majeure'. ISAC did not accept the contractor's application for extension of time for the reason that the contractor had not completed even the assembly of the equipment by December 2010.

ROSA was ultimately received by ISAC in June 2011. The satellite was launched (October 2011) by ISRO. On-orbit commissioning of ROSA, which was to be completed within eight months after delivery, was completed by the contractor in October 2012, after 16 months from the date of delivery. The scientific data of ROSA was made available by ISRO to the scientific community from 16 October 2012 onwards after completion of on-orbit commissioning by the contractor.

However, instead of levying LD, ISAC submitted (March 2013) a proposal to DOS for extending the delivery and commissioning period of ROSA upto June 2011 and October 2012 respectively, without imposing LD and releasing the entire fourth milestone payment of five *per cent* citing delay on 'force majeure' conditions and stating that the contractor had supported test activities during space craft pre-launch and post-launch commissioning.

Accordingly, DOS approved (May 2013) extension of delivery schedule and also waived (August 2013) LD of Euro 1,42,500 equivalent to ₹ 1.16 crore. ISAC released total payment of ₹ 18.37[26] crore to the contractor.

[26] ₹ 5.13 crore (March 2010) + ₹ 2.59 crore (September 2010) + ₹ 9.53 crore (September 2011) + ₹ 1.12 crore (July 2013)

Audit observed that delay of one year in commissioning of ROSA system from launch of the satellite resulted in idling of the system on-board the satellite for one year as scientific data for climate research was not provided for the period between October 2011 and October 2012. ROSA payload and Megha-Tropiques satellite had operational lives of five years and minimum three years respectively. The delay of eight months beyond period stipulated for commissioning the system resulted in proportionately lesser use of its operational life, which expressed in terms of financial value, would be to the extent of ₹ 2.45 crore[27].

Audit further observed that DOS/ISAC did not consider this potential loss due to non-utilisation of equipment while waiving LD for delay attributable to the contractor. Instead, fearing non-cooperation from the contractor in post-launch technical support, DOS extended undue benefit to the contractor by failing to impose LD which it was contractually empowered to levy. This was also in contravention of the provisions of GFRs.

DOS stated (February 2016) that data from ROSA was available to the scientific community from the day the instrument was powered on-board Megha-Tropiques. DOS added that LD was waived considering the extended on-orbit commissioning support provided by the contractor and in view of future cooperation.

The reply of DOS is not acceptable as the data was made available from 16 October 2012. Further, the contract originally provided for on-board commissioning within eight months from delivery, which was not achieved. The delayed delivery and commissioning of the equipment resulted in non- availability of the data for one year from the launch of the satellite.

Thus, waiving of liquidated damages for the delay in supply and commissioning of the ROSA system resulted in undue benefit to the contractor to the extent of ₹ 1.16 crore. Besides, delay in delivery and commissioning of the system having limited operational life resulted in proportionately lesser use of its operational life.

[27] 18.37/60x8 i.e. proportionate value of ROSA system costing ₹ 18.37 crore for eight months over operational life of five years.

5.5 Unfruitful expenditure on consultancy services

Department of Space hired a firm for providing architectural and other consultancy services for construction of a building in New Delhi without following due diligence in selection of the firm. The firm could not comply with the initial design requirements of the statutory authority and DOS rescinded the contract and decided to carry out the work in-house. Consequently, payment of ₹ 1.04 crore made to the firm was rendered unfruitful.

Rules 168 to 175 of the General Financial Rules, 2005 (GFRs) stipulate the procedure for selection of consultants for procurement of services. The rules prescribe that technical and financial bids should be invited from short listed consultants and the successful bidder selected after due evaluation and ranking of the bids. Rule 159 (1) of the GFRs stipulates that ordinarily payments for services rendered or supplies made should be released only after the services have been rendered or supplies made.

Ministry of Urban Development allotted (March 2006) 3,750 square metres of land to DOS/Indian Space Research Organisation (ISRO) at Sadiqnagar, New Delhi for establishing Space Complex Building to house the important wings[28] of DOS. DOS short listed five firms to undertake the architectural work of the building and invited (July 2006) them to participate in the architectural competition. During evaluation (December 2006) of drawings submitted by the five short listed firms, DOS decided to prepare detailed architectural design in-house. As such, none of the drawings submitted by the firms was considered.

