

Minutes of Meeting # 7

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

Date : 7thDecember 2018

Location : Office of the Project Manager, Drainage and Sewerage Unit, UPJN, Mathura

List of Attendees:

1. Mr. Maharaj Singh, Project manager (D&SU), UP Jalnigam, Mathura
2. Mr. Deepak Chauhan, Project Manager (E&M), UP Jal Nigam, Agra.
3. Mr. Waseem Athar, Project Engineer, UP Jal Nigam, Mathura.
4. Mr. Sumit Project Engineer (E&M), UP Jal Nigam, Agra
5. Mr. Asthana, IOCL
6. Mr. K. Sen, IOCL
7. Mr. Hitesh, IOCL
8. Mr. A.Srinivasan, General Manager – MACE
9. Mr. Sathish Kamaraju, Senior Process Engineer, MACE
10. Mr. M. Jayakrishnan, Project Engineer, MACE
11. Mr. K.C.Agarwal, GM, Triveni
12. Mr. Kailash chand Dhawan, AGM - Triveni
13. Mr.Sunil Bhargava, Process Engineer, Triveni
14. Ms, Kajal Verma, Asst. Manager- Triveni
15. Mr. Biswajit Majumdar, Triveni

Agenda of the Meeting:

- To discuss and approve Basic Engineering Package and Phase I drawings pertaining to 20 MLD TTPat Trans Yamuna
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The following points were discussed during the meetings held on 7th December 2018 at UPJN office Mathura

Sr. No.	Description	Action by	Remarks
A	Electrical Load List and P&ID Document No PXD-1305-106-11-02 (Equipment List), Rev-01		
1	The supply source for the plant is from a single circuit 33 KV line. In	MWMPL	MWMPL informed that they have considered 1250 KVA DG.

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	case of power failure whether any DG power is considered to maintain water supply to MR.		However the size will be confirmed during detail engineering stage. UPJN informed that DG at Gokul barrage to pump the water from intake well to MR to be ensured by IOCL and the work will be carried out by UPJN on deposit work
2	For PLC power supply is taken from the PCC which is not a reliable source considering supply from Grid. UPS may be considered for PLC.	MWMPL	MWMPL informed that UPS is already considered for PLC power supply and the document will be revised accordingly
B	Process Design & Mechanical Design Calculation Document No PXD-1305-106-11-001, Rev-01		
3	Blending tank (1 no) is having 2 nos of compartments of design capacity 1270.83 m ³ each; whereas the downstream filters (RGF / Disc) are also being provided with same design capacity of 1270.83 m ³ /hr capacity. Does it mean that only 1 compartment of blending tank will be in line and the other compartment standby? UPJN / M/s. Triveni to clarify.	MWMPL	MWMPL informed that the other compartment will act as standby and uninterrupted water supply will be ensured by themselves
4	It is mentioned (refer page 4/14) that 4 nos of Rapid Gravity Filters (4 running + 0 standby) is being proposed whereas in Equipment List in P&ID, Site Layout etc only 1 no of Disc Filter is being listed. It needs to be clarified which is the final selection	MWMPL	MWMPL informed that they will go ahead with pressurized disc filter
5	Filters (RGF or Disc Filters whichever be the option) are being provided with no standby. In case if	MWMPL	MWMPL informed that they are providing 4 filters of each 7.5 MLD

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	running filters gets choked or goes under maintenance, there will be shortfall in treated water supply rate from new STP to MR. UPJN / Triveni may be asked to look into this matter and address this concern suitably.		
6	Only 1 no of tank is being provided for Filtered water storage. In case if this single tank develops some problem (say leakage or if there is requirement of M&I) then the tank will be required to be decommissioned. There is no standby filtered water tank provided in the scheme. UPJN / Triveni may be asked to look into this matter and address this concern suitably	MWMPL	MWMPL informed that treated water storage tank will have two compartments and the water will be supplied from either of the tank uninterrupted.
7	In line with above-mentioned comment nos5& 6, the following tanks will be in service on continuous basis hence two tanks/ tower are recommended for reliability. Hypo dosing tank HCL dosing tank SMBS dosing tank Antiscalant dosing tank DG tower Sump and treated tank are already showing partition. UPJN / Triveni may be requested to look into the reliability aspect of these items and clarify the redundancy in the proposed system if these single items goes off-line due to maintenance requirement as many of these facilities will be handling dirty and corrosive services, therefore will prone to maintenance and outage.	MWMPL	MWMPL informed that all dosing tanks and pumps shall be of 2 nos (1W+1S) and DG tower will be of one number without standby and assured to deliver uninterrupted water as per the KPI IOCL agreed for the same

