

GOVERNMENT OF ANDHRA PRADESH
ABSTRACT

RWS&S –Study and preparation of effective O&M plans for Drinking Water Supply Schemes -
Functioning of Rural Water Supply Schemes – in O&M Policy - Accorded – Orders - Issued.

PANCHAYAT RAJ AND RURAL DEVELOPMENT (RWS.I) DEPARTMENT

G.O.Rt.No. 2290

Dated: 20-12- 2012.

Read the following:-

From the ENC RWS&S Lr.No: AEE3/Plg/Dep PR to RWS/2012,
dated 11-10-2012 and 01.11.2012.

ORDER:-

In the reference read above the Engineer-in-chief, Rural Water Supply and Sanitation Department, Hyderabad has furnished certain proposals on O&M Policy on the functioning of Rural water Supply Schemes.

2. Government after careful examination of the proposals hereby approve the O&M Policy which is annexed to this GO.
3. The Commissioner, Panchayat Raj, Hyderabad and Engineer-in-Chief, RWS&S, Hyderabad, are requested to issue detailed orders for each of these components under intimation to Government.
4. This G.O. is issued in concurrence with Panchayat Raj & Rural Development department.
5. A copy of this order is available on the internet and can be accessed at the address – <http://www.ap.gov.in/goir>

(BY ORDER AND IN THE NAME OF THE GOVERNOR OF ANDHRA PRADESH)

VIKAS RAJ
SECRETARY TO GOVERNMENT

To

The Engineer-in-Chief, Rural Water Supply and Sanitation Department, Hyderabad.(we)
The Accountant General, AP, Hyderabad. (we)
The Senior Dy. Accountant General, (LABA), O/o Accountant General, AP, Hyderabad(we).
The Director of Accounts, Works and Project, M.J.Road, Nampally, Hyderabad (we).

Copy to:

The Secretary, DDWS, GOI, New Delhi .(we).
P.S. to M (PR&RWS) .(we).
P.S. to Secy(RWS&S) (we).
RWS-I, RWS-II-A, RWS-III Sections in this Department (we).
SF/SC

INTRODUCTION:

There are 525 No. of CPWS Schemes in the state as on 1.4.2012, serving 10000 habitations covering a population of about 2.00 Crore

In accordance with 73rd Constitutional Amendment, the responsibility of operation and maintenance of all RWS assets was entrusted to the local bodies vide G.O.Ms No. 569, dated 22.12.2007 of Panchayat Raj and Rural Development RWS-I Department. The Operation and Maintenance of all the CPWS Schemes in the districts is vested with the concerned Zilla Parishads as per the above Govt. Orders.

An amount of about Rs 100.00 to 125.00 crores are being supplemented every year to the Zilla Parishads by the Commissioner, P.R. towards the O& M of the C.P.W.S. Schemes, these funds are met from the Twelfth Finance Commission Grant during the years 2005-06 to 2009-10. From 2010-11 onwards, funds will be provided under 13th Finance Commission grant.

As per the above GO, the RWS department will extend technical support to the Zilla Parishads in O&M of the CPWS Schemes. But in practice, majority of the responsibility of O&M is being shared by RWS&S Department.

The various activities of O&M include,

- Getting Administrative Sanction,
- technical Sanction to estimates
- calling of tenders,
- entrustment to agencies,
- payment of electricity charges/Metro charges etc.,
- chlorination/disinfection,
- repairs and renewals
- getting funds from ZPs

Superintending Engineers are facing many problems in getting the administrative sanctions and release of funds from Z.Ps which is other way affecting the regular works programme.

Though sufficient funds are provided for O&M of CPWS Schemes (as per the norms fixed vide G.O.Rt.No.462 Dt.25-2-2007of P.R &RD (RWS-I) Dept.,) the quality and performance is not up to the satisfactory level in many cases due to the following reasons.

1. Unhealthy competition amongst contractors.
2. Abnormal less tenders (about 50% less in some cases)
3. Improper security arrangements near head works, intermittent Stations leading to access for unsocial elements
4. Water is drawn from HMWS board for certain CPWS Schemes in Districts like Ranga reddy, Medak. In such cases the board is charging @ Rs.10/- per K.L. The HMWS board is frequently pressing the RWS dept. to clear the dues which are supposed to be paid by the ZPs.
5. Power due to Transco has become an issue. The tariff levied by the TRANSCO is not uniform across the State. It is being charged from Rs.0.35 to Rs.4.20 per unit.
6. The Electronic media, press and public are holding RWS& S Engineers responsible for any small hindrance in supply of water.
7. No separate staff for effective supervision and regular monitoring
8. Frequent disturbances from system staff.