Subsequently, DOS decided (April 2007) to outsource the complete design, estimation and project management work and identified STUP Consultants Private Limited, Bengaluru (Consultant), one of the five short listed firms who had submitted their drawings for the architectural competition. After negotiations, DOS entered (September 2007) into an agreement with the Consultant for planning, designing and furnishing of detailed estimates along with working drawings, etc. The scope of work included architecture, design, obtaining statutory clearances from various local bodies[29] on the design and scheme, preparation of detailed estimates, periodic visits to the site during execution of work and obtaining completion and occupancy certificates. Thus, the Consultant was to assist DOS throughout execution of the works.

DOS was to pay remuneration to the Consultant at an all-inclusive rate of 4.25 *per cent* of the completion cost of the works for which the service was being rendered by the Consultant. Payment was to be released in stages after completion of various

[28] Branch Secretariat, Laboratories for Remote Sensing, Disaster Management System, Village Resource Centre, Telemedicine, Tele-education, etc.

[29] Municipal Corporation of Delhi (MCD), Delhi Development Authority, Chief Fire Officer, Airports Authority of India, Delhi Urban Arts Commission and final clearance by MCD.

activities i.e., 45 *per cent*[30] of the payment was to be released against preparation and submission of drawings to local authorities, five *per cent* on obtaining approval from statutory authorities, 25 *per cent* on preparation of structural/ electrical/ Public Health/ water supply drawing, 10 *per cent* during the progress of work, five *per cent* on approval of power/ water supply connections from the local authorities and 10 *per cent* upon completion of the work.

Further, as per the agreement, in the event of failure of the Consultant to complete the works within the prescribed schedule and in a satisfactory manner, DOS could only levy compensation subject to a maximum of 10 *per cent* of the total fees payable.

The Consultant completed the initial planning activities and submitted (December 2007) the proposal to Municipal Corporation of Delhi (MCD). After clearance by all other agencies, the proposal was submitted to Delhi Urban Arts Commission (DUAC). DUAC reviewed (July 2010) the proposal but did not accord approval, observing that the form of the building was not appropriate to the environment and suggested that the architect attempt an alternative proposal/form.

The Consultant informed (October 2010) DOS that DUAC was not likely to consider the proposal favourably unless a totally new concept in drastic variance to the original design was developed. The Consultant also informed that if they were to revise the same, they would have to be compensated fully for the works carried out so far and also for the new proposal to be done by them.

Meanwhile, DOS constituted (August 2010) a High Level Committee to review the proposal along with observations of DUAC and recommended (November 2010) that the building may be designed afresh in-house by its Civil Engineering Programme Office (CEPO)[31] and that the agreement with the Consultant may be terminated.

Accordingly, DOS rescinded (November 2010) the contract with the Consultant. The planning of the building was taken up afresh by CEPO and the revised scheme was submitted to MCD in October 2011. DOS made total payment of ₹ 1.04 crore (January 2008 to March 2010) to the Consultant against delivery of work plan and partial work done in preparation of drawings and after adjusting compensation of ₹ 18.45 lakh, being 10 *per cent* of the total fees payable to the Consultant. The remuneration was calculated based on the approved estimated total cost of work of

[30] 10 *per cent* on preparation of conceptual drawings; 10 *per cent* on preparation of preliminary drawings and block estimates; five *per cent* on submission of drawings to local authorities and 20 *per cent* on preparation of tender drawings, detailed estimates and schedule of quantities.

[31] New nomenclature for Civil Engineering Division

₹ 43.41 crore which worked out to more than 50 *per cent*[32] of the total consultancy charges payable under the agreement.

Selection of Consultant on nomination basis and inability to obtain statutory clearance from local authorities resulted in unfruitful expenditure of ₹ 1.04 crore incurred on remuneration to the Consultant.

DOS stated (February 2016) that the Consultant was selected as it was one among the empanelled consultants of DOS. DOS further stated that general procedures for employment of consultants are different from the procedure for procurement of goods and added that stages of payment included in the contract were payments for processes involved in the development of a design.

The reply is not acceptable as DOS conducted an architectural competition for selection of consultant for the said work but later appointed the Consultant without proper evaluation and ranking of the offers submitted by all the participating firms.

