

Minutes of Meeting # 5A

Project : Development of STPs and TTP Projects along with associated infrastructure in Mathura under Hybrid Annuity based PPP mode, Uttar Pradesh

Date : 28th November 2018

Location : 1st floor, Conference hall at the office of National mission clean ganga, New Delhi

List of Attendees:

1. Dr. Praveen Kumar, Director, TIII, NMCG, New Delhi
2. Shri. Madhav Kumar, SEFAE, NMCG
3. Mr.Maharaj Singh, Project manager (D&SU), UP Jalnigam, Mathura
4. Er. Deepak Chauhan, Project Manager (E&M), UP Jal Nigam, Agra.
5. Er. Waseem Athar, Project Engineer, UP Jal Nigam, Mathura.
6. Mr. A.Srinivasan, General Manager – MACE
7. Mr. Syed Abbas Ibrahim, Senior infrastructure specialist, MACE
8. Mr.M.jayakrishnan, Project Engineer, MACE
9. Mr.A.N.Singh, COO, Triveni
10. Mr.K.C.Agarwal, GM, Triveni
11. Mr.A.D.Gupta, Addl.GM, Triveni
12. Mr. Kailash chand Dhawan, AGM - Triveni
13. Mr.Yogesh Mann-AGM-Triveni
14. Mr.Sajeev Rao Kulkarni, AGM, Triveni
15. Mr.Sunil Bhargava, Process Engineer, Triveni
16. Mr.Gopal Mani jha, Manager (contracts), Triveni
17. Mr.Deep Sagar Tiyaagi, Dy.Manager, Triveni
18. Mr.Kumar Sindhu, Deputy Manager, Triveni
19. Mr.Anshul Khandelwal, Dy.Manager, Triveni

Agenda of the Meeting:

- To discuss and approve Basic Engineering Package and Phase I drawings as discussed and accepted during the meetings held earlier occasions
- To finalise the effective date

The following points were discussed during the meetings held on 28th November 2018 at 1st floor, Conference hall at the office of National mission clean ganga, New Delhi

Sr. No.	Description	Action by	Remarks
1	Discussion held on revised construction plan, it was agreed to incorporate the observations and submit the revised plan for approval	MWMPL	MWMPL to submit the revised construction plan at the end of the day

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Sr. No.	Description	Action by	Remarks
A	BEP of 30 MLD NEW STP at Masani		
2	The compliance resolution sheet provided by MWMPPL on 27 th November 2018 were discussed and finalized as follows: .		
A1	Observations made on R0 drawings and documents		
3	<p>Minimum flow factor of 0.5</p> <p>Even though NMCG, UPJN and MACE agreed for the minimum flow factor of 0.5, it was requested to incorporate the applicability as per field conditions also since the flows in the canals through the year vary with less flows expected during summer season and future sewer network connections, which will have an impact on the flow generation which in turn have an impact on operation of the pumping stations and the STP at their optimum levels in the process description.</p> <p>MWMPPL informed that they will not be able to incorporate the reasons with fact at the process description due to less time.</p> <p>NMCG informed that the process description provided by MWMPPL can be approved and the same need to be modified incorporating all the possible details within a month from the effective date.</p>	MWMPPL	<p>MWMPPL agreed for the same.</p> <p>MWMPPL to resubmit the process description incorporating all the possible details within a month from the effective date</p>
4	Observation on Flow split and measurement between 30 MLD new STP and 6.8 MLD existing STP since the inlet structure including grit chamber is designed for cumulative flow.	MACE	MACE to verify and confirm the same to UPJN for further approval process.