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8	The capacity of the waste water backwash sump (46m ³) should be adequate for at least one filter backwash effluent (70 m ³).	MWMPL	MWMPL informed that the pump capacity will be revised based on disc filter backwash requirement. Sump capacity shall be equivalent to one backwash requirement
9	The capacity of the RGF Filter feed pump is kept as 1271 m ³ /hr which is equal to the design capacity of the filters. The capacity should be kept at at least 10% margin. The same is to be considered for all the pumps. UPJN suggested that the pump capacity should be arrived and designed based on parallel operations based on pump curve so that the margin can be achieved	MWMPL	MWMPL and IOCL agreed for the same. MWMPL to revise the document accordingly
10	The total no of UF cells considered is 6 nos with capacity of 166.7 m ³ /hr per cell. The capacity/ nos of cells are not adequate to supply 1000m ³ /hr of permeate on continuous basis especially during CEB/CIP of the membranes. The no of cells should be at least 7 nos or the capacity of the cells may be increase so that the 5 nos cells are adequate to supply 1000 m ³ /hr of permeate water	MWMPL	MWMPL informed that the backwash timing is just 15 minutes and hence no standby is required IOCL agreed for the same
11	The suction header of the RO Feed pumps is a single header with pumps. Two suction headers may be considered for reliability and availability of adequate suction to the pump connected at the end of header.	MWMPL	MWMPL informed that they will provide only one suction header. IOCL agreed for the same
12	Single Degasser tower of 500 m ³ /hr is considered. Two degasser	MWMPL	MWMPL informed that this point is already covered in sl.no.7

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	towers may be considered to avoid interruption of water supply during outage of the degasser for maintenance.		
13	The RO feed pump is only considered at the inlet of 1st stage. Intermediate pump at 2nd or 3rd stage input may be considered as we are facing problem in 3rd stage in ETP RO plant.	MWMPL	MWMPL informed that there is no requirement of pump before third stage based on their process design IOCL agreed for the same
14	Basket strainer Size of 200 Micron to be considered before UF.	MWMPL	MWMPL informed that due to selection of disc filter of 50 micron, there is no need for basket strainer of 200 micron. The same will be incorporated in the revised document
C	P&ID No PXD-1305-106-11-02, sheet 1 of 8 Rev-01		
15	Online analyser for Turbidity, TSS and Organic matter is to be provided in addition to conductivity and pH at the outlet of Treated water transfer pump	MWMPL	MWMPL informed that they will comply as per tender and CA requirements
D	General Comments		
16	HAZOP study of these P&IDs is to be conducted by competent neutral agency prior to their finalization.	MWMPL	MWMPL informed that they will confirm the same after discussing internally on or before 10 th December 2018
17	The capacity of all the pump to be considered at least 10% higher than the design flow. UPJN suggested that the pump capacity should be arrived and designed based on parallel operations based on pump curve so that the margin can be achieved	MWMPL	MWMPL and IOCL agreed for the same. MWMPL to revise the document accordingly
E	P&ID No PXD-1305-106-11-02,		

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	sheet 1 of 8 Rev-01		
18	P-0003A/B suction strainers to be shown in the P&ID.	MWMPL	MWMPL informed that there is no need of suction strainers. IOCL agreed for the same
F	P&ID No PXD-1305-106-11-02, sheet 2 of 8 Rev-01		
19	Flow-meters/rotameter to be provided (both local as well as panel indication) at discharge headers of each UF air blower	MWMPL	MWMPL informed that there is no requirement of flowmeters at the backwash blower. IOCL agreed for the same
20	It is observed that feed line 500 NB is suddenly reduced to 300 NB at the inlet of each of the 3 nos of individual Filtrate Manifold / Membrane Cell. Designer to check whether this reduced line size will take care of feed-load or not – or whether the total feed flow is getting distributed to 3 parts Designer to check and confirm.	MWMPL	MWMPL informed that they will cross check the calculation and modify the document if required and submit the revised document
21	Each membrane tank to be provided with LT (Level transmitter) for level control.	MWMPL	MWMPL informed that the LT for level control for each membrane tank is already provided
22	Suction strainers of UF air blowers to be shown in revised P&ID	MWMPL	MWMPL informed that the suction strainers for blowers is part of the blower itself
F	P&ID No PXD-1305-106-11-02, sheet 4 of 8 Rev-01		
23	Feed line size from UF outlet to RO feed tank shown 500 NB in P&ID sheet 2 of 8 whereas the same is shown 450 NB in P&ID sheet 4 of 8 at RO feed tank / Treated water pump rated differential head is only 23 MWC as per Process Design document. Considering atm pressure at suction, this translates to a rated discharge pressure of only around 3.3 Kg/cm ² -a at rated capacity of 834 m ³ /hr at 600 NB (24") size pipe. Considering the proposed location of this plant, Designer may be asked to provide supporting calculation to	MWMPL	MWMPL informed that they will cross check the calculation and modify the document if required and submit the revised document