Thus, selection of Consultant on nomination basis and inability to obtain statutory clearance from local authorities resulted in unfruitful expenditure of ₹ 1.04 crore incurred on remuneration to the Consultant.

5.6 Non-levy of labour welfare cess on construction work payment

Vikram Sarabhai Space Centre, Thiruvananthapuram failed to deduct statutory labour welfare cess to the extent of ₹ 71.23 lakh from payments made to contractors for execution of civil works.

In terms of section 3(1) of the Building and Other Construction Workers' Welfare Cess Act, 1996, a cess is to be levied and collected, at such rate not exceeding two *per cent*, but not less than one *per cent*, of the cost of construction incurred by an employer, as specified by the Government from time to time; and the proceeds of the cess collected are to be transferred to the Building and Other Construction Worker's Welfare Board constituted by a State Government.

For implementation of the Act, Government of Kerala followed the Central Government Rules. The Central Government Rule specified a cess at the rate of one *per cent* of the cost of construction incurred by an employer.

Scrutiny of records at Vikram Sarabhai Space Centre, Thiruvananthapuram (VSSC), a unit of Indian Space Research Organisation, revealed that VSSC executed civil works amounting to ₹ 71.23 crore through contractors between January 2011 and November 2014. However, labour welfare cess amounting to ₹ 71.23 lakh, being

[32] Total consultancy charges payable were 4.25 *per cent* of ₹ 43.41 crore i.e. ₹ 1.84 crore. Payment of ₹ 1.04 crore is more than 50 *per cent* of this amount.

one *per cent* of the work executed, was not deducted while making payments to the contractors.

Non-levy of labour welfare cess on payments for civil construction works in contravention of the statutory provision resulted in non-collection and remission of labour welfare cess to the State Government for welfare activities of labourers to the extent of ₹ 71.23 lakh.

Accepting the Audit observation, DOS stated (February 2016) that VSSC was presently recovering and remitting labour welfare cess. The fact remained that the cess was not recovered from the payments made in the earlier period.

CHAPTER – VI

Ministry of Earth Sciences

6.1 Non-establishment of desalination plants and wasteful expenditure

National Institute of Ocean Technology, Chennai undertook a project on establishment of desalination plants in six islands of Lakshadweep without conducting detailed survey of locations, techno-economic conditions and assessment of its resources for execution of the large scale project. As a result, out of six plants planned, only two plants were established. Of the remaining four plants, one plant was established but remained non-functional even after spending ₹ 4.32 crore due to site related issues, resulting in wasteful expenditure. NIOT incurred expenditure of ₹ 37.54 crore on the project. An amount of ₹ 69.28 crore remained idle with NIOT.

National Institute of Ocean Technology, Chennai (NIOT) is an autonomous organisation under the Ministry of Earth Sciences (MoES) engaged in developing technologies and their applications for sustainable utilisation of ocean resources and providing technical services and solutions to organisations working in the oceans.

NIOT established (May 2005) a plant of one lakh litre of water per day capacity at Kavaratti in Lakshadweep using Low Temperature Thermal Desalination (LTTD) technology which converts saline water into potable water. The water generated by the plant was accepted by the local population. With a view to provide safe drinking water to people on other islands, Lakshadweep Administration (LA) decided to install similar plants based on this technology in eight islands and approached NIOT. Accordingly, NIOT submitted (December 2005) a project proposal indicating a cost of ₹ 4.70 crore and ₹ 3.90 crore for LTTD plants having capacity of three lakh litres per day and 1.5 lakh litres of water per day respectively. The project was to be funded by Ministry of Drinking Water and Sanitation (MDWS).

Planning Commission accorded (March 2006) in-principle approval for setting up eight plants in eight islands[33]. However, LA decided (June 2006) to establish plants at

[33] Agatti, Minicoy, Andrott, Amini, Kitlan and Chetlet, Kadmat and Kalpei.

six islands[34] during the ongoing financial year. NIOT entered (August 2006) into Memorandum of Understanding (MoU) with LA for installation and commissioning of LTTD plants. The plants were to be commissioned within 24 months of commencement of the project. LA released (September 2006) an amount of ₹ 26.60 crore to NIOT for setting up the plants. LA also released (October 2006) an amount of ₹ 73.79 lakh to NIOT for conducting Bathymetric[35] survey of the various islands. NIOT however, did not conduct the survey at that time.