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I. Present System:

The operation and maintenance aspect of CPWS Schemes mainly consists of the following items.

1. System Staff
2. Chemicals
3. Power charges and
4. Repairs and renewals.

1) System staff:

System staff, repairs and renewals are being entrusted (payment on service delivery) to the contractors on tender basis. But the contractors are not paying minimum wages and other benefits to the workers viz; insurance, provident fund etc; as per labor laws. They are withholding lion share of wage component and depriving the workers from the benefits.

The system staff working on the CPWS Schemes are frequently representing to the Dept. to pay time scales and save them from the clutches of the contractors. They have even staged dharnas etc; with the support of political parties in front of the RWS Circle/ E-in-C offices.

2) Chemicals:

Regarding disinfection, a rate contract agreement was evolved for procurement of liquid chlorination, mixing and testing of liquid chlorine at tail end point and cross verification by village secretary/sarpanch including maintaining log book for Quality and Quantity based on which payment to be made for the year 2008-09. The field officers used to follow the system liquid chlorine as per the rate contract. After expiry of the rate contract, there is no uniform procedure for procurement of either bleaching powder or liquid chlorine for disinfection. It is also observed that the materials are being purchased without following the prescribed procedures and standards. The S.E.s are calling tenders and fixing the rates locally. Which are totally against guidelines issued. Several complaints are coming from various firms about the genuineness of the rates and quality of the bleaching powder / liquid chlorine.

3) Repairs and renewals:

Repairs and renewals are also not being carried out properly and there is no proper accountability in the field.

To overcome the above problems there should be a defined system in place for the O&M of CPWSS as being done in SSSWS projects in 5 districts as illustrated below.

Operation and maintenance of 34 Sri Satya Sai water supply projects in 5 Districts viz; Ananthapur, Mahabub Nagar, Medak, East and West Godavari District has been entrusted to Sri Satya Sai water supply Boards constituted vide following G.O.s

- Ananthapur district vide G.O.MS.No.344 Dt.16.09.1977
- Medak district vide G.O.MS.No.267 Dt.25.08.2001
- Mahabubnagar district vide G.O. MS. No.268 Dt.25.08.2001
- East Godavari & West Godavari Districts vide G.O.MS.No. 186 Dt.9-5-2007

(contd...)

The composition of the Committee is as follows.

- | | | |
|--|---|------------------|
| 1. Collector & District magistrate | - | Chairman |
| 2. Nominee of Sri Satya Sai central trust | - | Member |
| 3. Sri R. Kondala Rao, E-N-C,(P.R) retired | - | Member |
| 4. Project officer , ITDA, concerned district | - | Member |
| 5. Superintending Engineer, Irrigation Dept . | - | Member |
| 6. Superintending Engineer, AP TRANSCO | - | Member |
| 7. Chief Executive Officer, Z.P, Concerned district | - | Member |
| 8. District Panchayat officer, concerned District | - | Member |
| 9. 5 Sarpanchas including two from the tail end Villages of branches (for a period of two years on rotation basis) | - | Member |
| 10. Superintending Engineer, (RWS) of concerned District | - | Member Secretary |

These boards are autonomous bodies having full powers to take decision in operation and maintenance of the project and to carryout the improvements required from time to time. The Govt. will release 70% of the maintenance cost to the Board and the balance 30% will be provided by the Board from district resources and from users etc.

The O&M of SSSWS projects are being maintained by the L&T company since formation of the Boards who are paying the rates of labour and staff etc; on their own pattern. All allowances like Provident fund, LTA, Medical reimbursements, furniture, vehicles like jeeps, motorcycles, rents for offices, freight charges, communication net works, site accommodation, stationery, maintenance of office, staff quarters, out of pocket allowance etc. are being paid. It is observed that the O&M by L&T of high quality and rendering best service to the people.

