

**Government of Andhra Pradesh**  
**ABSTRACT**

Irrigation – Major, Medium and Minor irrigation Projects Preparation of Projects Estimates – Annual review and periodic revision orders – Issued.

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**IRRIGATION & POWER (PROJECTS WING) DEPARTMENT**

**G.O. Ms. No. 236.**

**Dated. 22-07-1980.**

Read the following.

1. From the C.E. Major Irrgn & Genl. Lr. No. RC. F2/68421/79, dt. 18-10-1979.
2. From the C.E. Major Irrgn. & Genl. Lr. No. F4/7071/79-4, dt. 1-11-1979.

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**ORDER:-**

A large number of projects, Major/Medium/Minor, are being taken up as a part of different plans and schemes, Depending upon the availability of funds these works have spread over a considerable span of time. Major Irrigation project particularly multipurpose projects invariably take 5 to 10 years for completion while the medium irrigation projects take about 3 to 5 years. The Minor irrigation schemes are expected to be completed in two working seasons spread over a period of little more than one financial year. However, due to financial constraints many of the schemes take much longer for completion. For a proper financial analysis of these schemes it is necessary to prepare estimate in detail to the extent possible at current schedule of rates with an assessment of final cost on completion assuming a certain rate of flow of funds. The estimates should make adequate provisions to meet contingencies for unforeseen or new items of work that may be found necessary at a later date to fulfill the objectives of the project. Although administrative approval by govt. to any project is confined to the basic cost of the project. Although administrative approval by govt. to any project is confined to the basic cost of the project estimated at rates current at the time of sanction, it is necessary for budgetary allocation and planning of expenditure to estimate the requirements of funds year by year during the period of construction of the project. Such an assessment will have to take note of increases in cost due to inflation in prices occurred and due to possible excess tender percentage variation due to initial approximate investigations etc. It is also necessary to review the cost of a sanctioned project periodically and prepare revised estimates from time to time in order to update the cost of the project for a clear picture of final costs on completion.

2. A detailed discussions on the above mentioned issues was held at the workshop organized at Vijayawada during Sept. 79 when several officers of the Irrigation department participated. Based on these discussions, the C.E. (Major Irrigation & Genl) has sent proposals to govt. for approval vide reference first read above. He has also issued orders through a circular to all the officers concerned regarding the manner of preparation of estimates and their annual review vide reference 2<sup>nd</sup> read above. Govt. have been considering for sometime past the procedures to be adopted for preparation of estimates, their periodical review and submission of revised estimates, since the normal provisions of code rules do not appear to be adequate to deal with irrigation projects, whether major, medium or even

for that matter minor irrigation schemes submission of revised estimates, since the normal provision of code rules do not appear to be adequate to deal with irrigation projects whether major, medium or even for that matter minor irrigation schemes.

3. After careful consideration of all the aspects of the problems and keeping in view the suggestions made by the CE (Major irrigation general) and their requirements of the Govt. in the matter of annual planning and budgeting, the following detailed instructions.

- 1) Preparation of Project Estimates.
- 2) Annual review of Project Estimate.
- 3) Revision of Project Estimates.
- 3.1.0. Preparation of Project Estimates.

3.1.1. Regarding of the manner in which the detailed estimate of a project is prepared covering different companies of the project, it is necessary for purpose of budgetary control and for watching performance, to have a general abstract of the project showing provisions under various heads of accounts appearing in the sanctioned budget. The budgetary heads of control are direction and Administration, Machinery and Equipment, head works, Main canal, Tributaries, field channels Bldgs, Drainage etc., estimated costs under each of these heads of account will be based on three types of estimates viz., detailed estimates, proforma estimates and lumpsum estimates. The general abstract of the project estimate should be prepared so as to and furnished three parts, attributable to each type of estimate and furnished to government in the form indicated in Annexure-I to this order.

Part-I. Detailed estimates should be prepared for head works and main canals including structures based on detailed filed investigation and preliminary designs approved by competent authority.

Part-II. Distribution system, FCs. And Drainage, proforma estimates should be prepared based on detailed estimates for a few typical irrigation/drainage blocks. For masonry works and structures of contemporary works to other statistical and historical data and cost indices as available. For bldgs., proforma estimate should be prepared based on approved plinth area rates and approved scale of plinth area for different types of residential and non residential buildings.

Part-III. For works like access roads, electricity telephones, water supply, sanitation, education, recreation plantation maintenance during construction snadush other items normally provided under 'M' plantation 'O' miscellaneous, and 'P' Maintenance Lump sum provisions should be made as a percentage of the cost of other works.

3.1.2: The cost of the project so worked out will be the basis cost of the purpose of administrative approval.

3.1.3: In addition to the basic cost of the project for the purpose of administrative approval it is necessary to indicate the assessed final cost of the scheme taking into account the possible excess tender percentage, additional or new items of work contingent on the project and finally the possible escalation in prices due to inflation year after year till completion of the scheme. While the excess tender percentages and contingencies can be added on a percentage basis to the basic cost to arrive at the

gross amount of work excluding price escalation, it is necessary to split up this gross amount on an annual basis according to the anticipated funding each year and to such annual cost a suitable percentage should be added year after year for escalation of prices due to inflation. This escalation will be at half the rate for the year of estimation and at full rate for subsequent years compared annually. The rate of inflation should be assessed on the basis of the past values and future trends. The assessed final cost of the project will then be the total cost so arrived at inclusive of escalation of prices. This final cost will be useful for planning and budgeting annually.