NIOT initiated (October 2006) the work by calling for tenders but the same could not be commenced due to increase in project cost quoted by bidders. Consequently, the estimated project cost was increased (March 2007) to ₹ 60 crore and further (November 2007) to ₹ 85 crore. The revised cost was not approved by Planning Commission which insisted (July 2007/October 2007/November 2007) on submission of detailed item wise cost estimates. Subsequently, LA decided (January 2008) to implement the project in six islands in two phases viz. Agatti, Minicoy and Andrott in the first phase and Amini, Kitlan and Chetlet in the second phase. The capacity of the plants was also reduced to one lakh litre per day for all the proposed plants at cost of ₹ 9.88 crore per plant. The revised plan was approved (March 2008) in-principle by Planning Commission. The plants were to be commissioned within one year from date of commencement (August 2008).

During course of the project, NIOT informed (November 2008) LA that it could not carry out the committed work due to shortage of manpower and stating that it was not the mandate of NIOT to carry out job work as a whole. Instead, it agreed to undertake the work with vendors to whom it would transfer the technology in the form of design and drawing documents at the end of Phase I. Subsequently, NIOT conducted (February 2009) a detailed survey of the islands.

NIOT could not commission the three plants as envisaged within one year (August 2009). The plants at Minicoy and Agatti were commissioned in April 2011 and July 2011 respectively at total cost of ₹ 26.86 crore. The plant at Andrott was not commissioned due to complex site conditions requiring change in design and methodology in execution. After incurring expenditure of ₹ 4.32 crore, NIOT decided to defer further work at Andrott to the second phase and at a different site.

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[34] Agatti, Minicoy and Andrott in the first phase and Amini, Kitlan and Chetlet in the second phase and first four plants with capacity of three lakh litres per day and last two plants (Kitlan and Chetlet) with capacity of 1.5 lakh liters per day.

[35] Bathymetry is the study of floors of water bodies.

Second Phase (Amini, Kitlan and Chetlet Island)

LA released (July 2009) an amount of ₹ 32.68 crore for commissioning of the three plants under the second phase. Again, due to increase in cost quoted by bidders, NIOT submitted (May 2011) a proposal to LA for revising the cost of the project to ₹ 125 crore[36]. LA accorded (July 2012) approval for revision of total project cost to ₹ 99 crore.

In the meantime, NIOT awarded (September 2011) the contract to the lowest bidder, Kirloskar Construction and Engineers Ltd. (KCEL) for amount of ₹ 40.66 crore and released (December 2011) the first instalment of ₹ 4.80 crore to it. However, KCEL sought cost escalation of ₹ 55 crore. Eventually, NIOT cancelled (May 2013) its contract with KCEL and encashed a bank guarantee of ₹ 14.40 crore submitted by the firm.

Based on estimate submitted (June 2013) by NIOT, LA submitted a revised proposal (November 2013) to MDWS seeking approval for total cost of ₹ 181.27 crore. However, Ministry constituted (December 2014) a Technical Committee to examine the techno-economic aspects of the proposal. The Committee recommended (June 2015) project cost of ₹ 280 crore. The proposal was still under consideration as of February 2016.

NIOT received funds of ₹ 59.28 crore[37] from LA and earned interest of ₹ 33.14 crore on the same. Besides, NIOT also had the amount of ₹ 14.40 crore towards encashment of bank guarantee from KCEL. NIOT incurred an expenditure of ₹ 37.54 crore[38] on the project. The balance amount of ₹ 69.28 crore remained idle with NIOT.

Audit observed that NIOT neither conducted detailed survey of the locations nor assessed the techno-economic conditions before committing to the project initially. Further, NIOT committed large scale commissioning of desalination plants at eight locations even though its mandate was limited to providing technical services. NIOT also failed to assess its manpower position to ascertain whether such extensive work could be effectively and efficiently supervised. Deficiency in planning the project resulted in frequent revisions in the scope of work as well as cost of the project, delay in project execution and wasteful expenditure of ₹ 4.32 crore on the non-functional plant at Andrott island.