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	<p>MWMPL informed that the same is incorporated in Mass balance, process calculation and process description.</p> <p>MACE informed that the incorporation of the same need to be verified since the document received late night on 27th November 2018</p>		
5	<p>Observation to include Anoxic zone / Fill in the SBR Basin and additional air requirement due to this</p> <p>MACE informed that as per the discussion held on 5th November 2018, MWMPL to provide the letter from technology provider whether anoxic zone / fill is required or not. Till date we are getting the reply informing that anoxic zone / fill is not required.</p> <p>NMCG informed that MWMPL can take decision whether anoxic zone / fill required or not as per their process requirement. And in case the KPI is not met, the payment will not be made and penalty will be levied</p> <p>MACE suggested to include all the minutes of meeting held on the BEP and the compliance provided by MWMPL should be part of BEP which will give more insight about the project for the persons newly deputed for this project.</p>	MWMPL	<p>MWMPL should enclose all the MOMs held till date including this MOM and all compliance sheets provided by MWMPL as annexure in the process description for approval process.</p> <p>In case the KPI is not met, the payment will not be made and penalty will be levied as per CA conditions.</p>
6	<p>Observation: CCT detention time during decant peak flow.</p> <p>MWMPL informed that the same is incorporated as per MOM dated 24th November 2018 in all relevant documents.</p> <p>MACE informed that the incorporation of the same need to be verified since the document received late night on 27th November 2018</p>	MACE	MACE to verify and confirm the same to UPJN for further approval process.
7	Observation: Sludge digestion rate	MACE	MACE to verify and confirm the same to UPJN for further approval process.

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	<p>MWMPL informed that the same is incorporated as per MOM dated 24th November 2018 in all relevant documents.</p> <p>MACE informed that the incorporation of the same need to be verified since the document received late night on 27th November 2018</p>		
8	<p>MWMPL Informed that the access road for the left out unit also included and adequate.</p> <p>MACE and UPJN informed that there is no layout attached in the email sent on 27th November 2018.</p> <p>NMCG suggested to replace the foot path with minimum width access road leading to SBR unit.</p> <p>Similarly requested to provide the access road near the thickener</p>	MWMPL	MWMPL agreed to incorporate the same and send it to all on 29 th November 2018
A2	Observation on Process design calculation and Mechanical calculation – Revision 1		
9	<p>Observation: Treated effluent quality in process design calculation and mechanical calculation</p> <p>MWMPL informed that the same is incorporated as per MOM dated 24th November 2018 in all relevant documents.</p> <p>MACE informed that the incorporation of the same need to be verified since the document received late night on 27th November 2018</p>	MACE	MACE to verify and confirm the same to UPJN for further approval process.
10	<p>Observation: Process design calculation and mechanical calculation – reference clause 1.0</p> <p>MACE requested to clearly indicate the flow streams of 30 MLD and 6.8 MLD</p> <p>MWMPL informed that the same is incorporated as per MOM dated 24th</p>	MACE	MACE to verify and confirm the same to UPJN for further approval process.

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	<p>November 2018 in all relevant documents.</p> <p>MACE informed that the incorporation of the same need to be verified since the document received late night on 27th November 2018</p>		
11	<p>Observation on recycled flow concentration – Reference clause 8.1</p> <p>MACE informed that the recycled flow from the Thickener on BOD and TSS figures are very low and requested to indicate the reference used for these values. Gravity Thickeners shall have higher concentrations than proposed. Further the solid capture of 95% considered is on the higher side and requested to follow 90% as per CPHEEO manual.</p> <p>MWMPL informed that the same is incorporated as per MOM dated 24th November 2018 in all relevant documents.</p> <p>MACE informed that the incorporation of the same need to be verified since the document received late night on 27th November 2018</p>	MACE	MACE to verify and confirm the same to UPJN for further approval process.
12	<p>Observation: SBR basin sizing – Reference clause 8.2</p> <p>MACE informed that due to the variation in sl.no.8, the SBR basin size need to be revisited and corrected</p> <p>MWMPL informed that the same is incorporated as per MOM dated 24th November 2018 in all relevant documents.</p> <p>MACE informed that the incorporation of the same need to be verified since the document received late night on 27th November 2018</p>	MACE	MACE to verify and confirm the same to UPJN for further approval process.
13	<p>Observation on Reference: 8.2 - SBR basin sizing</p>	MACE	MACE to verify and confirm the same to UPJN for further approval process.

