

# Quality Assurance System in a Palm Oil Refinery –Jomalina Experience

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ISO 9002 Quality Assurance (QA) system is a well structured quality management system which documents and implements the objectives of a company's quality policies.

The QA system will help prevent quality deficiencies and enhance continuous improvements. This will not only meet the organization's interests, but also customers' needs and expectations. The implementation of the QA system in Jomalina has helped improve quality, reduce reworks and instil quality awareness and culture among all employees.

## **IMPLEMENTING ISO 9002**

Golden Hope Plantations Berhad and its subsidiaries have always encouraged quality consciousness

in all departments. With the advent of the internationally recognized QA system under ISO 9002, and its well structured quality management systems, Golden Hope wasted no time in adopting the principle in total.

In the palm oil refining industry, consistencies in quality prove to be the chief selling point in a highly competitive palm oil market. Golden Hope is one of the first plantation group of companies to recognize this need to adopt and implement the ISO 9002 standard.

In 1990, Golden Hope commenced implementation of the ISO 9002 QA system in stages, starting with a selection of palm oil mills and factories within the Group. The second stage of implementation took into consideration the subsidiaries of Golden Hope, which included the palm

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oil refinery of Jomalina Sdn Bhd (Jomalina). During the year, Jomalina actively worked towards the fulfilment of ISO requirements by the Standard Industrial and Research Institute of Malaysia (SIRIM).

The top management of Golden Hope is fully and totally committed towards excellence and it is intended that this commitment be filtered down to every staff member and worker in the organization. Concerted efforts by all concerned are considered necessary pre-requisites to ensure that the quality management system adopted is effective and rewarding.

The ISO 9002 Quality Management System provides the fundamental framework to reduce non-conforming products, rejects and reworks, which incidentally are expensive cost contributors to the palm oil refining process. The achievement of ISO 9002 certification is an announcement that an entrenched quality management system is being practised, and this would have positive implications on suppliers and customers.

#### **REASONS FOR IMPLEMENTATION OF ISO**

The ISO quality assurance system, which is recognized world wide will soon become a standard requirement for entry of goods into many markets. In line with the Group's policy, Jomalina adopted this quality assurance system with the view of enhancing its competitive position and profitability through a systematic and concerted effort to continuously improve the quality of its products.

The implementation of a QA system incurs some management costs but the advantage far outweighs the cost of failure, thus increasing profitability. An established QA system will provide a marketing tool to maintain and improve market share by increasing customers' confidence thus placing the company ahead of its competitors. It also provides a safe and healthy working environment and promotes a productive integration of staff. The employees will be better motivated and proud to be associated with a quality conscious organization. There is also less pressure and stress due to reduced complaints and rejects.

The implementation of a QA system also helps to avert crisis situations and to increase productivity through consistencies in quality. It is strongly

felt that the quality element will be paramount in all future business transactions. Guaranteed quality is necessary not only for survival but also to meet the increasing needs and expectations of customers.

Golden Hope believes that the ISO Quality Management system provides a guarantee to a continuous and profitable existence for the organization. With a culture anchored in quality and service, the QA system ensures products and services meeting customers' specifications at all times.

#### **COMMITMENT FROM TOP MANAGEMENT**

There is total commitment to quality from the top management in Golden Hope Plantations Berhad with the Group Chief Executive playing a major and active role as head of the Group QA Committee. This committee meets regularly to review quality implementation within the Group and to chart new directions and responsibilities.

The Group's corporate policy is "GOLDEN HOPE – QUALITY ABOVE ALL"

At Jomalina, the QA team headed by the General Manager ensures the QA system is implemented effectively and reviews changes when the need arises.

#### **SCOPE OF ISO IMPLEMENTATION**

Jomalina's scope of certification includes the process and manufacture of edible oil and its products, and this is covered adequately under ISO 9002.

#### **TRAINING AND DEVELOPMENT OF EMPLOYEES IN JOMALINA**

The management staff of Jomalina was briefed on the requirements of ISO QA system by the QA executives of Golden Hope. Several key factory personnel also attended seminars and courses organized by SIRIM and PORIM to have a better understanding of the ISO QA system.

The management of Jomalina had dialogue sessions with all employees to explain the objectives of ISO implementation and the development of a quality culture and ethics in Jomalina. The dialogue also helped to dispel any fear and misun-

derstanding among staff that adoption of a quality culture is an additional job function and/or a management tool for punishment.

Training of supervisors and workers was carried out regularly through briefings and refresher courses conducted by the respective Departmental Heads/functional personnel.

All Internal Quality Auditors in Golden Hope have undergone an Internal Quality Audit course organized by Institute of Quality Control Malaysia (IQCM). The quality audit course provided training as a management tool to evaluate, confirm and verify activities relating to quality.

A well conducted quality audit is a positive and constructive process which identifies areas liable to create future problems. A staff member from the laboratory was also selected to be trained as a Quality Audit Assistant to conduct daily audits on the various processes and to verify all quality checks and records.