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[36] including project cost of ₹ 96 crore and charges for project management

[37] ₹ 26.60 crore + ₹ 32.68 crore

[38] ₹ 10.36 crore (Minicoy Island) + ₹ 16.50 crore (Agatti Island) + ₹ 4.32 crore (Andrott Island) + ₹ 6.36 crore for others and first milestone for execution at the six islands selected.

MoES stated (February 2016) that desalination plants could not be commissioned on time due to difficult site conditions, remoteness of islands and administrative procedures to be followed for approvals.

The reply of MoES is not acceptable as the objective of providing drinking water to people living in four out of six Islands planned under the project remained unachieved even after a lapse of more than six years mainly due to deficiency in planning, frequent revision in the scope of work and cost of the project and delay in project execution.

New Delhi
Dated: 04 May 2016

(MANISH KUMAR)
Principal Director of Audit
Scientific Departments

Countersigned

New Delhi
Dated: 05 May 2016

(SHASHI KANT SHARMA)
Comptroller and Auditor General of India

APPENDICES

Appendix I (Refer to Paragraph 1.6)

Outstanding Utilisation Certificates

Ministry/ Department	Period to which grant relates	Number of utilisation certificates outstanding due by March 2015	Amount (*₹ in lakh*)
Department of Atomic Energy	1991-08	116	527.33
	2008-13	332	2,698.83
	2013-14	714	5,735.09
Total		**1,162**	**8,961.25**
Department of Bio-Technology	Details not available		
Department of Science and Technology	Details not available		
Department of Scientific and Industrial Research	Details not available		
Department of Space	1976-08	116	799.93
	2008-13	111	409.14
	2013-14	62	256.64
Total		**289**	**1,465.71**
Ministry of Earth Sciences	1983-08	416	2,844.56
	2008-13	192	2,074.45
	2013-14	116	651.14
Total		**724**	**5,570.15**
Ministry of Environment, Forest and Climate Change	1981-08	5,495	24,288.69
	2008-13	655	21,861.94
	2013-14	Not received	Not received
Total		**6,150**	**46,150.63**
Ministry of New and Renewable Energy	2005-08	9	31.94
	2008-13	301	20,785.77
	2013-14	423	64,213.24
Total		**733**	**85,030.95**
Ministry of Water Resources, River Development and Ganga Rejuvenation	1986-08	33	196.15
	2008-13	205	2,624.84
	2013-14	11	7,385.99
Total		**249**	**10,206.98**
Grand Total		**9,307**	**1,57,385.67**

Appendix II (Refer to Paragraph 1.8)

Statement of losses and irrecoverable dues written off/waived during 2014-15

(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	-	-	-	-	27	6.17	-	-	-	-
Department of Bio-Technology	Not available									
Department of Science and Technology	Not available									
Department of Scientific and Industrial Research	Not available									
Department of Space	-	-	-	-	20	14.85	1	0.07	1	1.00
Ministry of Earth Sciences	Nil									
Ministry of Environment, Forest and Climate Change	Not available									
Ministry of New and Renewable Energy	Nil									
Ministry of Water Resources, River Development and Ganga Rejuvenation	Not available									
Total	**-**	**-**	**-**	**-**	**47**	**21.02**	**1**	**0.07**	**1**	**1.00**

Appendix III (Refer Paragraph 1.10)

Summarised position of the Action Taken Notes (ATNs) awaited from various Ministries/ Departments up to the year ended March 2015 as of December 2015- ATNs which have not been received from the Ministry/Department even for the first time

Report Number and Year	Paragraph Number	Para title	Delay in submission of ATNs (in months)
DEPARTMENT OF ATOMIC ENERGY			
1) 13 of 2012-13	10.1	Avoidable expenditure of ₹ 3.32 crore	37
2) 22 of 2013	2.2	Hasty procurement of equipment without creating infrastructure facilities for installation	24
MINISTRY OF EARTH SCIENCES			
3) 27 of 2014	5.1	National Data Buoy Project	10
4) 27 of 2014	5.2	Irregular payment of gratuity	10
MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE			
5) 21 of 2013	Standalone	Compensatory Afforestation in India	24

Appendix IV (Refer Paragraph 1.10)