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	<p>MACE requested to indicate MLSS concentration corresponding to the SWD of SBR.</p> <p>MWMPL informed that the same is incorporated as per MOM dated 24th November 2018 in all relevant documents.</p> <p>MACE informed that the incorporation of the same need to be verified since the document received late night on 27th November 2018</p>		
14	<p>Observation: Reference: 8.2 - SBR basin sizing</p> <p>MACE informed that the mentioned HRT of 13.19 hrs. is worked out based on average flow of 30 MLD without considering the recycled flow. Requested to modify the HRT based on total flow (average flow and recycled flow) which is approximately 12.7 hrs.</p> <p>MWMPL informed that the working considering recycled flow is also included now in the process calculation.</p> <p>MACE informed that the incorporation of the same need to be verified since the document received late night on 27th November 2018</p>	MACE	MACE to verify and confirm the same to UPJN for further approval process.
15	<p>Observation: SBR basin volume</p> <p>Volume is mentioned as 4121.58 instead of 4121.85 m³. MACE requested to correct the same and modify the slight changes to the SBR basin dimensions</p> <p>MWMPL informed that the same is incorporated as per MOM dated 24th November 2018 in all relevant documents.</p> <p>MACE informed that the incorporation of the same need to be verified since the</p>	MACE	MACE to verify and confirm the same to UPJN for further approval process.

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	document received late night on 27 th November 2018.		
16	<p>Observation: Reference: 8.3 - Oxygen Demand</p> <p>MACE informed that in the calculation that the total recycle flows from Section 8.2 need to be added and the respective calculation to be revised.</p> <p>MWMPL informed that the same is already incorporated and there is no change</p>	MACE	MACE to verify and confirm the same to UPJN for further approval process.
17	<p>Observation: Reference: 8.4 - Air Requirement</p> <p>MACE informed to cross check the accuracy of the figure considered for atmospheric pressure at altitude H and also indicate units</p> <p>MACE also requested to check Average dissolved oxygen saturation concentration value based on observation on atmospheric pressure at altitude H and also indicate units</p> <p>MWMPL informed that there was some error and the same is rectified and is incorporated as per MOM dated 24th November 2018 in all relevant documents.</p> <p>MACE informed that the incorporation of the same need to be verified since the document received late night on 27th November 2018.</p>	MACE	MACE to verify and confirm the same to UPJN for further approval process.
18	<p>Observation: Reference: 8.4 - Air Requirement</p> <p>MACE requested to consider the diffuser fouling factor of 0.9 as per Metcalf & Eddy as indicated in the document.</p> <p>MWMPL informed that the same is incorporated as per MOM dated 24th November 2018 in all relevant documents.</p>	MACE	MACE to verify and confirm the same to UPJN for further approval process.

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	MACE informed that the incorporation of the same need to be verified since the document received late night on 27 th November 2018.		
19	<p>Observation: Reference: 8.4 - Air Requirement</p> <p>MACE requested to correct the total air required based on site conditions for 25 degrees C since the difference is working out to more than 3%</p> <p>MWMPL informed that the same is corrected and is matching with observation</p> <p>MACE informed that the incorporation of the same need to be verified since the document received late night on 27th November 2018.</p>	MACE	MACE to verify and confirm the same to UPJN for further approval process.
20	<p>Observation: Reference: 8.5 - Thickener Feed Pumps-Sludge Wasting</p> <p>MACE informed that TSS assumed here indicates 50 mg/l TSS in the effluent while the design requirement is 100 mg/l and requested to cross check the SRT calculations also for 100 mg/l TSS leaving the system.</p> <p>MWMPL informed that the same is incorporated as per MOM dated 24th November 2018 in all relevant documents.</p> <p>MACE informed that the incorporation of the same need to be verified since the document received late night on 27th November 2018.</p>	MACE	MACE to verify and confirm the same to UPJN for further approval process.
21	<p>Observation: Reference: 10.3 - Centrifuge:</p> <p>MACE requested to indicate the supernatant concentrations in the table.</p> <p>MWMPL informed that the same is incorporated as per MOM dated 24th</p>	MACE	MACE to verify and confirm the same to UPJN for further approval process.

