VASANI
POLYMERS PVT. LTD.

Concerns in Irrigation Projects - Role of Centralization & Digitization in Resolution

Presented by : Jitender Singhal

Introduction

We **"VASANI POLYMERS PVT. LTD."** are engaged in manufacturing of PVC/HDPE/DWC Pipes & Fittings to cater various Infrastructure Projects of Governments and Leading Infrastructure Companies.

We are also having proven track record of timely & successful execution of turnkey projects of UGPL Laying/Jointing/Commissioning of pipe lines of various materials like PVC, HDPE, GRP, MS, DWC etc. up to 3000 mm Diameter .

We are also having the "AA" class license from Govt.'s of various states.

We are also having following Licenses allotted by Bureau of Indian Standards (BIS) for marking "ISI" on Pipes as symbol of quality : -

IS 4985: 2000 uPVC for Potable Water Supplies,

IS 13592 :2002 uPVC for SWR System

IS 12818:2010 uPVC for Borewell Casing Pipe

IS 15328:2003 uPVC for Under Ground Drainage and sewerage system.(UGDS)

IS 4984:2016 HDPE Pipe for Potable Water Supplies.

IS 14333:1996 for HDPE pipes Under Ground Drainage and sewerage system.

IS 16098:2013 (Part-2) HDPE Double Wall Corrugated Piping System for Drainage.

VASANI

Client List

- Sardar Sarovar Narmada Nigam Limited. (SSNNL)
- Gujarat Water Supply and Sewerage Board (GWSSB)
- Water And Sanitation Management Organization (WASMO)
- Gujarat Water Resources Development Corporation (GWRDC)
- Narmada Water Resources (NWR)
- Bihar Urban Infrastructure Development Corporation (BUIDCO) .
- Rajasthan Urban Infrastructure Development Project (RUIDP)
- Smart City- Jaipur
- Smart City Udaipur
- Larson & turbo (L &T)
- GVPR Engineers Limited
- Agriculture Departments of Various States.
- Many More……

VASANI

Concerns Related to Irrigation Projects

1. Requirement of Centralised Control System
2. Problems in obtaining NOC from Farmers
3. Shortage of Budget and Delays in Payments
4. Time Consuming Tendering Process
5. Time Consuming Process of M.B recording
6. Excessive Paper Work.
7. Preference to Pre-Cast Structures over In-Situ Construction.
8. Non Availability of Water for Testing
9. Delays in TPI Inspections
10. TDS Reconciliation
11. Digital Model for Irrigation Water Distribution Management

VASANI

Requirement of Centralised Control System

Problem :-

Departments don't have any centralised system or software to provide one place solution or control. Agency has to approach different sites offices during execution of work and even after completion of work. Approaching various site offices for several works is time consuming and expensive task for agencies and increases work load of officers. Handling agencies indulge officers in un-necessary & un-productive work. Officers are already preloaded and over occupied so necessary works get compromised . Departments are already running sort of staff. Non having software and non digitalisation leads to various issues, delays & excess paperwork.

Suggestions :-

- System should be centralised
- Software should be used for Recording, Monitoring & Control.
- All registrations, approvals, processing, monitoring should be centralised and should be recorded in a software.
- All officers should be allotted double security password, for example bio-metric as well as alphanumeric characters.
- Paperwork should be converted to digital form.

VASANI

Continued……..

- All officers should have restricted view as per their designation and nature of work. Only selected fields and data should be visible to the concerned officer. He/she should be able to see data only related to his/her allotted area and agencies
- All agencies should be registered in software with all basic data and should be allotted with their own login password.
- All work orders awarded to an agency should be visible in software with valid login password allotted.
- Agency should fill their Daily Progress Report **"DPR" in software** along with a scanned copy of documents as a proof of delivery in case of material supplied at site. Pictures may be added to show progress, if required.
- DPR should be visible to all concerned officers related to that work. Concerned officers should verify the work done/quantities. Officer should have option in software to fill to accepted quantities which may vary from the filled quantities by agency. Accumulated quantities in system can be used as Measurement Book (M.B) recorded. Only reconciliation needed at the time of billing. Estimated quantities should be pre-filled item-wise, agencies should update DPR against those pre-filled quantities only.
- Agency should record all problems observed during the execution in DPR on daily basis, so that Concerned Officers can take prompt corrective action to resolve the issues. If issues are beyond the control of the officers/department then it should be recorded in system and should be treated as basis of **"Time Extension" or Pre-closure** of work in future.
- Different level of approvals can be set with limits/ authorities.

Continued……..

