

**PROCEEDING OF THE TRAINING PROGRAMME ON
“QUALITY ASSURANCE”
HELD ON 27TH & 28TH FEBRUARY 2007**

The Design & Research wing of Department of Water Resources organized a two days' training programme on “ QUALITY ASSURANCE ” on 27th & 28th February , 2007 at Dam Safety Conference Hall , Secha Sadan , Bhubaneswar .

As many as 90 State Engineers from different fields like Design & Research, execution & Quality Control participated in it.

The training programmed was inaugurated by Er. Harish Chandra Behera ,Engineer-in-Chief, Water Resources. The inauguration session was co-chaired by the Chief Engineer, Designs &



Research, Chief Engineer & Basin Manager, Lower Mahanadi Basin, Chief Engineer & Basin Manager, Brahmani Right Basin & Chief Engineer Project Planning & Formulation.

At the outset the Chief Engineer, Designs & Research requested the Engineer-in-chief, Water Resources to preside over the inaugural session of the programmes .

The Engineer-in-Chief, Water resources welcomed the participants & resource persons , introduced the topic & its importance . He expressed that such programmes will be helpful in understanding the subject so that officers involved in planning, design & construction will be extra cautious in quality assurance leading to enhanced efficiency .

The Chief Engineer, Designs & research expressed that the training programmed should be viewed as an interactive one & requested all the participants to share their experience & knowledge with others to make it a successful one .

The C.E.&.B.M, Lower Mahanadi Basin with examples of 100 years old structures of Mahanadi system described our illustrious past in the field of quality control .These structures are very strong and functioning properly because of proper Quality Control measures followed at that time with reference to construction materials and Construction Management . He stressed that such programmes should be conducted at different field units in the level of S.E & C.E to make it more effective .

The C.E.&.B.M, Brahmani Right Basin stressed upon to attach more importance on quality assurance so as to enhance the efficiency & safety of structures.

Sri N.C.Mohanty, Deputy Director, O/o the C.E,D&R described different topics to be discussed in different sessions of the programme & introduced the resource persons.

The programme contained eight papers relating to the subject .

The first paper was on “Estimation of properties of concrete structures (Non Destructive Test)” & Presented by Er. N.K.Mohapatra, Director, OWPO & Er. Avinash Raul, Asst. Director. It was interesting & informative . It depicted the Non Destructive Tests conducted on different structures of the Power House of UIHEP as a case study. Many trainees keenly participated in the discussion mainly relating to limitation of Non Destructive Test (NDT) and its application as an aid to quantify quality of different structures even after the end of construction & the at the time of maintenance .

The second paper was on “Factors affecting Quality Assurance” presented by Er. Subrat Rath, Dy. Director, OWPO explained in detail on Quality Control, Quality Assurance & their importance .

The third paper was on “Quality Control Standards” & presented by Er. P.K.Patnaik, E.E, Quality Control Division, Berhampur & Er. L.K.Sabat, Asst. Engineer . The paper had elaborate depiction of BIS provisions on procedures to be adopted in collection of samples,method of testing of samples & foundation exploration.

The next paper was on “Different Tests on soil, Methodology for collection of samples” by Er. D.K.Swain, Executive Engineer. In the absence of the resource person it was presented by Er.A.Swain, Executive Engineer. There was an interesting discussion on the topic mainly relating to estimation of shear strength parameters of soil for different test conditions used for earth dam stability check .



The fifth paper was relating to role of Quality Control & Quality Assurance in construction management. Er. R.C.Tripathy, Ex-Engineer-in-Chief,WR with his vast experience in the field of design & construction, vividly described the role of quality control & quality assurance in increasing efficiency in construction with many examples .

Another topic on “Vertical Pile Load Tests and Acceptability Criteria - A case study” was presented by Orbital Pvt. Ltd., Cuttack.

Er. N.K.Das, Executive Engineer, Cuttack Investigation Division, who has a long experience in Quality Control works, presented a paper on ‘Quality Assurance’. He emphasized on methodology in collection & testing to achieve quality .

The 8th paper “Cracks in the Hirakud Dam remedial measures there of” was an extremely interesting topic presented by Er. S. Patri, Ex-Chief Engineer, Water Resources. The paper provided an insight in to different causes of cracks in masonry and concrete dams & spillways and the roll of Quality Control measures in controlling them .



All the papers were discussed in detail and participants exchanged their ideas & experience .

At the end, a few suggestions were concluded from the discussion & these are as follows .

- *To be more effective, the field units need to conduct training programmes at their level.*
- *Practical training programmes for Asst. Embankment Inspectors / Field technicians should be taken up at appropriate levels.*
- *At the time of testing, if any deviation from normal is noticed, then it should be cross checked .*
- *IS-456 should be circulated among field engineers to refresh their memory on concrete.*
- *Documentation on quality aspect needs to be properly maintained. Audio-visual records may be properly maintained for future use.*
- *Rates should not be negotiated beyond a certain limit for the single purpose of economy which may result in bad quality .*
- *Completion reports / document should be enclosed with final bills .*
- *A separate quality Control Organisation should be set up in the organization.*
- *Pre-fabricated structures can be used for smaller ones.*
- *Special care should be taken in properly saturating soil test samples by using moulds as done in CSMRS to obtain proper results as agreed upon by C.R.O.s present in the programmed.*

The concluding session was conducted by the Chief Engineer, Designs & Research under the Chairmanship of Engineer-in-Chief, Planning & Design who appreciated the usefulness of way the training .



The session was concluded by the Chairman after the Director, Research expressed thanks to the Chair, Chief Engineer, Designs & Research, Director, Head Works & Computer, Director, Canals & participants for their contribution to the training programme.