Summarised position of the Action Taken Notes (ATNs) awaited from various Ministries/ Departments up to the year ended March 2015 as of December 2015- ATNs on which Audit has given comments/observations but revised ATNs have not been received

Report Number and Year		Paragraph Number	Title	Delay in submission of ATNs (in months)
DEPARTMENT OF ATOMIC ENERGY				
1)	5 of 2001	5.4	Wasteful expenditure (Sl no. 5.19 to 5.22)	7
2)	5 of 2001	5.5	Recovery at the instance of audit (Sl no. of para 5.23 to 5.25)	25
3)	5 of 2002	9.1	Avoidable expenditure due to negligence	25
4)	27 of 2014	2.1	Non-utilisation of equipment	5
DEPARTMENT OF BIO-TECHNOLOGY				
5)	5 of 2003	3.1	DBT Review	5
DEPARTMENT OF SCIENCE AND TECHNOLOGY				
6)	5 of 2005	5.1	Unfruitful expenditure during GTS-Bicentenary celebration	7
7)	1 of 2006	3	Functioning of Technology Development Board	1
8)	13 of 2007 (PA)	5.3	Internal controls in DST	15
9)	CA 3 of 2008	5.1	Unfruitful expenditure	7
10)	CA 3 of 2008	5.2	Irregular extension of service	7
11)	CA 16 of 2008-09	5.3	Activities of Birbal Sahni Institute of Paleobotany, Lucknow	6
12)	22 of 2013	5.2	Inadmissible payment of Transport Allowance	7
13)	27 of 2014	3.1	Fraudulent payment of legal fees	4
14)	27 of 2014	3.2	Non-installation of equipment	4
DEPARTMENT OF SCIENTIFIC AND INDUSTRIAL RESEARCH				
15)	6 of 1996	5.8	Extra expenditure for unconsumed power	1
16)	5 of 1998	2.1	Review of Manpower Audit of CSIR	6
17)	5 of 1998	2.4	Loss due to defective agreement	1
18)	5 of 1999	4.4	Extra expenditure due to defective design	1
19)	5 of 2001	3.2	National Institute of Oceanography	1
20)	5 of 2003	2.1	Review of Technology transfer in Council of Scientific and Industrial Research	2
21)	5 of 2005	6.1	Wasteful expenditure	104
22)	5 of 2005	10.2	Non-installation of Fermentation System	1

Report Number and Year		Paragraph Number	Title	Delay in submission of ATNs (in months)
23)	2 of 2007 (TA)	13.1	Non-recovery of Service Tax	1
24)	22 of 2013	4.1	Public Private Partnership for setting up 'The Centre for Genomic Application' by Institute of Genomics and Integrative Biology	1
25)	29 of 2013	Standalone	Network Projects of Council of Scientific and Industrial Research for Tenth Five Year Plan	10
DEPARTMENT OF SPACE				
26)	CA 16 of 2011-12	19.1	Idle investment on development of Linac tube	1
27)	4 of 2012-13	Standalone	Hybrid satellite digital multimedia broadcasting service agreement with Devas	6
28)	13 of 2012-13	11.1	Avoidable payment of demand charges	1
29)	22 of 2013	3.1	EDUSAT Utilisation Programme	1
30)	22 of 2013	3.3	Loss due to unsafe transport and belated insurance of consignment	6
31)	22 of 2014	Standalone	Management of satellite capacity for DTH service by DOS	1
32)	27 of 2014	4.1	Inordinate delay in realization of SRE-2 mission	6
33)	27 of 2014	4.2	Loss in allocation of satellite capacity	1
34)	27 of 2014	4.4	Infructuous expenditure on procurement of components	1
MINISTRY OF EARTH SCIENCES				
35)	2 of 2007 (TA)	5.1	Wasteful expenditure	36
36)	CA 3 of 2008	7.1	Non-achievement of the objectives of modernizing the Accounting and Personnel Management functions	34
37)	CA 16 of 2008-09	7.1	Construction of residential quarters and hostel units without demand	5
38)	22 of 2013	8.1	Irregular introduction of pension scheme and diversion of funds	15
MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE				
39)	3B of 2001	1.0	Implementation of environment act relating to water pollution	27
40)	CA 16 of 2008-09	6.1	Failure of village tree plantation project	8
41)	22 of 2013	6.1	Repeated unauthorized creation and up-gradation of posts by Central Pollution Control Board	7
42)	27 of 2014	6.3	Wasteful expenditure on hiring of office accommodation	6

