

GETTING IT RIGHT THE FIRST TIME BY ADOPTING QUALITY ASSURANCE SYSTEMS PROCESSES

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In May 1999 The School of Chemical Engineering, University of Adelaide, embarked on the journey of establishing the International Standard ISO 9001 Quality Assurance Systems. This system ensures that the School of Chemical Engineering continually improves the delivery quality of services to its students, its clients and its other stakeholders.

This paper describes how a university school utilized ISO 9001 Quality Assurance Systems in its endeavour to be a leader in its field of tertiary education.

The Standard specifies what a company is required to do, but not how. Most of the requirements are common sense approaches. They include good business practices, identifying customers requests, and efficient product quality and delivery. Appropriate staff training, identifying and developing of good work processes and ongoing reviews to ensure continuing improvement are mandatory. This requires continual documentation of processes of activities carried out daily in the School.

The workshop had to identify:

- Who their clients were.
- What tasks were involved in the projects, and services they would be required to provide, and,
- What processes and systems needed to be developed and adopted to ensure ongoing improvement to the quality and efficiency of the services they provided to their clients.

The School of Chemical Engineering developed a "*Quality Manual*" which included a Workshop Policy section. After project policies and procedures were developed and approved, they were included in the *Quality Manual*. Once initiated the main task was to ensure that all workshop clients followed the procedures in the *Workshop Job Management Flowchart*, (Attached) to have a project registered for production by the workshop. Unless a project is registered at the office, no work on the proposed new project can be commenced. This policy also requires ongoing education of any new staff during their school induction process. This is pivotal to ensure continual commitment by all prospective workshop clients to the Quality Assurance

The first step was to analyse the type of services required by the workshop to provide, and openly discuss these with all stakeholders, including academic and general staff, together with other clients to decide what we were trying to achieve and then make the commitment to improve our operations.

The workshop identified the need for planning, policies, development of workshop processes and formal documentation to record project data on its services.

The main processes developed to attain these standards were:

- Workshop Job Management Flowchart - Displays procedures required for projects to be designed and ratified for functionality, safety of use, and ability to be manufactured.
- Project Registration Form - Contains details of client, name of project, list of interested parties, risk assessment, and source of funding. When this is completed it must be authorised by project supervisor and Business Manager, to allow project to commence.
- Formal data recording forms – For recording project times and any project information eg: Drawings/Photos of equipment/Costs/Researchers and staff involved etc.
- EWA (Equipment Work Authorisation) hazard checklist – Project is checked to comply with OH&S requirements.
- Project task form – Records various tasks performed by Technical Staff.
- Equipment “Approved Supplier”, purchasing system. – To maintain quality of products purchased.
- Quality Improvement suggestion provision – to maintain the ongoing review of processes.
- Recommendation for new supplier – This is provided to the management to be approved and included on the list of preferred suppliers. This ensures quality standards of suppliers. At any time a supplier can be delisted if they do not meet quality standards.
- Equipment calibration register – Records that regular testing of gauges used in the school laboratories is carried out.

Note:

It is essential that you never have Policies, documentation and procedures that your staff and clients do not understand or don't use. They must be clear, short and easy to use.

Case study:

A Post Graduate Student required the workshop to construct a water tunnel for his PhD. The workshop staff were provided with very inadequate drawings and information about the project, so a lot of time was wasted sorting out design and manufacturing problems. After many hours had been spent on the project. eg: Through unavailability of materials requested, modifications to design both in desired functionality of research rig not being achieved, difficulty in manufacture, and incurring extra costs . After the School adopted the ISO Quality Assurance Systems, he approached the workshop for a meeting to discuss the design and its proposed manufacture. Once we had agreed on the design and method of manufacture, he followed the path of the *Workshop Job Management Flowchart* (attached) for formal registration as a project. This planning meeting identified the design, materials required, staff member who would be involved, and the estimated time to complete work. During construction, data of purchase of materials costs, suppliers names, and photos of equipment were recorded. Three years after the water tunnel had been in operation, another one which needed some modifications to the original design was required to be constructed for further research. The workshop staff with the aid of the original projects data previously recorded, was able to construct the new modified equipment more efficiently with less hold ups.

Benefits

- Control of Workshop management
- OHS&W requirements compliance
- Improved efficiency from:
 - Formal workshop processes
 - Better planning

- Continual Improvement through regular reviews
- Recording data/future reference

Conclusion

While more time is spent on planning of projects, there is less wasted time in modifying original design.

Since International ISO 9001 Quality Assurance Systems was adopted in 1999 by the School of Chemical Engineering, it has been audited and certified by Quality Assurance Services on a regular basis. It has provided the workshop staff with formal procedures that ensure continual improvement in delivery of services to its Students, Clients and Stakeholders.

In our experience Quality Assurance Systems like “International Standard ISO 9001”, especially universities, continue to provide high quality services, but only if they:

- Continually review and improve their services,
- They have relevant and practical management processes and,
- Have full commitment from all persons involved.

