

15 MLD STP UNNAO SITE INSPECTION REPORT

Inspection note of 15 MLD Unnao STP construction site and facilities by Mr. Anil Kumar Seth, PE, TL (I/c) and KRMPL Representative as given below.

Date of site visit	19/04/2023
Visit Team & Persons met	Mr. Anil Kumar Seth – Team Leader , STC Kanpur Mr. Ajay Kumar Goyal, Support Engineer (Mechanical), STC Kanpur Mr. Shrikant Bera –Supervisor Electrical , KRMPL Kanpur Mr. Ajay Negi –Mech. Engg. , KRMPL Kanpur Mr. Gulshan Kumar –Safety Engg. , KRMPL Kanpur
LOCATION	STP 15 MLD Unnao

A. Electrical Observations are as under:

1. Main Gate:-

- 2 nos. light installation work pending. due to incomplete civil works

2. Guard Room:-

Internal electrification :-

- 2 Nos. Tube light, 1Exhaust fan in operation.
- Wash Room:-1 nos. tube light not working, Exhaust fan not installed.
- Plumber fitting work in progress. Piping work & supply of water is pending.
- Electrical supply taken through cable is temporary.
- Railing work is completed .Bulb outside not installed near step.

3. Staff Quarter :-

- Outside light installed & working.
- Internal electrification / installation of exhaust fan & ceiling fan done.

4. Meter Room:-

- Internal electrification & installation of exhaust fan completed.
- Checker plate to be laid. which is not procured.

5. Transformer yard:-

- Approach for transformer maintenance not made.
- Earthing done.

6. DG set :-

- Walkway not made yet.

- Earthing done.
- RFI pending.

7. VFD Panel:-

- 2 no. tube light, 2 nos. exhaust fan working.
- Checker plate to be laid. which is not procured
- Earthing done.
- Switch board to be fitted .it was found to be hanging.

8. PTU:-

- **Cable dressing is to be done.**
- Canopy to be fixed.
- 2 Nos. poles fixed.

8. MPS:-

- **Internal electrification :-**
 - 4 nos. pumps installed. Guide pipe of 1 nos. pump not fixed properly.
 - Water was filled in the sump for hydro testing & testing of pumps.

9. SBR :-

- Water filled in two basins for testing.
- Six number poles installed for lighting.

10. CCT:-

- Pole 1 no. installed
- Cable laying done.EOT outgoing cable termination pending.

11. Centrifuge Building:-

- 3 nos. installed .testing done, commissioning pending.

12. Supernatant Sump:-

- Pole 1 no. installed.
- Testing done, commissioning to be done.

13. Thickener:-

- In working order but sewer is not there. Testing & commissioning pending.

14. External Lighting:-

- External lighting to be done after road work is completed.

15. Air Blower Room :-

- 3 nos. Blower installed & working

- Grouting done.
- Painting of Acoustic enclosure to be done.
- Pressure Gauge installed.
- Inspection of RFI given by KRMPL is being done. Compliance on Observation report is pending .

16. Automation :-

- SBR & Balance of plant interfacing is pending. This could not be done on given date 31.03.2023 .

17. Admin Building:-

- Ceiling fan 1 nos. installed & working.
- Exhaust fan 7 no. working.

18. Earthing :-

- Out of 32 earthing pits only 10 are complete grid work complete.22 nos.riser completed
- Road construction is main hindrance to avoid damage of pits & chamber.

Note:-

1. Earthing chamber to be completed.
2. Supplies to various units have been given by cables without dressing properly as per norms.
3. Levelling of Campus & plantation work (Site development) is pending.
4. Cleaning of pipe to be done quickly so that sewer may reach at STP.
5. Flexible cable supply be taken at top priority as work of crane is pending .which include airblower, MPS, Centrifuge & CCT.

B. Civil Observations are as under:-

1. Cleaning of 1200 mm RCC pipe

Stretch I:

- a. From I&D to Rai Barelli road 1500 m pipe has been reported to be cleaned.

Stretch II :

- a. Receiving chamber to manhole no.38 cleaning is in progress.125m line reported to be cleaned out of 360m.
- b. Total length of pipe is 3.2KM.

2. Manholes:-

- a. As per standard distance between two manholes should be 60m. The same has been followed and 41 nos. manhole are made.
- b. Out of 41 no. manhole 27 no. manholes are reported to be cleaned.
- c. The target date given by NMCG is 30.04.2023. With this speed of cleaning it is not possible to achieve the target date and additional 2 month are required from the date of inspection as reported by KRMPL to get sewer into inlet chamber.

3. **Labours:-**

Labour deployment is as under

civil (cleaning) 40 no.

Mechanical 0

Electrical 0

4. **Painting:-**

- a. SBR painting is still pending only base work done.
- b. Final painting at various units is to be done.
- c. Painting of equipments / pipes etc are still pending.

5. **Filling of Soil:-**

- a. Against 19000 cum KRMPL has done only 11000 cum soil filling rest is pending. Soil filling at the pond is pending. Compression of soil is pending.
- b. KRMPL informed that FL is 113m .The flood level is 114.075m. the land of plant is higher than surrounding therefore there is no danger of water filling in the worst case.

6. **Boundary Wall:-** There are still two gaps left in the wall along the inlet pipe.

7. **Miscellaneous works:-**

- a. Road work is still pending inside the campus .Site Developments is pending .Entry gate has not been installed.

