

TECHNICAL DIRECTIVE NO: 71

18/02 (3)

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30000/5A/MAP/DG Sectt/ 40 /Directive

17 Feb 2021

All PMs

QUALITY CONTROL

1. Ref the fwg :-

- (a) This HQ directive No 68 issued vide note No 30000/5A/MAP/DG Sectt/17/Directive dt 23 Oct 2020.
- (b) This HQ directive No 70 issued vide letter No 30000/5A/MAP/DG Sectt/35/Directive dt 08 Jan 2021.

2. Several directives have been issued in the past to ensure high quality constr and robust docu not only to improve the process as whole but also pin point the lapses and iden the indl responsible the same. While, utmost care is needed during plg/ exec stage, the need for careful handling of the issue during DLP and thereafter have emerged in the recent past.

3. In one of the case, poor handling of the issues during DLP and permitting superficial rectification of defects changed an apparently good project into one of the worst project. The Court of Enquiries (CoI) revealed the weakness of existing processes and lapses on part of several execs, contractors and DPMCs as elaborated in succeeding para.

Case Study.

4. In one of the DG MAP Project a total of 324 DUs, (81 Blocks of 4 DUs in G+1 config) were planned and exec in time bound manner (within a period of 20 months) and general finish was liked by the user. The reported defects were rectified superficially and based on certificate from GE (Maint) BG was released after DLP got over.

5. However, soon after H/T problems emerged specially spalling plaster. Maint fund was used for grit finish (new item of work) but the quantity was found to be inadequate. The diversion of maint fund for new item of work) had adverse effect of rectification of other routine defects. The minor defects changed to major defects over a period of time. Hence, need was felt for special repairs. The chronological sequences of events are as under :-

- (a) The maint fund spent for the entire set of DUs increased progressively from 33 Lacs in 12-13 to 92 lacs in 18-19.
- (b) Rs 39 lacs was spent on new item of work (Grit finish) to 10 Blocks which did not succeed and spalling was noticed within short span of time.
- (c) A fresh Special Repairs (SR) for grit finish to all blocks costing 3.0 Cr was proposed but could not be sanctioned due to IFA obsn.
- (d) Later CE Zone visited the site and directed for comprehensive repairs. The GE projected RIC of Rs 17.28 Cr which incl rehabilitation of few RCC members and enhanced specs. The GOC Area visited site for verification of scope.

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(e) During visit he was info that structures may be unsafe. Hence firm rehabilitation firm was hired for indep audit of 10 worst affected blocks (40 DUs). The audit findings are as follows :-

- (i) RCC members- Conc strength found M-10/ M-15/ M-20 in place of M-25.
- (ii) Inadequate depth of conc cover.
- (iii) Less mortar (1: 6.5 to 1:9) in plaster and brick masonry and less plaster thickness.
- (iv) High probability of corrosion in steel reinforcement as more than 50% of conc samples had pH value less than 11.5 with deep carbonation.
- (v) Poor quality of pointing in brick masonry.
- (f) Based on report cost of SR for 20 blocks (80 DUs) as 14.25 Cr which was extrapolated to all block and total cost of SR was assessed as Rs 67.06 Crs.

6. In view of the excessive SR cost, the Area HQ recommended Dem of DUs. This was followed by a Col. The Col revealed the following :-

(a) **Completion Certificate**. The GE (Maint) issue of completion certificate without approval of the Stn Cdr although defects (i.e spalling plasters, cracks, termite issues and seepage, rusting of steel rail of staircase, withering of roof tiles, etc.) were reported by RWA and GE (Maint). Only superficial rectification of defects (i.e. regarding termite, seepage, etc) was carried out and spalling plaster was giving very shabby look.

(b) **Water for Contr**. Amount paid to govt agency but no water was recd. The contractor was to arrange water for construction. However, use of bore well water permitted for constr despite poor quality of ground water in near vicinity. The quality of water tested at different time frame gave conflicting results (i.e fit for drinking and unfit for drinking) raised doubts and poor quality confirmed during indep agency.

(c) **Warranties**. Contr was to provide following guarantee on stamp paper as per E-in-C Br policy letter 37696/GEN/POL/E2W (PPC) dt 27 Jul 2006. These were not fully exploited to get the defects rectified incl rectification of co-lateral damages :-

- (i) Structural stability incl earth quake for 10 Years.
- (ii) Leakage/ seepage for 10 Years.
- (iii) ATT for 10 Years.
- (iv) Certificate that structure has been constructed as per BIS norms and is structurally safe.

(d) Other Key lapses :-

- (i) TMT bar (> 18mm) procured from secondary producers.
- (ii) Wrong composition of PMG {i.e PO: Inf Offr; Member-1: PM (East) and PM (West)} and lack of supervision. The minutes issued after PMG visit and action taken thereon could not be traced.
- (iii) Prolonged delay in repairs of damaged external plaster had increased co-lateral damages (i.e. deep carbonation, rusting of steel, cracks, etc.)
- (iv) Few of key documents (i.e. prelim investigation reports, execution drgs, site documents and records) could not be found.
- (v) Actions on defects pointed out by STE, CVC, Stn Cdr and visiting senior offrs could not be traced.
- (vi) Action on defects pointed out by H/T BOO, GE/ user during DLP and BOO ordered before expiry of DLP could not be traced.
- (viii) Maint fund not effectively utilised.
- (ix) Maint expdr could not be verified from the entries in the RPMBs etc.

7. **In view of the above, there is need for utmost care not only during plg / exec but also during DLP and H/T stage.** The key issues to be kept in mind are as under :-

- (a) Quality control during exec and preserving test reports and other key documents / correspondence as per laid down guidelines.
- (b) Extremely cautious approach while processing any variation from original conditions given in contract docu; especially steel procurement, design mix, vintage of cement and its procurement from main producer, water used in constr, etc.
- (c) Proper rectification of defects pointed out by DEPMC/ PM/ PMG/ Stn Cdr/ STE/ CVC/ visiting Sr Offrs. The superficial defects resurface again after some time and cause extensive co-lateral damage.
- (d) Follow all instr in respect of final clearance and keep Stn Cdr in picture at all time.
- (e) Unauthorised deviations from contracts and procedures will **NOT** be undertaken.

(Pawan Pandey)
Col
Col Tech
for DG MAP

DDG 'B'
Jt DG Team 'A'
Team 'A'
Team 'B'
Contract Sec 'A1' & 'A2'
Contract Sec 'B1' & 'B2'
GSO2 (IT) Coord

✓ You are requested to upload the above letter in lotus to all PMs and upload the same on DG MAP website.