In addition to present system of O&M by Z.Ps, Multi Village Scheme Water Supply Committee (As per G.O.No.318 PR&RD Dt.28-10-2009) will be responsible for MVS projects in World Bank supported districts.

The structure of the committee, it's roles and responsibilities are illustrated in the coming paras.

Thus there are three different systems of O&M of CPWSS in the state as follows.

1. By Zilla Parishads
2. By Satya Sai water Supply Boards
3. By Multi Village Scheme water Supply Committees in World Bank aided Projects.

Therefore it is felt that a uniform system may be adopted in all districts in the same lines of World Bank aided projects which has already been approved by the Government with the consent of Hon'ble Chief Minister. All the aforesaid anomalies can be addressed by empowering the user committees to deal with all matters.

As per the NRDWP guidelines also, the State Govt., and / or its agencies public utilities may shoulder the responsibility of bulk metered transfer of water, its treatment and distribution up to the village, whereas inside the village, it is the PRI or its sub-committee i.e., Village Water and Sanitation Committee (VWSC)/ Pani Samithi that is to take over the responsibility for in-village drinking water management and distribution.

II) MVS:

Finally the following committees as constituted for World Bank programme may be brought in to place in all the districts for effective O&M of RWS assets.

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A) Structure of the committee:

a) Composition of Multi Village Scheme Water Supply Committee (MVS-WSC)

Position	Set up
Chairman	Zilla Parishad President (or his nominee who should be an elected representative to the ZP)
Vice Chairman	ZPTC (of Mandal where source is located)
Members	Chairpersons from participating GPs (on rotation basis for one year in alphabetical order - 5 nos.)
Secretary	EE, RWS
Member	ZPTC (other Mandal (s))
Member	Representatives of SHG/ Youth Group/ Citizen (1/3rd of the members shall be SC/ ST, 1/3rd of the members shall be women. Minimum number of members – 8)

b) Roles and Responsibilities of MVS-WSC

- i. Issue written orders that would be the legitimate directions for undertaking O & M of the scheme
- ii. Decide tariff for water supply
- iii. In case of public complaints, measure the quantity of water supply at any of the connection locations as it deems appropriate
- iv. Arrange materials required for undertaking minor repairs for the scheme
- v. Undertake collection of water charges, unless it is specifically delegated to the Private Operator
- vi. Supervision and Monitoring of the Private Operator's work
- vii. Verify village-wise log abstract of water supplied to the village, maintained by the Private Operator
- viii. Responsible for payment to the Private Operator from money collected from villages or from its own or ZP's resources
- ix. Make payments for power supply charges of the scheme
- x. Review the Maintenance Reports and inspect the Water Supply and Distribution Assets at least once in every three months
- xi. Prepare Inspection Report of all inspections undertaken
- xii. Regularly inspect and thoroughly verify the scheme and all records, registers and water analysis reports
- xiii. Impose penalties for various types of lapses of the Private Operator
- xiv. Settle disputes that may be submitted by any of the parties through arbitration and in accordance with this Agreement
- xv. Set "complaint redressal benchmarks" within the first 6 months of the commencement of Agreement (e.g. time taken to respond) and monitor the Private Operator's compliance with those standards

c) Recommendations of CPWSS

1) Funds:

Funds for O&M of CPWS Schemes shall be released by the Govt. in time. In case of any delay, the ZP may be authorized to incur the expenditure for the O&M from any available grant subject to reimbursement. ZP shall release the O&M grant to the respective MVSWSC /EE for making payment of O&M bills.

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2) Sanction of O & M estimates within time frame