C. **Safety works:-**

A. KRMPL safety Engineer , Mr. Gulshan Kumar informed that regular training are being given to staff .Following training have been given below:-

- 1. Work at height
- 2. Electrical Safety
- 3. Confined space entry
- 4. Lifting
- 5. Use of power tools
- 6. Use & Maintenance of personal protective equipments (PPE)
- 7. Excavation training.
- 8. Hot work training
- 9. Emergency response training
- 10. Fire fighting etc.

Safety Engineer KRMPL is advised to give one heat stroke & shock mock drill training also.

- B. It is advised to use railing all around neutralisation pits and sludge thickener there are moving parts gear box of motor etc which is open and no cover is provide.
- C. For year 2022 to till date incident free man hours reported 160368 hours.
- D. While cleaning of pipe line exhaust and blower are to be used to avoid damage from H2S gas .Safety Engineer KRMPL is advised to be very vigilant during cleaning.

D. **Mechanical Observations**

- 1. **Mechanical screen at inlet.**

- OEM was not present at site in- spite of instructions given to KRMPL.
- Torque meter test has not been conducted by KRMPL at site.
- Differential level sensor shall be installed as per approved drawing.
- Screen cycle time shall be done as pe approved technical data sheet & control philosophy.
- Discharge hopper has not been fixed as per approved drawing.
- Motor canopy Supply & fixing work is still pending
- Screen Support & M12X125 anchor fastener (ss304) fixing work are still pending as per approved drawing.
- Final/finish grouting work still pending for screen & screen panel.
- Lubrication work still pending.
- Nomenclature at equipment shall be required.

2. Main pumping Station (MPS):

- All openings to be covered with checkered plate/gratings.
- Staircase hand railing not provide properly and also balance Staircase handrail for Pumphouse.
- Hydro test for Pumps discharge line is pending.
- Performance test is required for pumps in the presence of OEM.

3. Primary Treatment unit (PTU):

- Concreting of Parshall flume wall (Level Difference) rectified.
- Fine screen & belt conveyor and gate testing pending.
- Flow meter installation pending in the Parshall flume.
- Manual flow measurement scale is to be installed in the Parshall flume.
- Some piping and valve fixing work still pending.
- Painting & Finishing work are still pending.
- Testing of Mechanical screen and Mechanical grit chamber pending

4. Sludge Thickener: -

- Overload protection by Load Cell Torque Mechanism is not supplied, installed and connected.
- Gap between Scraper blade and tank floor should be maintained as 10-12 mm as per approved drawing, work still pending till date.
- Weir plate is unevenly installed at different locations. Also, sealant should be filled between weir plate (V- Notch) and weir wall.
- As per P&ID, ball valve is missing in sludge thickener discharge (flushing) line. It should be provided at the earliest.
- HDPE pipeline from dilution water pump has not been installed till date. Therefore, OEM should confirm the reason for not installing the pipeline since this was mentioned in the drawing of the Thickener.

5. Centrifuge Feed pumps: -

- Final grouting work is still pending.
- Oil filling work is pending.
- U-clamp fixing work is still pending for pipelines.

- Pump cleaning work is still pending.
- All valves lubrication work still pending.
- It was observed that Valve handwheel was broken need to be replaced.
- Drain valves line was insert in nearby drain.
- Noman culture at equipment & pipelines shall be required
- Hydrotest of pipelines are pending.

6. Dosing pumps: -

- Supporting works are still pending for all dosing pipe lines.
- U-clamp fixing work is still pending for pipelines.
- Oil filling work are pending.
- Pump & pipe cleaning work is still pending.
- Final/finish grouting work still pending.
- Noman culture at equipment & pipelines shall be required.
- Hydrotest of pipelines are pending.

7. Chlorination system

I. Caustic Solution Tank

- Caustic soda was not available at the site during the inspection; therefore testing of the caustic solution tank could not be done. OEM must conduct performance test in presence of UPJN & STC team, for caustic solution tank when caustic soda becomes available at the site.
- Level indicator system was not installed; it should be installed at the caustic solution tank.
- Permanent access for personnel for facilitating pouring of caustic soda into the caustic solution tank should be provided.
- Brick plastering and support is pending at the platform of caustic solution tank. Also staircase to be constructed to access the platform of the caustic solution tank.
- Motor canopy was not provided, shall be provided.
- All fasteners are not properly tightened, shall be rectified.
- Rubber gaskets was not available, shall be provided.

II. Chlorine Booster Pumps

- Pressure switch was not installed in chlorine booster pump (2 Nos.), shall be fixed.
- Hydro test of all chlorine booster pumps' discharge and suction line are pending and should be done before commissioning.
- OEM should provide emergency toolkit and manual for the ejector.
- Inlet Chlorine dosing and flow rate are not indicated in the chlorine dosage controller, shall be rectified.
- Motor termination cover bolt was loose for booster pump no. 1, shall be rectified.

III. Chlorine Tonner and Electrical Hoist Area

- Pressure gauge (1 No.) was not installed, needs to be installed.
- FRP hood of the chlorine tonners were not properly aligned. Also, proper gap as per the approved GA design drawing of FRP hood for chlorine tonner should be maintained.
- Weighing machine was not installed.
- Pneumatic/hydro test are pending and needs to be done for chlorine lines.
- Electrical hoist junction box cable termination work is pending

8. Miscellaneous

- Name plate for each unit & equipment's inside the chlorination building was not available at the site, needs to be installed.
- All loose and improperly fixed bolts should be tightened and fixed properly.
- Flow direction, line name/tags were not indicated, and therefore should be provided before commissioning.