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	establish that this differential pressure is adequate enough to ensure that the treated water reaches destination at MRnlet. This mismatch is to be checked and corrected		
G	P&ID No PXD-1305-106-11-02, sheet 5 of 8 Rev-01		
24	Treated water pump rated differential head is only 23 MWC as per Process Design document. Considering atm pressure at suction, this translates to a rated discharge pressure of only around 3.3 Kg/cm ² -a at rated capacity of 834 m ³ /hr at 600 NB (24") size pipe. Considering the proposed location of this plant, Designer may be asked to provide supporting calculation to establish that this differential pressure is adequate enough to ensure that the treated water reaches destination at MR	MWMPL	MWMPL informed that they will cross check the calculation and modify the document if required and submit the revised document
25	In line magnetic flow meter to be installed at the discharge point as per the agreement signed between UPJN, NMCG and IOCI on 13th June'18.	MWMPL	MWMPL informed that they have considered the same in the revised document which will be submitted
26	Document related comments provided by IOCL IOCL informed that the points are to be taken care by MWMPL in the revised document	MWMPL	MWMPL agreed for the same and informed most of the points are already incorporated in the revised document which will be submitted
27	Tag nos are not assigned for any of the equipments, instruments, facilities. Tag nos / ID Nos for all equipments, instruments, and facilities are to be assigned and listed. The same are already	MWMPL	MWMPL informed that the same will be ensured in the last revision

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	tabulated in drawing no PXD-1305-106-11-02, Rev-01		
28	In this P&ID, agitators are shown for PH dosing tank and Citric Acid dosing tanks; however in Electrical Load List document, these two agitators are missing. Designer may be asked to check and take needful corrective actions in documents wherever applicable.	MWMPL	MWMPL informed that they will modify the load list
29	PFD to be updated incorporating the comments on P&IDs and other documents which were already conveyed to UPJN on 14-11-18. With incorporation of comments on P&IDs, PFD will also be needed to be updated accordingly.	MWMPL	MWMPL agreed for the same and submit the revised document accordingly
30	In PFD sheet 1 / 2, disc filter inlet flow 1207 m ³ /hr; outlet reject is 25 m ³ /hr; outlet to Yamuna 242 m ³ /hr, hence the balance outlet flow to UF should have been 1207-25-242 = 940 m ³ /hr; but the same is shown in PFD as 1028 m ³ /hr. Material balance across disc filter may kindly be checked and corrected, if reqd.	MWMPL	MWMPL informed that they have already corrected the same in the revised document which will be submitted
31	In PFD sheet 1 / 2, material balance across disc filter w.r.t BOD, TSS is not matching when compared from inlet to outlet. The same may kindly be checked and corrected if required. Refer enclosed calculation.	MWMPL	MWMPL informed that they will cross check the calculation and modify the document and submit the revised document
32	In both PFDs, at least for pressurized streams, kindly also mention the pressure-data against each stream in updated PFDs.	MWMPL	MWMPL informed that they will cross check the calculation and modify the document and submit the revised document
33	In PFD sheet 2/2, across RO-plant, there is a mismatch in Material Balance w.r.t. TDS from inlet to outlet (total of TDS adding for all outlet streams i.e. outlet to reject + outlet to DG tower) comes much lower than inlet total TDS. Material balance w.r.t TDS across RO may kindly be	MWMPL	MWMPL informed that they will cross check the calculation and modify the document and submit the revised document. However the same is already available in RO proejctions

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	rechecked and corrected if required.		
34	In PFD sheet 2/2 near DG tower, stream "To Treated Water Tank" (quantity 8.5 MLD) – source to be specified and written in the PFD. Also quality of this stream (BOD, TSS, TDS) to be specified in the PFD.	MWMPL	MWMPL informed that they will cross check the calculation and modify the document and submit the revised document
35	Kindly consider inclusion of list of equipments, process datasheets of major equipments (vessels, tanks, pumps, blowers, sumps etc) and drawings (GADs) of major equipments (tanks, vessels etc) in the Technical description document.	MWMPL	MWMPL informed that they will modify the document and submit the revised document
36	Blending tank inlet flow to be corrected to 1271.4 M3/hr.	MWMPL	MWMPL informed that they will cross check the calculation and modify the document and submit the revised document
37	Capacity of Disc filter and operating philosophy of the disc filter not mentioned. To be further clarified.	MWMPL	MWMPL informed that the same is already incorporated in the revised document which will be submitted
38	One stream of Disc filter outlet is going to Yamuna. The requirement is not clear from technical description.	MWMPL	MWMPL informed that they will cross check the calculation and modify the document and submit the revised document
39	The mass balance for the UF outlet and RO permeate is based on 1028.54 m3/hr. Necessary correction required in the mass balance at Disc filter to ensure 1028.54 m3/hr flow to UF feed.	MWMPL	MWMPL informed that this is typo error and modify the document and submit the revised document
40	Recovery of UF plant is taken as 95.2% which differs from earlier document (as mentioned in process & mechanical design document- 90.33%).	MWMPL	MWMPL informed that the recovery of 95.2% is considered

MWMPL IOCLUPJALNIGAM PROJECT ENGINEER

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