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Policy Letter No 04/2007

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21305/STP/P&S/ 86 /MAP

05 Mar 2007

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…….
(DG MAP List A, B & C)

PROVISION OF SEWAGE TREATMENT PLANTS (STPs) IN MAP

1. Further to our policy letter No 21305/STP/P&S/55/MAP dated 26 Dec 2005 and feedback received from EAs. Minor modifications to the policy letter have been carried out as given below.

2. In MAP, our endeavour has been to adopt modern, established and cost effective technologies/ product so that value for money and maximum satisfaction to users is provided. With a view to adopt most suitable technology for treatment of sewage/ type of sewage treatment plants, a meeting was held with all Executing Agencies, Consultants and their PHE specialists on 27 Sep 05. Policy guidelines emerged after deliberations in the meeting, are given in subsequent paragraphs.

3. As far as possible, sewage load of MAP pockets should be integrated with existing sewage system by planning, designing the sewer network accordingly. However, if no central sewage system is in existence or it is established that existing system is not functioning to requisite norms and cannot be rehabilitated due to complexities; then for viable population load, rather than providing age-old oxidation ponds which demand larger areas besides transporting the sewage to long distance isolated areas; it is considered to provision small capacity modern STP's which can be maintained easily and can be located close by. The same would also enable re-use of treated wastewater for arboriculture. While planning the STPs, efforts will be made to integrate existing sewage load of adjoining DUs/Pockets, so as to enhance the efficiency of system, besides enhancing cost benefit ratio.

4. To standardize the provisioning of STPs, it was decided that for viable population load of 1800 persons and above; aerobic systems-attached growth process, moving bed reactor technology, be adopted in MAP. These systems require low hydraulic detention time, obviate recycling of sludge and provisioning of sludge digester.

Contd 2/-

5. **Ingredients for STP**. The STP's provided in MAP shall satisfy under mentioning QRs: -

(a) Effluent parameter should be well within pollution norms laid down by Central Pollution Control Board/State Pollution Control Board, whichever is more stringent. BOD, suspended solid and coliform removal should be strictly achieved as per norms, so that the treated wastewater is safe for recycling/arboriculture, with low chlorine dosages of 4-5 ppm. Besides other quality parameters, effluent quality should strictly satisfy following standards: -

PH -		7.0 - 8.0
BOD -	$\leq$	30 mg/litre
COD -	$\leq$	250 mg/litre
Total Suspended solids	$\leq$	100 mg/litre
Coliform Count	$\leq$	10^3 MPN/100ml

(b) Treatment system should be simple in operation without the requirement of qualified/specialist staff and without the requirement of monitoring technical parameter as PH, MLSS, SVI, F/M ratio. The treatment plant should be operational, preferably with one skilled mechanic and helper to achieve the above laid down parameters. Tertiary treatment is not required.

(c) STP should have low capital cost, low O&M cost, low power consumption and low life cycle cost considering a period of 30 years.

(d) System should be compact with low land area requirement for STP with the provision for expansion without disturbing existing arrangements. However, the system should be able to accommodate additional loads upto 20%. Except for the pumps and blowers, the system should preferably not have moving mechanical parts.

6. **Contracts for STP**. Provision of STP is a specialist work and therefore proper specification and makes need to be given for the STP, so that the quality at site is not diluted. The selected OEMs or their authorized firms should have good track record and should have designed, constructed and erected at least five numbers of moving bed bio-reactor plants, each of 0.5 MLD capacity and above, in the last five years, functioning satisfactorily in the country; along with certified confirmation that effluent pollution norms are being fully satisfied by these STPs. The firm should be able to undertake operation and maintenance of STP with trained staff for a period of two years.

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7. **Contract Agreements (CAs)**. The CAs will include construction, commissioning, operations and maintenance and defect liability period (DLP). The EAs will enter in to contract with the executing firms as per their contract procedures in vogue. However, while preparing the specification for O&M, proper clause/ schedule for the periodical checking of the plant oiling, greasing, routine maintenance and consumables for the same will be included in the scope of the contract. FOL/ electricity for operation of the STP may be provisioned to be given by the department.

8. **O&M for STP.** The contract for construction and commissioning of STP shall include two-year operation and maintenance of the STP by the executing firm and reuse of recycled water for arboriculture purposes.

9. **Scope of STPs**. The scope of work shall optimally include the following :-

(a) Construction / provision of sump and pump house with equipment, within STP complex.
(b) Pre treatment to include provisioning of screens, grit chamber and bypass arrangement, for all units.
(c) Biological treatment unit - i.e. moving bed reactor and aeration equipment.
(d) Secondary clarifier including facility for removing digested sludge.
(e) Chlorination of effluent and arrangements for disposal of treated effluent by pumping / gravity.
(f) Provision of sludge drying beds.
(g) Provision of minimal testing facilities as BODs; suspended solids; PH.
(h) Civil construction to include operator room with toilet, boundary wall with gate and other essential provisions, provision of DG sets along with DG set room to provide standby power arrangement.
(j) The firm will take up works as a 'turnkey' project, to include all aspects of construction alongwith operations and maintenance for the requisite period. The responsibility of inclusion of all aspects of the project will rest with the EAs/PMs/GEs alongwith the DEPMCs, through the stations.

10. Executing Agencies / Consultants / Project Manager and Technical Advisor would ensure that reputed firms with sound credentials are encouraged to undertake the STP work. Quality in construction and quality in performance are of paramount importance; hence mandatory tests for assuring qualitative standards shall be carried out regularly and record of the same shall be maintained. Performance feedback shall be submitted by Project Managers/Technical Advisors during execution and defect liability period. Defects/discrepancy, difficulties noticed shall also be promptly reported to HQ DG MAP for considering continuation of the products for MAP Phase-II or otherwise.

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11. Executing Agencies and Planning Teams of DG MAP are requested to consider incorporation of Moving bed reactor STPs for viable population load, in the project DPRs. For projects where DPRs are approved, provisioning may please be ensured at tender stage. For projects where contracts have been concluded, changes may be carried on case-to-case basis depending upon contractual implication, financial health of the project in consultation with Planning Teams of DG MAP.

12. This letter modifies the previous policy issued vide our letter No 21305/STP/P&S/55/MAP dated 26 Dec 2005, which stands superseded.

(Aalok Sood)
Col
Dir (Policy & Standardization)
for DG MAP

Internal

Plg Team 'A'
Plg Team 'B'
Contract Section Plg Team A
Contract Section Plg Team B
\- for information and necessary action please.

Copy to:-

CPWD - Please refer your letter No 23(1)/MAPC/BTI/06/151 dated 04 Jul 2006 and 23(866)/CE (NZ-III)/EE(P)-II/2006/297 dated 30 Aug 2006.