Appendix V (Refer to Paragraph 5.1.2.7)

Deficiencies observed in MIS reports of COWAA package of Department of Space

Report	Report No.	Audit Observations
Contingency Advance Register	AC54RNR	While the report generated from COWAA showed 1,043 outstanding cases, there were only 8 outstanding as per manual records. DOS in January 2016 stated that modifications would be carried out based on inputs from domain experts
Imprest Advance Register	AC62RNR	Report generated from COWAA showed 11 entries ranging between the periods 2002 to 2013. Audit examination showed that there were actually 41 imprest holders. The report generated from COWAA showed even names of the staff members who were currently not in service and also names of the persons who were not imprest holders. DOS in January 2016 stated that modifications would be carried out based on inputs from domain experts
Child Care Leave – Leave Account	PGGE03	The report displayed the spells of leave that were cancelled also as having been availed.
Category change merit selection scheme	PGDP09	The report showing the list of employees who were promoted during the period January 2008 to September 2015 under the Category Change Merit Selection Scheme (CCMSS) showed that there were no records. It was however evident from the database that there were cases where officials were promoted under CCMSS during the said period. For example two persons were promoted as Technical officer-C and Technician-A in July 2011 and January 2009 respectively under CCMSS.
Report showing the list of employees who have left the organization	PGGE25	The qualifications of the employees who have left the organisation were shown incorrect in the Report. The Department agreed that the report showed incorrect qualifications.
Review analysis (Qualification wise distribution of promotes/non-promotees)	PGDP08	The report generated for two categories – Promoted and Deferred in respect of the employees who were to move from SCI/ENG-SD to SCI/ENG-SE as on 1 July 2015 showed Nil Report which was not factually correct as seen from manual records.
Report on statistics relating to review of administrative personnel	PGDP04	The purpose of this COWAA MIS Report i.e. information that is generated through this report could not be deciphered. It was observed that report was generating a NIL Report for any date that is selected.
Review Analysis	PGDP07	Audit generated this report by selecting the Parameter – Qualification (B.E/B.Tech) and again by selecting the Parameter – Residency as on 1 July 2015. Audit could not decipher the information generated through these reports. Department did not respond to the audit query.

Report	Report No.	Audit Observations
Statistics relating to review of scientific/technical personnel	PGDP01 and PGDP03	Audit generated the two reports as on 1 January 2015 and 1 July 2015. A study of the PGDP 01 report for the period 1 January 2015 showed that two Senior Tech-A employees were eligible for review and both of them were screened. The data in the report shows that one case was deferred. The report does not show the status of the other employee. Similarly, one Sr. Tech. Asst. A was eligible and screened. The result of the review was not depicted at all. Further, in the report for the period 1 July 2015, five Technician-D were stated to be eligible and screened, but the result was depicted for only four persons. Similarly, the result of one Sr. Technical Attendant A, who was stated to have been eligible and screened, was not printed in the report. To this extent, the report was deficient.
Letter of Credit Status Report	FAC011	Payments towards foreign purchase orders are made through Letter of Credit. It was seen that during the period April-May 2015 itself four LCs were opened. However the report for the period April-December 2015 displayed the message "There are no records with given input combination".
Project line item wise expenditure status with reference to project cost	FAC006	The combo box for selection of project name showed names of projects which had already been closed. The projects PSLV and GSLV were the projects currently active at SDSC, SHAR. However, the report for these projects also displayed the message "There are no records with given input combination".
Finance Module	FAPS01 FAPS02 FAPS03 FAPS04 FAPS05	When these reports were selected, instead of generating the reports, error messages were displayed. DOS confirmed (January 2016) the same.