- Once the work is completed agency should have to fill all data related to quantity measurements, billing details, GST/TAXES/Deduction etc. and submit as work completion statement.
- Once the work is declared as completed, message would flash on the computers of concerned officers and TPI Agency.
- The concern site officers will verify & approve field book and M.B record regarding completed work. There should be a time frame for officers to verify the completed work. Approvals will flow up-ward as approval by junior officer will flash at immediate senior officer and his timeline will start automatically.
- This will facilitate Senior officers to view all pendency's with juniors & enable them to balance the work among juniors.
- After completing all the formalities, concerned officer will click the "**submit to accounts**" button.
- Accounts department will process the bill and transfer payment online only after completing their formalities/verifications.
- Agencies should not have any need to visit office for submission of papers or payment collection. (These visits lead to an increase in chances of influence.)
- Same procedure may be applicable at Stage completion in case of big work orders where running bill payments are necessary. Stages of work completion should be pre-defined as completion % of work Estimate and R.A. bills should be paid on the basis of % completion of actual work executed so that the agency can claim running bill after completing that stage. An amount should be fixed exceeding the same running bill should be paid for smooth functioning of work.

Continued……..

- TPI agency will also approve quality online in the same data along with the pictures/Video of inspection. Reports may be uploaded and digitally signed.
- TPI should be held accountable if there are any deviations found in the quality of work after receiving an approval by TPI. In this way they will take utmost care of quality during inspection. Management of TPI agencies will also motivate their inspectors to perform their duties honestly to prevent any losses to the company.
- Everyone would have completed their work in the prescribed timeframe since the system is very transparent and everyone is accountable for the effectiveness in their work.
- This system will provide transparency between departments and agencies. Departments will have an option to see the progress of work and agencies to see payment status.
- Agencies will have to be transparent in filling daily progress report since the data entered in system on daily basis will have a minimal chance to be managed later on. Thus it will reduce the chances of " SCAM/Ghotala" because managing false data on the daily basis is not possible. Moreover, agencies would not have an option to fill DPR in system for works which are not allotted to them. Since the allotment is centralised so no chances of payments for work not allotted to them.
- Planning and designing should be done keeping in view the incorporation of operations & maintenance in software itself. Operational data like supply of water at different level and maintenance work should be monitored by management in software itself. Data should automatically collected in software through sensors, control valves etc.
- Top Management will have ready data for Monitoring, Controlling & for Decision Making. Management will have the consolidated reports at one click which is filterable location wise, agency wise, item wise, stage wise, officer wise, day wise, progress/delay report with reason of delay etc.

Problem in obtaining NOC from Farmers

Problem :-

In govt. irrigation schemes, as per our policy, agencies have to obtain NOC from individual farmers for the execution of work in their fields. This is the most tedious and time consuming job as agencies have to search each and every farmer & have to rush to their homes, farms , markets. Even if someone is out of the village, they have to wait for them to return. Approaching farmers at their places at their convenient time is a very cumbersome job & impractical process. The situation worsens when the person whose name appears in the land records has been died, then agencies don't have information regarding his successors. Although finding the successors if another difficult job, even if agency succeeds in finding them their internal disputes of succession again makes agencies helpless as nobody gets ready to sign the NOC. Even sometimes farmers ask money to sign the NOC.

Suggestions:-

- Instead of obtaining NOC from farmers, Govt. should give the rights to the agencies to perform their job without any permission from farmers along with work order. Work order itself should be treated as permission letter to perform work.
- If this is not possible by what so ever reason, then department should obtain NOC from Sarpanch/ Talati/Gramshevak/Mandali or any other Block Level Authority of that area and that NOC should be uploaded in the software. Agencies should be bound to complete the work within the given time frame given in NOC after uploading the same.

VASANI

Shortage of Budget and Delays in Payments

Problem :-

A major cause that slows down the progress of execution is the shortage of finance or delay in payment. At times projects don't have sufficient budget/funds to pay to the agencies or sometimes the process is so long that agencies do not get the payments on time. They have limited sources of finance and once agencies' funds get exhausted, the progress of work get affected negatively. In case of this kind of delay concern officer have to suffer along with agencies as agencies keep questioning officers for payments and time of payments. This situation put officers in embracing position.

Suggestions:-

- Before starting the project, budget should be pre-approved and the department should have funds in hand or scheduled before allotting work orders.
- Process of payments should be short but fool proof. Suggested this should be monitored centrally and through a software as discussed earlier in detail.
- In case of delay in payment department should pre-inform agency about shortage of funds & compensate them against the **"Interest Loss"** suffered on actual work executed. Agencies should be granted time extension for completion of work order in respect of delay in payments.

VASANI

Time Consuming Tendering Process

Problem :-

Our tendering process is too long and uncertain. Sometimes, there are delays in tender opening, sometimes cancellations also happens which discourage the capable agencies to participate in tenders due to disturbance in their overall planning and finance.