### **DOCUMENTATION AND COMPILATION OF MANUALS**

The objective of having quality manuals is to demonstrate that a company has an established system for quality assurance. From the onset Jomalina already possessed operational manuals for individual departments. The manuals were subsequently reviewed to ensure that all facets of effective management and maintenance were in line with ISO 9002 requirements. They were updated and referred to as the Standard Operations Manual (SOM) and used as a reference base for policies and procedures to ensure a complete understanding of the quality assurance system within the organization. They are also used as documents for training of new personnel to ensure continuity of operations.

Since all the Operations Manuals did not adequately address the 18 elements of ISO 9002, it was necessary to prepare a Quality Assurance Procedure Manual (QAP) to bridge the gap to cover all the requirements.

The quality assurance policy of Jomalina is included in a Quality Assurance Manual (QAM). It is a formal declaration that a quality management system is being practised and maintained at Jomalina for the purpose of customer satisfaction.

Jomalina therefore has three manuals :

Quality Assurance Manual (QAM)  
Quality Assurance Procedure (QAP)  
Standard Operations Manual (SOM)

As some process conditions and blend formulations are confidential, they are compiled and referred to as the Prescription Manual. There are cross-references between manuals but the Prescription Manual has restricted circulation among key Production and QC personnel only.

### **PROBLEMS ENCOUNTERED IN IMPLEMENTATION DOCUMENTATION**

The existing quality procedures in Jomalina did not fully comply with the ISO requirements. A standard approach and format was formulated to present all the quality procedures in a clear and unambiguous manner.

Flow charts were used to review individual activities to ensure that the applicable requirements were fulfilled. Thereafter procedures were prepared by the individual department/functional representative. The documented procedures were then vetted by the Departmental Heads concerned for accuracy and completeness, and subsequently reviewed by other related departments. The QA team in Jomalina, consisting of the QA co-ordinator and Departmental Heads meet regularly to review comments and procedures. Soon after the quality procedures had been properly documented a test run was conducted to ensure that what was written is actually being practised. This involved all members in Jomalina.

### **Equipment Calibration**

There are numerous measuring gauges and instruments in the Jomalina refinery. Some only act as a guide, while others are critical in ensuring final product quality. Only the latter were calibrated as the former were mainly for observation, fault diagnosis and safety guide.

The critical equipment that needed calibration was identified by a team comprising members from Production, Engineering and QA. Equipment such as gas flow meters were calibrated using in-house methods with instruments traceable to SIRIM standards. In situations where calibration instruments, master gauges or specialized equipment are

not available, new equipment was purchased. Training was also provided to workers on proper usage of the instruments.

### **Resistance to change by employees**

When workers and their union first heard that Jomalina was applying for ISO 9002 certification, the immediate reaction was that it would entail additional workload and that the quality audit reports were a form of performance appraisal. This was rather negative and an immediate wall of resistance was built between the workers and management.

Considerable time was spent by management to explain the beneficial effects of a structured QA system under ISO 9002, such as, reduced waste, less production failures, increased productivity, reduced costs and ultimately improved work conditions. There are advantages being attached to an organization where the management is committed to quality and safety, and is always working towards a better and cleaner environment with active participation from all concerned. The slow process of explaining and leading by example finally brought the workers round and from then on there was full commitment by all concerned.

### **Co-ordination among Departments**

There was little co-ordination between Departments before starting the QA system as each looked after its own sphere of activity. But in the process of working towards ISO 9002, there was commitment by all Departments to function synergistically as a team. Every department was interested in one another, working towards a common goal. This was one of the most significant achievements in Jomalina in working towards a new QA system.

### **COST OF IMPLEMENTATION**

Implementation of the ISO quality assurance system involves some costs and the quantum depends on the existing available quality system and the physical condition of the refinery. In the case of Jomalina, the majority of the costs was on quality

management viz. prevention and appraisal. The immediate cost of implementing the quality system was the purchase and calibration of master gauges/meters. The master gauges/meters were sent either to SIRIM or approved agents for calibration and certification.

Several new pieces of calibration equipment (Multi-loop calibrator, Tachometer and Thickness tester) were purchased to calibrate the transmitters, flowmeters, pressure, temperature and vacuum gauges, pumps and measuring equipment. The staff and workers involved in preventive maintenance were also trained to operate the calibration instruments. Where calibration tools were not available, specialists with nationally recognized and calibrated instruments were engaged. Two computers in Jomalina were set aside to assist in the preparation and updating of all Departmental Standard Operations Manuals and quality manuals.

### **CONCLUSION**

In the implementation of ISO 9002 Quality Management System in Jomalina palm oil refinery, documentation was one of the most vital requirements. The documentation explains the Company's commitment and ability to operate an effective quality assurance system and to provide quality services and products. When the ISO 9002 QA system was first introduced in Jomalina, the workers were rather apprehensive; now, they are proud to be associated with the System. Achievement of ISO certification is not an end in itself for any organization, as quality is a never ending process of continuous improvement in meeting the ever discriminating needs of customers. Quality Audit (Internal or External) is used as a management tool for further quality improvement and maintenance of the quality system of an Organization.

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