- O & M estimates to be prepared by November end for according administrative sanction.
 - Review & sanction by the Z.P (standing committee and general body) by January end
 - Tender process and entrustment by March-end
1. Preparation of uniform tender schedules with specific conditions (including reporting formats to be maintained) on quality, quantity, minimum wages, minimum qualification for operators including penal conditions
 2. Delegation of powers on technical sanction
 - Up to Rs. 50.00 lakhs EEs
 - Above Rs. 50.00 lakhs to SEs
 - (since the estimate contains salaries power tariff and other consumables)
 3. Provision of technical personnel in Z.P to take over the schemes and maintain Assets register. (As technical assistant to C.E.O, Z.P)
 4. Uniform O&M manual specifying records and registers to be maintained.
 5. If MVS is multi-mandal / multi- district and major MVS separate division is required for O&M
 6. Formation and active functioning of VWSC / MWSC in monitoring schemes. VWSC which is a sub committee of Gram Panchayat and MVSWSC is a sub committee of Zilla Parishad be functional. MVSWSC which is responsible for payment to the private operator as the furnishing of the bills by the private operator with proof of payment towards PPF, insurance etc., to the operator.
 7. For effective and efficient O&M SCADA system may be provided
 8. Per capita Cost to be enhanced from Rs. 65/- to Rs. 85/-
 9. Review of per capita cost every 2 years
 10. Wherever HMWS & S water is taken, additional amount is to be provided in addition to the regular maintenance grant.
 11. Fixation of uniform rate for chlorine gas / bleaching powder / alum; rates for these items to be included in SSR
 12. Systemization of uniform rates for procurement of pumps / spares
 13. Uniform power tariff policy and category LT VI(B)/ HT IV(C) to be adopted
 14. Bulk water meters at OHSRs at habitation to be provided
 15. Enhancement of service level from 40 LPCD to 70 LPCD (to cater to house connections)

(contd...)

16. Formation of pipeline protection committees for all MVSS consisting of local SI, MRO / MDO / Sarpanch of GPs, Panchayat Secretary and AE / AEE of RWS
17. Since lack of provision for compensation to land acquisition for Major pipelines wherever there is breakdown, landowners are objecting for immediate repairs. Hence provision for land acquisition is required
18. Payments to O&M contractor shall be made based on the certification of habitation level committee I.e. VWSC that the required quantity of water with desired quality is supplied on daily basis
19. Sanctions for special repairs / renewals to be made for every 3 years based on the actual requirements
20. Performance-based entrustment
21. At mandal level, a technical person on outsourcing basis shall be put in place with toll-free number to receive complaints on water supply
22. For all major CPWS schemes, exclusive sub-divisions have to be created

III) SVS:

A) Composition of Grama panchayat Water and Sanitation Committee (GP-WSC)

Position	For Plain areas	For Tribal areas
Chairman	GP Sarpanch	GP Sarpanch
Members	Elected ward members of participating village	Elected ward members of participating villages
Secretary	GP Secretary	GP Secretary
Member	Representatives of SHG/ Youth Group/ Citizen 1/3rd of the members shall be SC/ ST 1/3rd of the members shall be women Minimum number of members – 8 Maximum number of members – 12	Representatives of SHG/ Youth Group/ Citizen 50% of the members shall be ST 1/3rd of the members shall be tribal women Minimum number of members – 8 Maximum number of members – 12

B) Roles and Responsibilities of GPWSC

- a) Issue written orders that would be the legitimate directions for undertaking O & M of the scheme
- b) Decide tariff for water supply
- c) In case of public complaints, measure the quantity of water supply at any of the connection locations as it deems appropriate
- d) Arrange materials required for undertaking minor repairs for the scheme
- e) Undertake collection of water charges, unless it is specifically delegated to the Private Operator
- f) Supervision and Monitoring of the Private Operator's work
- g) Verify village-wise log abstract of water supplied to the village, maintained by the Private Operator

(contd...)

- h) Responsible for payment to the Private Operator from money collected from consumers or from its own or GP's resources
- i) Make payments for power supply charges of the scheme
- j) Review the Maintenance Reports and inspect the Water Supply and Distribution Assets at least once in every three months
- k) Prepare Inspection Report of all inspections undertaken
- l) Regularly inspect and thoroughly verify the scheme and all records, registers and water analysis reports
- m) Impose penalties for various types of lapses of the Private Operator
- n) Settle disputes that may be submitted by any of the parties through arbitration and in accordance with this Agreement
- o) Set "complaint redressal benchmarks" within the first 6 months of the commencement of Agreement (e.g. time taken to respond) and monitor the Private Operator's compliance with those standards

C) Recommendations of Single Village Schemes

1. Qualitative Water and Sanitation Committee to be established
 - a. Sarpanch as Honourary President
 - b. Ward Members 4 nos
 - c. Representatives from SHGs, Youth Groups, Woman groups 7nos
 - d. Panchayat Secretary Convener & Joint account holder
2. State Government should share O&M costs to sufficient level in addition to the 13th Finance Commission funds.
3. Collection of user charges should be made mandatory by a Government order/act.
4. Schemes should be designed for 70 lpcd or to the satisfaction levels considering the cattle demand.
5. Storage structures should be designed for full demand keeping in view of power supply.
6. Pumps and pump sets to be designed for 7 Hours (or extent of availability of power supply) or Dedicated power lines should be provided.
7. Effective Distribution system should be designed.
8. Actual hours of distribution
9. 100% house connection
10. All house connections should be metered.
11. All amenities as per labour laws should be paid/to the O&M Staff.