Suggestion :-

Instead of going with the conventional tendering process, Govt. should encourage centrally controlled **'Unit Rate Tenders'** that are easy to understand and have less chances of manipulation.

VASANI

Time Consuming Process of M.B recording

Problem :-

It is a common problem of agencies that delays occur in recording M.B. Presently its Site officer's job to take measurements, record in manual books, complete calculations and submit to office for further process. Most of the time agency's having their staff to help but they can not extend that help as this is site officers job only.

Suggestion :-

Agencies should prepare the measurement sheet and site officers should check and accept the same after making necessary corrections, if any. This will save their valuable time and they would be able to focus on the quality work instead of spending time on lengthy paperwork. As suggested, if the software system is implemented, DPR & measurement sheet will be prepared by the agency through software itself and an officer would be monitoring that on the daily basis. So at the end of completion of the work/stage, the consolidated measurement sheet will be prepared by the agency and officers would only need to check and approve only. This will help in fast updation of Measurement Book (M.B)

VASANI

Excessive Paper Work

Problem :-

Agencies have to pass though a lengthy paper work at different stages, starting from tendering to releasing the security deposit. By the addition of papers, even a small work order, a file of n number of pages is prepared, all offices keeping copies of records in their offices which contributes in making govt.

Suggestion :-

Centralisation and digitalisation is effective solution for the same.

VASANI

Preference to Pre-Cast Structures over In-Situ Construction.

Problem :-

During the laying and jointing process, agencies have to perform the petty civil works, like Kundies, wells foundations etc. on site. Quantities for the same are very small and they need to be constructed in the interior places. Arranging the transportation of material like Sand/Aggregate/Cement is a difficult job. There is a lot of wastage also, because it is not possible to bring back the excess material. Curing tends to be a major problem in any civil works. It is very difficult to cure the petty works as per the norms, in absence of water and the distance.

It may lead to a compromise in quality and later on, to failures.

Suggestion :-

Use of **Pre-cast** material may be the solution for these petty civil works.

Preference to be given Pre-Cast Structures over In-Situ Construction as far as possible.

It will improve the quality and will also save time required for installation & curing.

VASANI

Delay in TPI Inspection

Problem :-

Agencies face delay in quality inspection of material due to non availability of manpower in the inspection team. TPI agencies are not able to plan manpower in advance due to the lack of pre-information system. This time gap leads to a delay in the completion of project.

Suggestion :-

TPI should remain in a closer touch. Communication regarding stages of work with departments as well as agencies should be faster and more regular. Formal communication system should be there to assess the requirement of manpower and availability of the TPI agency. Selection criteria of TPI agency should ensure availability of adequate manpower with TPI agency. As suggested, if the TPI agency is given a login/password and access to software they can know requirements in advance, will be able to depute the required manpower within stipulated time. Since TPI will get the advance information even then if they delays in inspection, inspection fee may be reduced in ratio of quantum of delay.

VASANI

Non Availability of Water for Testing

Problem :-

Non availability of water also becomes reason for delay in testing.

Suggestion :-

Department should have an arrangement of water for testing or should have an alternate method of testing. If department fails to arrange both of above than payments of agencies should be released.

VASANI

TDS Reconciliation

Problem :-

Agencies face problem in reconciliation of TDS as tax is deducted while making payment. does not appear in AS26 (online form available on Income Tax site). In absence of any centralised office, agencies have to rush to different divisional offices.

Suggestion:-

Solution already covered in Centralisation of system. Tax deduction will be automatically converted in TDS return and posted on Income Tax India's site. There would not be any chances of mismatch.

VASANI

Digital Model for Irrigation Water Distribution Management

- Planning and designing should be done keeping in view that it can be controlled through software. Flow measuring valves, sensors, pump & SCADA should be incorporated in designing to measure & control the flow of water.
- Water supply should be measured in litres instead of hector's and data should be collected main canal , minor wise, sub-minor wise, farm wise, farmer wise, etc. in system itself through software. This system can be applied to whole command area of dam and all concern officers having access to software can view data in software itself.
- Computerised control systems should be installed from main canal level to end point (Farm) level.
- Water should be released as per requirement of crop/farms entered in system and released through computerised system automatically.
- Billing should be done digitally and directly debited to farmers bank accounts through system itself.
- Through this system wastage/ seepage /mis-use of water can be measured/reconciled/controlled automatically.
- Micro Irrigation system also possible and beneficial through this system, which will save huge amount of water & money.
- Detailed Project report/cost estimate/modus operandi available as separate file can be discussed in detail separately.

VASANI

THANK YOU