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	<p>November 2018 in all relevant documents.</p> <p>MACE informed that the incorporation of the same need to be verified since the document received late night on 27th November 2018.</p>		
22	<p>Observation: Reference: 10.4 - Polyelectrolyte Dosing Tank & Pumps:</p> <p>MACE pointed out the inconsistency of the solution strength considered in process calculation (0.25%) and process description (0.1%) and requested to correct the same</p> <p>MWMPL informed that the same is incorporated as per MOM dated 24th November 2018 in all relevant documents.</p> <p>MACE informed that the incorporation of the same need to be verified since the document received late night on 27th November 2018.</p>	MACE	MACE to verify and confirm the same to UPJN for further approval process.
A3	Observation on Mass balance flow diagram – Revision 1		
23	<p>Observation: GRIT Separator outlet to 30 MLD STP:(Refer point number 27 to 29 mom dated 24th November 2018)</p> <p>MWMPL informed that the same is incorporated as per MOM dated 24th November 2018 in all relevant documents .</p> <p>MACE informed that the incorporation of the same need to be verified since the document received late night on 27th November 2018.</p>	MACE	MACE to verify and confirm the same to UPJN for further approval process.
24	<p>Observation: Thickener supernatant:</p> <p>MACE requested to revise the thickener supernatant BOD and TSS values based on process calculation sheet comments</p>	MACE	MACE to verify and confirm the same to UPJN for further approval process.

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	<p>MWMPL informed that the same is incorporated as per MOM dated 24th November 2018 in all relevant documents.</p> <p>MACE informed that the incorporation of the same need to be verified since the document received late night on 27th November 2018.</p>		
25	<p>MACE requested to include general note Indicating the percentage removal expected/designed for in all the units shown.</p> <p>MWMPL informed that the absolute values are indicated and percentage to be arrived by the reader</p> <p>MACE informed that the incorporation of the same need to be verified since the document received late night on 27th November 2018.</p>	MACE	MACE to verify and confirm the same to UPJN for further approval process.
A3	Process description – Revision 1		
26	<p>MWMPL informed that they will not be able to incorporate the reasons with fact at the process description due to less time.</p> <p>MACE informed that the process description updation and inclusion of all observation (point 32 to 60 as per mom dated 24th November 2018) is necessary for future reference which will avoid the situation facing by all executing agency i.e non-availability of data of existing assets</p> <p>NMCG informed that the process description provided by MWMPL can be approved and the same need to be modified incorporating all the possible details within a month from the effective date.</p>	MWMPL	<p>MWMPL agreed for the same.</p> <p>MWMPL to resubmit the process description incorporating all the possible details within a month from the effective date</p>
A4	Layout – Revision 2		