D) Roles and Responsibilities of DWSC

- a) To provide all technical, social, financial, organizational and managerial support to successfully implement the Program
- b) Supervision and Monitoring of the Private Operator's work
- c) Make payments to Private Operator, in case of default by MVS-WSC
- d) Solve any dispute arising between the Private Operator and MVS-WSC under this Agreement
- e) Settle disputes that may be submitted by any of the parties through arbitration and in accordance with this Agreement

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E) Roles and Responsibilities of Private Operator

- a) To provide all routine maintenance, periodic maintenance, breakdown maintenance, preventive maintenance, staffing and providing labour for operating the water supply and distribution assets, investigation, engineering, procurement, delivery, installation and other activities incidental to the Operation and Maintenance of MVS. Detailed services to be performed by the Private operators.
- b) To maintain service levels as mentioned in the Agreement
- c) Rectification of all consumer grievances and complaints
- d) Maintain village-wise log abstract of water supplied to the village
- e) Maintain records and accounts provide reports and other information required from time to time
- f) Undertake all such activities that will enable him to successfully discharge his function under the agreement
- g) Settle disputes that may be submitted by any of the parties through arbitration and in accordance with this Agreement.

IV) RWS&S Divisions:

The RWS&S Divisions (Engineering Wing at the district level including Superintendent Engineer / Executive Engineer) will be responsible for designing and implementing the MVS in partnership with the MVS-WSC. All design, supervision or operational activities will be undertaken through an agreement between the RWSSD, DWSC and MVS-WSC. The MVS-WSC will sign off on all activities related to the MVS. The DWSC can also select the RWSSD Engineering Wing to provide engineering support, through a service contract agreement.

V) Zilla Parishad:

The ZP through its sub-committee MVS-WSC (one for each MVS) will be responsible for management of common facilities of MVS.

VI) Technical Service Providers (Engineering Support):

RWS&S will provide technical support to DWSC and if found necessary DWSC will have the option to recruit Private Technical Service Providers (TSP). In either case, the RWS&S Department or private TSP will be accountable to the DWSC and the concerned GP through a service contract agreement, for which specific proforma should be approved by the Engineer-in-Chief, RWS&S, Hyderabad.

VII) Contributions to O&M Cost:

The O&M cost for all investments (SVS and MVS) will be fully recovered through user charges, subject to an affordability ceiling. The O&M charges for all new schemes will be fixed prior to the commencement of the scheme.

For MVS, the DWSC will decide the bulk water charges prior to approval of the MVS. In case of high cost schemes, the amount exceeding household affordability level (Rs.45/- per month) will be subsidized by the GP for SVS and ZP for MVS. Suitable subsidy will be borne by Govt for the SC and ST beneficiaries.

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Accordingly, the 13th Finance Commission Grant going to be released from the current year 2012-13 may be transferred directly to these committees by Commissioner PR through ZPs.

These committees shall be autonomous and vested with full powers to take care of O&M of CPWS schemes. The committees shall engage required personnel on out source basis except the team managers who can be of the rank of DEE or AEE based on the cost of the project who shall be posted by the Engineer –In- Chief, RWS&S.

It is suggested that for the projects costing more than Rs 100 Crores where the O&M cost is above Rs 5 Crore, one Project Manager in the rank of Dy.Executive Engineer and for the Projects costing less than Rs 100 Crores, one project manager in the rank of the Asst. Executive Engineer may be appointed. All other employees can be engaged on outsourcing as per need assessed by the Committees subject to ceiling limits appended.

The following general conditions may be imposed on the Committees to avoid legal litigations.