### 3.2.0: Annual review of project estimates:

3.2.1: The cost of project assessed at the planning stage is to be defined as the work progresses and for this reason, annual review of the project estimates is necessary. This review should be done during September/October each year based on the expenditure up to working season ending June and the result of such review sent to Government by December every year in time for planning budgetary allocations. For the purpose of this annual review, works under the project should be classified into four categories.

- Category –A : Works already completed.
- Category –B : Works in progress or let up.
- Category –C : Works for which detailed estimates are prepared but contractors not settled yet.
- Category –D : Works for which detailed estimates are not prepared.

Category – A: The cost under this category will be the actual expenditure on completed works incurred ending June plus unpaid but established liabilities on these works.

Category – B : For works of this category, a suitable extra percentage has to be added on the balance work remaining to be done in order to allow for variations during execution, increase in issue rate for deptl. Materials, any escalation in prices etc., this extra percentage will have to be based on past experience in the project and future projection.

Category – C : For works of this category, besides the percentage addition as per category (B), there should be a further addition towards anticipated tender excess (Normally it is higher for bigger contracts and lower for smaller contracts) based on the experience.

Category – D : For works of the category, besides the extras mentioned for categories ‘B’ and ‘C’ another addition will have to be made towards possible increase in cost as a result of detailed investigation of estimation. This allowance should once again be based on past experience on works for which variations were noticed on detailed investigation/estimation.

3.2.2 : The total cost of components (B), (C) and (D) should then be phased out yearly till be anticipated year of completion as distinct from the original date of completion of the project and annual escalation added to each years outlay to provide for

anticipated inflation added to each in prices. This escalated cost of works together with the cost of works already completed (Category A) will be a fair estimate of the final cost of the project and will be a reinforcement over the initial estimate prepared at the planning stage.

### 3.3.0 Revision of Project Estimate:

3.3.1 There has been a good seal of controversy especially in the case of large irrigation of multipurpose schemes, regarding the frequency and the manner of preparing revised estimates. Obviously the provisions of para 214 of PWD code cannot be applied, as they are for the preparation of revised estimates of projects. This problem was discussed in detail at the workshop held at Vijayawada during Sept 1979 when several officers of the Irrigation Dept. participated. Based on these deliberations the C.E. (Major Irrigation & Genl) has sent his proposals to the Govt. for issue of instructions. After careful consideration of the problems involved Government issue the following instructions for the following instructions for the preparation of revised estimates for individual works as well as for projects – major, Medium of Minor.

### 3.3.2 Major Irrigation Projects:

a) Estimates for individual works:- Once the project as a whole is approved administratively by Govt. technical to individual works is issued by the competent authority according to powers delegation under the Code, as and when the works are proposed to be taken up. All such individual estimates should be revised no sooner the expenditure on each work covered by an individual estimate reaches the level of 50% of the amount of estimate technically sanctioned. A second revision of all such estimates will be necessary let out, provided there is an increase in cost ever the revised estimate sanctioned earlier. Sanction to such revised estimate shall be ordered by competent authority according to delegation of powers. If there is no excess over the initial estimate of the first revised estimate only, a workslip need be approved by competent authority for the deviations, if any.

b) The project estimate as a whole: This shall be revised once every five years commencing from the last year of the 5 year plan in which the project estimate is administratively approved for the first time. The method for revision of project estimate should be the same as for the annual review of project estimates mentioned in para 2.0 above.

c. The revised project estimate should be sent to the Govt. in the month of December of the last year of each five year plan.

### 3.3.3. Medium Irrigation Project:

a. As far as individual estimates are concerned the same procedure as for major irrigation projects shall be followed for medium irrigation projects also.

b. As regard the project estimate as a whole, it shall be revised as sooner the expenditure under the project reaches a level of 50% of the amount administratively approved for the project and revised for the second time when the level of expenditure reaches 100% of the amount originally approved administratively. The procedure indicated in para 2.0 above should be followed while preparing revised estimate.

3.3.4 Minor Irrigation Projects:-

a. In the case of Minor Irrigation schemes, the estimate for the scheme as a whole should be revised no sooner the expenditure reaches a level of 50% of the amount administratively approved for the scheme.

b. The total value of lump sum amounts in the revised estimate of Minor Irrigation schemes shall not exceed 5% of the cost of works for which detailed estimates are prepared.

4. This order issued with the concurrence of F & Plg. (PW) Dept. vide U.O. No. 175/F.VII I (2)/80-1 dt. 9-4-1980.

(By order and in the name of Governor of Andhra Pradesh)

Sd/-  
Secretary to Government.

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Office of the Chief Engineer I&P (PW) Dept. NSRC Hill colony.

Endt. No. 31228-TS8/T42/77, dt. 11-10-80.

Copy communicated to all the SEs of NSRC E.E. QC&I Divn, Vinukonda for information and necessary action.

C.Janardan Rao,  
Chief Engineer I/C NSRC.

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Office of the Superintending Engineer NSC Circle, Kurichedu.

Endt. No. DB/D3/W-1/(GL) 2401 gl dt. 26-12-80/2-1-1981.

Copy forwarded to all Executive Engineers for information and necessary action.

C.V. Subbarayudu,  
Superintending Engineer,  
N.S.C. Circle, Kurichedu.

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Office of the Executive Engineer, NSC Divn. 6, Kurichedu.

Endt. No. 87, dt. 4-2-81.

Copy forwarded to all sub-divisional officers for information and necessary action.

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Sd/-

P. Lakshmanaswamy,  
Executive Engineer,  
NSC Divn. 6, Kurichedu.

//t.c.f.b.o.//

Sd/-  
D.A. Manager.