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Sr. No.	Description	Action by	Remarks
27	<p>MWMPL informed that the observations on the layout (61 to 76) is incorporated except certain points as mentioned in the compliance sheet which will be done during design detailed engineering.</p> <p>MACE informed that the incorporation of the same need to be verified since the document received late night on 27th November 2018.</p> <p>NMCG suggested to replace the foot path with minimum width access road leading to SBR unit.</p> <p>Similarly requested to provide the access road near the thickener</p> <p>Covered shed for sludge storage to be provided</p>	MWMPL	MWMPL agreed to incorporate the same
B	20 MLD Tertiary treatment plant		
28	<p>MACE informed that Process flow diagram and Mass balance diagram for 20 MLD TTP along with compliance sheet received late night on 27th November 2018. Also, the updated process description, Layout, hydraulic flow diagram and P&ID are yet to receive. Upon receipt of the same MACE shall review and provide the status of compliance and observations if any.</p> <p>Also, MACE informed that the observations of IOCL also to be incorporated and the same is almost in line with the observations made by MACE.</p> <p>NMCG informed that upon review, one more meeting need to be convened to arrive at the conclusion of BEP pertaining to TTP</p>	MWMPL & MACE	<p>MWMPL informed that they will submit the pending documents within 30th November 2018.</p> <p>MACE to review and provide the status of compliance and observations if any</p>
29	<p>MACE informed that as per CA gravity filtration system to be provided where as MWMPL considered pressurized disc filter</p> <p>NMCG requested MWMPL to submit the technical details and reference of existing plants where this pressurized</p>	MWMPL	MWMPL to submit the technical details and reference of existing plants where this pressurized disc filter system is installed in the wastewater treatment system and its

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	<p>disc filter system is installed in the wastewater treatment system and its performance</p> <p>Also, NMCG informed that pressurized system can be accepted in place of Gravity filtration since the meeting of KPI responsibility is lies with the MWMPL and the penalty is much higher in this case.</p>		performance along with the remaining documents mentioned in sl. No.27
30	<p>UF system: MACE informed that the working units shown in calculations as 6 units whereas the write-up shows 5 +1 (Operating + standby). IOCL also raised the same query</p> <p>MWMPL explained that incase of one system failure the remaining 5 system will be able to deliver the total required output.</p> <p>MACE and NMCG informed that the process description does not have the operating philosophy details and the same need to be included in process description more elaborately.</p>	MWMPL	MWMPL agreed to incorporate the elaborative operational philosophy in the process description in the submission as mentioned in sl.no.27
31	<p>MACE informed that the basket strainer is shown as 200 micron, it needs to be 100 micron.</p> <p>MWMPL informed that the disc filter is designed for less than 50 micron input quality itself is less than 100 micron, they have removed the basket strainer in the revised document</p>	MWMPL	MWMPL to include the writeup in the process description in the submission as mentioned in sl.no.27
32	<p>TTP Treatment System:</p> <p>For each of the sub-treatment TTP systems, inlet and outlet conditions needs to be defined for process performance.</p> <p>Control Philosophy write-up of the entire TTP system needs to be submitted.</p> <p>MWMPL informed that the same will be carried out during design detail engineering.</p> <p>MACE informed that this is very much important to understand the</p>	MWMPL	MWMPL to include the same in the documents to be submitted as mentioned in sl.No 27

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	<p>performance and its control philosophy during BEP stage itself and requested to submit the same</p> <p>NMCG agreed the view of MACE and requested to submit the same</p>		
33	<p>MACE informed that in the compliance resolution sheet provided by MWMPL indicates that it meets the CA conditions along with the reference clause. However, it is requested to indicate the reference page of their submission to minimize the approval process</p>	MWMPL	MWMPL to revise the compliance resolution sheet and submit along with the documents as mentioned in sl.No 27
34	<p>MACE informed that as per CA, 100% stand by for electro mechanical equipment to be provided for all electro mechanical equipment</p> <p>MWMPL informed that they have provided 100% standby for filter feed and backwash system.</p>	MWMPL	MWMPL to ensure standby for the remaining units and mention the same in the revised document if any
35	<p>Mixing of UF treated water with RO treated water: In general, it is not advisable to mix the higher impurity water with high purity water to achieve the KPI. This need to be revisited and revised to meet the agreement conditions as per applicable standards. IOCL also raised the concern on this.</p> <p>MWMPL mentioned that they could not see any comments in the mass balance diagram. The same has been shown to MWMPL by MACE. i.e MACE requested to include separate blending tank prior to treated wastewater storage tank with minimum detention time of 2 hours</p> <p>NMCG also accepted the suggestion and requested MWMPL to incorporate the same</p>	MWMPL	MWMPL to include the same in the documents to be submitted as mentioned in sl.no.27
36	<p>Addition of TTP reject to existing STP: Existing specified STPs design capacity are to be considered only for treating the inlet sewage flow and the system need to be upgraded / substantiated for the addition of reject flow</p> <p>MACE and UPJN informed that the STP are designed to handle sewage inflow of 14.5 MLD and 16 MLD and the</p>	MWMPL	MWMPL to include the details in the documents to be submitted as mentioned in sl.no.27