- The skilled or unskilled workers already working in CPWS Schemes in the State as on 1.4.2010 may be taken stock of based on requirement and as per instructions issued by Government from time to time.
- Required additional skilled or unskilled workers may be taken on out sourcing as per CPHEEO Manual.
- Wages to Skilled or unskilled workers may be adopted duly keeping in view the minimum wage act and other labour laws. Minimum wages may be considered for all eligible workers.
- Facilities like PPF, insurance, medical reimbursements etc., may be adopted as applicable.
- Roles and responsibilities for every person shall be defined and accountability fixed.
- Identity cards shall be given to all workers in the periphery of the CPWS scheme to screen unidentified persons.
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In case of any improper maintenance of the schemes, the D.W.S.C may intervene and set the things in right path duly taking necessary corrective steps.

The DWSCs shall have full powers and autonomy to decide about policy matters within frame work of rules governed by the state government.

RECOMMENDATIONS:

- Periodical maintenance as to be performed as per the schedule mention in the **ANNEXURE -II**.
- Over and above all the re commendations specified for each CPWS Scheme it must have a separate **Operation Manual** which deals with day to day operations of the Scheme shown at the **ANNEXURE -III**
- Separate O&M Divisions and sub divisions will be under the administrative control of Zilla Parishads , and answerable to both SE,RWS&S and ZP concerned on technical and administration matters respectively.
- One Chief Engineer in the O/o the Engineer-in-Chief, will look after O&M.
- The structure of O&M Division in each district to be established will be submitted by the Engineer-in-Chief, RWS&S, Hyderabad, separately duly proposing staff on out – sourcing basis if need be.

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- Each scheme should have an operating manual. Engineer-in-Chief, RWS&S, Hyderabad will issue model O&M operating Manuals for SVS and MCS as per GOI and State Government norms within 15 days.
- The maintenance plans for each scheme, including the Single Village and Multi village schemes VLOM and other hand pumps, a detailed preventive and predictive maintenance plans and operational process shall be evolved, based on the site specific maintenance tasks, schedules and operation process duly considering the experiences and best practices.

The comprehensive operation and maintenance plans and check lists include the following

- Periodic Maintenance Tasks and Check lists-pumped and pipes schemes and its components (Daily/Monthly/Yearly/pre and post monsoon checks/special checks etc): civil pump sets and electrical works.
- O&M of VLOM pumps
- Monitoring of Scheduled maintenance
- Maintenance status-display Boards
- Emergency and risk mitigation plans
- Tools and Equipment for Maintenance Operations, etc.
- Operation and Maintenance Manuals and Hand books
- Records of Operation of facility on installation
- Maintenance charts and Operation guidelines)
- Every year in January-March quarter a detailed O&M estimate including periodical maintenance if any for the next financial year should be prepared for each scheme and the requirement compiled to calculate budget requirement under O&M for the next financial year. Funds available from all sources including General funds of ZP/MPP/GP should also be considered for this in addition to water tariff collections. Requirement over and above these funds should be posed to State Government for support.
- The agreement between local body and the O&M contractor will be based on the standard Model communicated by Engineer-in-Chief, RWS&S, Hyderabad and shall cover service levels required to be maintained and its monitoring mechanism in addition to customer grievance redressal mechanism . To provide information on status of supply and scheme (including maintenance position), adopting a comprehensive O&M monitoring software tool is necessary . The Engineer-in-Chief, RWS&S, Hyderabad shall get this developed.
- Providing Longer duration of maintenance periods in construction and maintenance contracts.

It is recommended to provide for a defect liability period of at least 5 years for general schemes and up to 15 years in major projects on their completion, in the agreements with the construction and manufacturers, instead of 1-2 years normally provided now. In such cases, it shall also include all the related the preventive maintenance

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for the entire period, as a part of construction and supply contracts contract. This provision result in ensured quality construction , scientific maintenance and thus efficient product delivery to the best satisfaction of community.

Secondly in procuring pump sets and allied machinery, it is much preferred to select them having high standards and proven performance and, who normally offer longer periods of warranty and guaranty. Such agencies shall also be entrusted with the job of scheduled regular maintenance and up keeping of the supplies beyond the warranty periods of minimum for 5 years or preferably for the entire designed life.