Appendix VI (Refer to Paragraph 5.2.1)

List of 18 remote Patient end hospitals (Phase-I)

	Name of the Hospital
1)	ISRO Hospital-Sriharikota, Andhra Pradesh
2)	Aragonda Apollo Hospital-Chittoor-Andhra Pradesh
3)	Tripura Sundari District Hospital-Udaipur-Tripura
4)	Chamrajnagar District Hospital-Karnataka
5)	Vivekananda Memorial Hospital-Saragur-Mysore-Karnataka
6)	GB Pant Hospital-Port Blair-Andaman and Nicobar Islands
7)	Car Nicobar District Hospital-Andaman and Nicobar Islands
8)	Leh District Hospital-Jammu and Kashmir
9)	Indira Gandhi District Hospital-Kavaratti-Lakshadweep
10)	Government Health Centre-Pampa/District hospital-Pattanamthitta-Kerala
11)	Guwahati Medical College Hospital-Assam
12)	Cuttack Medical College Hospital-Odisha
13)	Behrampur Medical College Hospital-Odisha
14)	Burla Medical College Hospital-Odisha
15)	Kathua District Hospital-Jammu and Kashmir
16)	Jammu Medical College Hospital-Jammu and Kashmir
17)	Sher-i-Kashmir Institute of Medical Sciences-Jammu and Kashmir
18)	Government Medical College Hospital-Srinagar-Jammu and Kashmir

Appendix VII (Refer to Paragraph 5.2.1)

State wise distribution of Telemedicine nodes under Telemedicine Programme

State/Network		Mobile	Patient End Private	Patient End Govt.	Total PEs	Specialist End	Total Nodes	Phase-1 2001-03	Phase-II 2003-07	Beyond Phase-II 2007-10
1)	Andhra Pradesh	2	7	5	12	4	18	2	8	8
2)	Arunachal Pradesh	-	1	3	4	-	4	-	4	-
3)	Assam	-	1	6	7	3	10	1	2	7
4)	Bihar	-	1	0	1	-	1	-	1	-
5)	Chhattisgarh	-	-	15	15	1	16	-	16	-
6)	Goa	-	1	0	1	-	1	-	-	1
7)	Gujarat	1	1	5	6	3	10	-	1	9
8)	Haryana	-	-	2	2	-	2	-	-	2
9)	Himachal Pradesh	-	1	1	2	-	2	-	1	1
10)	Jammu and Kashmir	-	-	9	9	3	12	5	1	6
11)	Jharkhand	-	1	0	1	-	1	-	1	-
12)	Karnataka	2	8	27	35	14	51	3	23	25
13)	Kerala	2	5	18	23	5	30	3	22	5
14)	Madhya Pradesh	1	1	14	15	2	18	-	1	17
15)	Maharashtra	-	4	33	37	4	41	-	4	37
16)	Manipur	-	-	1	1	-	1	-	1	-
17)	Meghalaya	-	-	3	3	1	4	-	1	3
18)	Mizoram	-	-	4	4	-	4	-	4	-
19)	Nagaland	-	-	2	2	-	2	-	2	-
20)	Odisha	-	1	8	9	1	10	3	-	7
21)	Punjab	-	-	6	6	1	7	-	4	3
22)	Rajasthan	-	-	38	38	2	40	-	16	24
23)	Sikkim	-	-	2	2	-	2	-	1	1
24)	Tamil Nadu	8	10	1	11	9	28	2	4	22
25)	Tripura	-	-	5	5	-	5	1	3	1
26)	Uttarakhand	1	1	2	3	-	4	-	1	3
27)	Uttar Pradesh	-	2	0	2	1	3	1	-	2
28)	West Bengal	1	2	4	6	3	10	1	-	9
29)	Andaman and Nicobar Islands	-	-	12	12	1	13	2	2	9
30)	Diu, Daman, Silvassa	-	-	3	3	-	3	-	-	3
31)	Lakshadweep	-	-	5	5	-	5	1	4	-

State/Network	Mobile	Patient End Private	Patient End Govt.	Total PEs	Specialist End	Total Nodes	Phase-1 2001-03	Phase-II 2003-07	Beyond Phase-II 2007-10
32) New Delhi	-	-	0	0	3	3	2	-	1
33) Pondicherry	-	-	4	4	1	5	-	5	-
34) Central Government Hospitals	-	-	16	16	2	18	-	13	5
Total	**18**	**48**	**254**	**302**	**64**	**384**	**27**	**146**	**211**
35) Monitoring Nodes	-	-	-	-	-	5	-	3	2
Grand Total	**18**	**48**	**254**	**302**	**64**	**389**	**27**	**149**	**213**

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