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	performance to be met as per KPI mentioned in CA NMCG informed that MWMPL to ensure the same.		
C	Pumping stations		
37	MACE informed that CRS for Vrindhavan gate alone was received on 27 th November 2018 and the same for remaining pumping station are to be provided by MWMPL	Info	
38	MACE and UPJN informed that as per CA the mechanical screens to be provided at the following pumping stations with necessary automation and instrumentation <ul style="list-style-type: none"> • Masani MPS • Jainsinghpura MPS • Bengali ghat MPS • Dairy farm MPS • Vrindhavan ghat MPS • Cant nalla IPS (based on flow and standard) 	MWMPL	MWMPL to ensure the same in the subsequent submissions
39	MACE and UPJN informed that online flow monitoring system for all I&D works to be provided as per CA conditions MWMPL informed that as per CA it covers only I&D which are near MPS and IPS. MACE and UPJN informed that the interpretation made by MWMPL is not correct and requested to refer clause 9.3 O&M for online monitoring requirement After discussion, NMCG informed to provide camera at the locations where there is no possibility for providing flow meters connected with online monitoring system.	MWMPL	MWMPL to discuss with UPJN and identify the I&Ds and incorporate in the same in the revised documents
40	UPJN informed that the flow measurement is not yet started which was agreed to start on 27 th November 2018 as per the meeting held on 24 th November 2018 MACE informed that as agreed, MACE engineer is already reached Mathura on 26 th November 2018 for overseeing the flow measurement and sitting idle.	MWMPL	MWMPL agreed to start the flow measurement from 30 th November 2018

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Sr. No.	Description	Action by	Remarks
	UPJN informed MWMPL to ensure that the flow measurement starts latest by 30 th November 2018 onwards without fail.		

The following points were discussed and decisions were made during the meeting to approve the BEP and announce effective date

1. MWMPL can take decision whether anoxic zone / fill required or not as per their process requirement.
2. In case the KPI is not met due to non-provision of anoxic fill, the payment will not made and penalty will be levied as per CA conditions and in case the KPI is not met, the payment will not be made and penalty will be levied
3. MWMPL should enclose all the MOMs held till 30th November 2018 and all compliance sheets provided by MWMPL till 30th November 2018 as annexure in the process description
4. MWMPL to include the alternate arrangement for thickener in case of failure and there is no need for standby thickener
5. MWMPL to revise the process description incorporating elaborative details of each process, operating philosophy at all conditions within 30 days from the effective date.
6. Master drawing/ document list indicating the submission dates for each drawing and document to be provided by MWMPL before the effective.
7. MWMPL should submit the Level 3 schedule within a month from the effective date.
8. The construction drawings will be submitted by MWMPL and the same shall be reviewed immediately and the observations if any shall be discussed for two days on every weekly basis at Mathura for providing approval at the earliest. This process shall continue until the phase 1 drawings are approved and ready for construction
9. One more meeting will be convened for approval of TTP upon submission of all documents by MWMPL and review of the same by MACE and UPJN.
10. NMCG informed that pressurized filtration system in place of gravity filtration as mentioned in the CA may be provided by MWMPL as per their process requirement.

With the above conditions, BEP (process design calculation, mechanical design calculation, process description, Layout), construction plan shall be approved by UPJN and the effective date shall be from 4th December 2018.

MWMPL

NMCG

UPJALNIGAM

PROJECT ENGINEER