Quality Assurance and Quality Control

Quality Assurance and Quality Control are extremely important aspects of any engineering or construction project without which successful completion of the project can't be imagined. In fact, these two are integral parts of virtually any project one can think of. Proper implementation of Quality Assurance and Quality Control not only results in a sound project but also leads to more economy by means of optimisation. It's hence important to realise the meaning or the definitions of the terms Quality Assurance and Quality Control. That's what this post is all about.

Quality Assurance : Quality Assurance or QA is the process of identifying or deciding all the quality requirements for a project, identifying existing quality documents such as codes, specifications etc. that are relevant to the quality requirements of the project and making them available for use, preparation of new project specific quality documents such as Project Quality Plan (PQP) or Quality Assurance Plan (QAP), Inspection Test Plans (ITP), Job Procedures (JP), Project Specifications etc. that would provide the necessary framework or guidelines for ensuring that the planned or targetted quality requirements (quality goals) for the project are achieved in a systematic and timely manner.

Quality Assurance includes all those quality parameters or guidelines that would ensure that a project or a product meets it's planned or targetted quality by it's stakeholders or the producers. All the documents providing quality parameters or guidelines for that purpose are part of quality domain and are called QA documents. Examples of QA documents are the Project Quality Plan (PQP) or Quality Assurance Plan (QAP), Inspection Test Plans (ITP), Job Procedures (JP), codes and so on.

Project Quality Plan (PQP) or the Quality Assurance Plan (QAP) is the most elaborate quality document in a project. Ideally, it provides the complete framework or comprehensive guidelines for achieving the planned or the target quality for all aspects involving the project such as planning, design, engineering, construction, procurement, document control etc. etc.

QA documents like Inspection Test Plans (ITPs), Job Procedures (JPs) etc. are mostly construction specific. Examples are ITPs and JPs for concreting, earthwork, structural steelwork, grouting and many more, all of which are construction activities.

If the quality parameters or the guidelines provided in the QA documents are followed properly the ultimate quality target for a project, product etc. would be achieved. To sum up in a simple way, Quality Assurance is all about planning or finalising the quality targets for a project and then showing the ways of achieving the same clearly.

Quality Control : Quality control includes all those tasks or activities performed in ground as per the quality guidelines or framework prescribed in the Quality assurance documents such as Project Quality Plan (PQP) or Quality Assurance Plan (QAP), Inspection Test Plans (ITPs), Job Procedures (JPs), Project Specifications etc. in order to ascertain that the quality targets as laid down in the QA documents are actually achieved in a systematic manner as suggested in these documents. The quality documents generated while performing these tasks are Quality Control documents or QC documents.

Let's consider a very common construction activity, say, concreting in order to have a clearer picture of quality documents. The framework or the guidelines for achieving the desired or target quality for concreting are provided in QA documents such as ITPs, JPs, codes and so on. As prescribed in these documents various activities like designing concrete mixes, conducting laboratory tests, doing inspections etc. etc. are performed. These are nothing but Quality Control activities and the resulting documents like the concrete mix design reports, laboratory test reports, inspection reports etc. are QC documents. Similarly, calibration of measuring and test equipments and conducting quality audits are QC activities and the resulting calibration and audit reports are QC documents. There are plenty of examples like these.

Also, while the forms for recording laboratory test results, calibration results etc. are actually QA documents, they become reports or QC documents when they are filled with laboratory test results or calibration results.

Quality Control is usually performed by contractors, manufacturers, suppliers etc. and often has to be approved by their clients or the representatives of the clients such as the consultants.

Source: http://civilconstructionresourcez.wordpress.com/2012/04/14/quality-assurance-and-quality-control/