Similar condition shall also be made applicable to the external QC agencies also, duly incorporating penalty and liquidation damages for any deficiencies up to say, 50% . These enable the TPQCs and Construction contractors to establish best quality and save O&M costs and penalties. It is required to provide suitable conditions of agreement including Penal clauses, accordingly, to establish accountability of the associated QC agencies also.

➤ Social Audit

The social audit on all the aspects including O&M shall be strictly adhered and findings displayed and discussed. Accordingly the plans shall be revived to ensure optimum serice delivery with cost economics. The process could be designed on similar systems and guidelines adopted in respect of MGREGS and other reputed agencies, considering the improvements needed based on their experiences.

➤ Improved facilities for field engineers

The Department shall ensure to provide basic amenities like, communication, transportation, etc. to enable them to associate with community and PRIs for effective service delivery. It may also be required to have software facilities to review and plan of O&M of all the facilities and to render timely advise and to overcome the problems.

ANNEXURE-II

Periodical Maintainance of CPWS Schemes

S. No	Period	For Scheme Costing Rs 0 Crores to 10 Crores	For Scheme Costing 10 Crores and upto 50 Crores	For Scheme Costing 50 Crores and upto 100 Crores	For Scheme Costing 100 Crores and above (600 crores)
1	<u>For 5 years periodical Maintenance:-</u> Replacement of All Valves inside Pump house, Spares of Transformer, Renewals of Media	0.3% of Project Cost + 6% Growth rate for every year (Max Rs 4.02 Lakhs)	0.15% of Project Cost + 6% Growth rate for every year (Max Rs 10.05 Lakhs)	0.10% of Project Cost + 6% Growth rate for every year (Max Rs 13.40 Lakhs)	0.10% of Project Cost + 6% Growth rate for every year (Max Rs 80.40 Lakhs)
2	<u>For 10 years periodical Maintenance:-</u> Replacement of Filter Medical Valves inside Pump house, Spares of Transformer and Air Valves in pipe line	0.4% of Project Cost + 6% Growth rate for every year (Max Rs 7.16 Lakhs)	0.20% of Project Cost + 6% Growth rate for every year (Max Rs 17.90 Lakhs)	0.20% of Project Cost + 6% Growth rate for every year (Max Rs 35.80 Lakhs)	0.15% of Project Cost + 6% Growth rate for every year (Max Rs 161.10 Lakhs)
3	<u>For 15 years periodical Maintenance:-</u> Replacement of Filter Media, Valves inside Pump house, Spares of Transformer and pump sets	1.00% of Project Cost + 6% Growth rate for every year (Max Rs 24.00 Lakhs)	1.00% of Project Cost + 6% Growth rate for every year (Max Rs 120.00 Lakhs)	1.00% of Project Cost + 6% Growth rate for every year (Max Rs 240.00 Lakhs)	1.00% of Project Cost + 6% Growth rate for every year (Max Rs 1440.00 Lakhs)

The above amounts are indicative and provision should be made as per actual requirements.

ANNEXURE-III
Activities in operation and Maintenance of CPWS Schemes

Sl.No	Workmen	Daily	Weekly	Fort Night	Monthly
1	Pump Operator	<p>Check for water level. Minimum level above the foot valve should be 1.5 times the dia. Of foot valve. If level is less the fill the sump up to required level and start the pump.</p> <p>Check for inflow. Ensure sufficient inflow is available to maintain the required water level.</p> <p>Suction valve to be in open position.</p> <p>Delivery valve should be in closed position and by pass to sump to be in open position.</p> <p>Remove air pockets by opening the air release valve.</p> <p>Check the voltage in 3 phases. The range of voltage for pumping is 380-460V. And the allowable maximum phase difference is 12V. If the voltage parameters are not in the above set range, do not start the pump.</p> <p>Switch on the capacitor if voltage is below 440.</p> <p>Record the water level at the sump every one hour.</p> <p>Checking of Voltage, Amps and pressure gauge for every one hour.</p> <p>Maintaining the pump daily Log book at the pumphouse as per the enclosed format.</p> <p>Recording the power disturbances as per the enclosed Format</p> <p>Recording the APSEB Meter reading LT/HT as per the enclosed format.</p> <p>House keeping at the pump house</p> <p>Earth pit watering</p>	<p>Cleaning of Pumps, Motors, Panel boards, Transformers, Substations etc.,</p>		

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