



MERSEN QUALITY MANUAL
ELECTRICAL PROTECTION & CONTROL

**FOR PLANTS IN SAINT BONNET DE MURE,
M'GHIRA.**



Mersen Electrical Protection

The Mersen group is a global expert in materials and equipment for extreme environments, and in safety and reliability of electrical equipment.

Expertise

At Mersen Electrical Power, we integrate our product expertise into the customer's application to make sure it's safe, reliable and profitable. With all our products – fuses and fusegear; surge protective devices; capacitor and cooling devices for power electronics; low voltage and high power switches; power transfer for rail vehicle – designed to match customer specifications and standards, that expertise is recognized around the world. Thousands of local sales representatives & distributors representing our brands provide experienced and alternative customer service.

Dedication

A trusted team member, Mersen invests early in the projects of customers with research and design support. Mersen's experts offer their experience:

- In power low voltage distribution, power controls, power electronics and power transmission & distribution
- And attentive, responsive applications support, from the initial design stage, through system implementation and to well after the sale.

As a global partner, Mersen is famous for helping customer grow. For OEMs that means increasing system life span, enhancing electrical performances and reliability, improving transit times and cutting costs.

Mersen's engineered solutions help them become more competitive, develop globally, and seize opportunities on emerging markets. On the end market that result in reduced downtime and process time, safer electrical systems – protecting people and property alike – and better electrical performances and reliability.

Markets

- Energy
- Transportation
- Electronics
- Process and chemical / pharmaceutical industries

Background

In 2010, the Carbone Lorraine group and its « electrical protection » division Ferraz Shawmut were re-baptized Mersen. It's a name that reflects more than a century's experienced garnered by some of the foremost actors in the history of electrical protection: Shawmut was founded in 1885 and developed a wide range of low and medium voltage fuses to UL and CSA standards, along with associated fusegear.

In the 1990s Shawmut acquired IFÖ (Spain) and Lindner (Germany) to fill out its global offering, before merging with Ferraz

Founded in 1928, Ferraz first produced brush-holders for rotating machines and then grew constantly, successively focusing on semi-conductor fuses, switches and disconnectors, high voltage lightning arresters, and thermal management.

With ties to Carbone Lorraine in the form of sales agreements dating back to 1950, Ferraz became a subsidiary of that company in 1985. Ferraz Shawmut was born in 1999 from the merger of the Ferraz and Gould Shawmut electrical protection activities.

The division has continued to grow through acquisitions: Lenoir Elec (France), R-Theta (Canada), MEP (China), and M.Schneider (Austria).

In 2007, we created an industrial JV called Fusetech (Hungary).

Finally, in 2012 we acquired the company Eldre (based in Angers, France) with their laminated busbar product lines.

At the beginning of 2014, we took a majority participation in the Cirprotec Company (Spain).

In 2018. The group acquired IDEALEC in France and STCap in Germany and Switzerland.

Chemical/pharmaceutical



Electronics



Energy



Process industries



Transportation



Purpose and Scope

The Electrical protection & Control's management system applied to the Saint Bonnet de Mure and M'Ghira facilities refer to ISO standard 9001 2015.

- **The M'Ghira location** is a manufacturing plant. It is therefore not concerned by the Marketing, Design, and Sell processes.
- **The product line Power Transfert Railway Vehicles (PTRV)** at the Saint-Bonnet-de-Mure plant, in addition to the ISO 9001 organization by an IRIS (rail transport) organization ISO/TS 22163

At the Saint Bonnet de Mure location we have an independent test lab accredited conform to ISO 17 025 by COFRAC.

All Mersen locations can make use of its services. In such a case requesting parties must meet the requirements of ISO standard 17025 and obey the lab's own rules.



CONTENTS

P. 2	Presentation of Mersen Electrical Protection
P. 3	Purpose and scope
P. 4	Control of the Quality Manual
P. 5	Quality Policy of Mersen Electrical Protection & Control
P. 5	Management Commitment
P. 6	Responsibilities and empowerments in quality
P. 7-10	Description of the quality system <ul style="list-style-type: none"> • Objectives of the processes in the Quality Management System • Organization of the Quality Management System's documentation • Management review • Continual improvement • Internal audits

Control of the Quality Manual

The Quality Manual sets out the measures taken for quality management to ensure the satisfaction of our customers' and interested parties' durability.

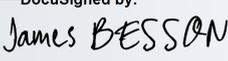
The Quality Director is in charge of updating this quality manual or as the organization changes.

Each revision is approved by the VP Regional Support.

This Quality Manual is tracked and updated in our computerized document management system, and copies can be provided on request. Only the electronic version is valid. Printed copies are not tracked.

CREATION / MODIFICATIONS

- Written on: **10/02/1993**
- Written by : **James Besson**

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- Last modified on: **28/04/2020**
- Checked / Approved by: **Philippe BERARD**

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Mersen Electrical Protection & Control Quality, Safety & Environment Policy

Our quality and environment policy support the **MERSEN ELECTRICAL PROTECTION & CONTROL** mission, which consists in offering our customers innovative solutions originating in the development of cutting-edge technologies.

Mersen Electrical Protection & Control endeavor to be:

A Technology Leader in our markets
A developer of customer orientation
Focus on human development
Socially, environmentally, legally responsible
Highly driven-performance culture

By working on following axes:

- Understanding our customers' challenges and offer them innovative solutions
- Guarantee the satisfaction of our interested parties and in particular our customer by managing and attaining all commitments we make
- Reinforce leadership and coaching for managers

- Develop skills, and create a network of talents to insure our efficiency and personal development
- Ensure the safety of our associates and continuously improve their working conditions
- Comply with all applicable legislation and regulations, and monitor their changes
- Integrating the needs of Sustainable Development from the start of the design, during operations on our sites as well as the end of our products' life.
- Continuously improve our: products, services, organization, processes and the performances of our teams, by reducing their variability through reflections and action plans based on the risks and opportunities associated with the context of Mersen.
- Develop within our organizations the levers offered by "digital" to propose new solutions that match the expectations of our markets.

These orientations form the basis for our Quality safety & Environment program.

Every individual is required to take ownership of them and translate them into action at every level of the organization - they are key to our success.

Thierry LOPEZ de ARIAS
 VP Electrical Protection & Control
 March 2020

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Management Commitment

Our growth is based mainly on the quality of our products, the service and the innovation brought to our customers.

We need to be constantly listening to the market actor in order to adapt ourselves to expectations and developments of our environment and of our interested parties.

To this end, we commit ourselves with determination and with all the collaborators in the path of continuous progress, aligning ourselves with the strategic orientations of the group and in an approach taking into account the risks and opportunities of our Environment.

Our management system is built so that everyone could contribute to the overall performance while taking into account personal development.

We manager, invite all staff to accompany us in this approach and to strive to respect the standards, laws and regulations in force in the company while ensuring the efficiency of the management system

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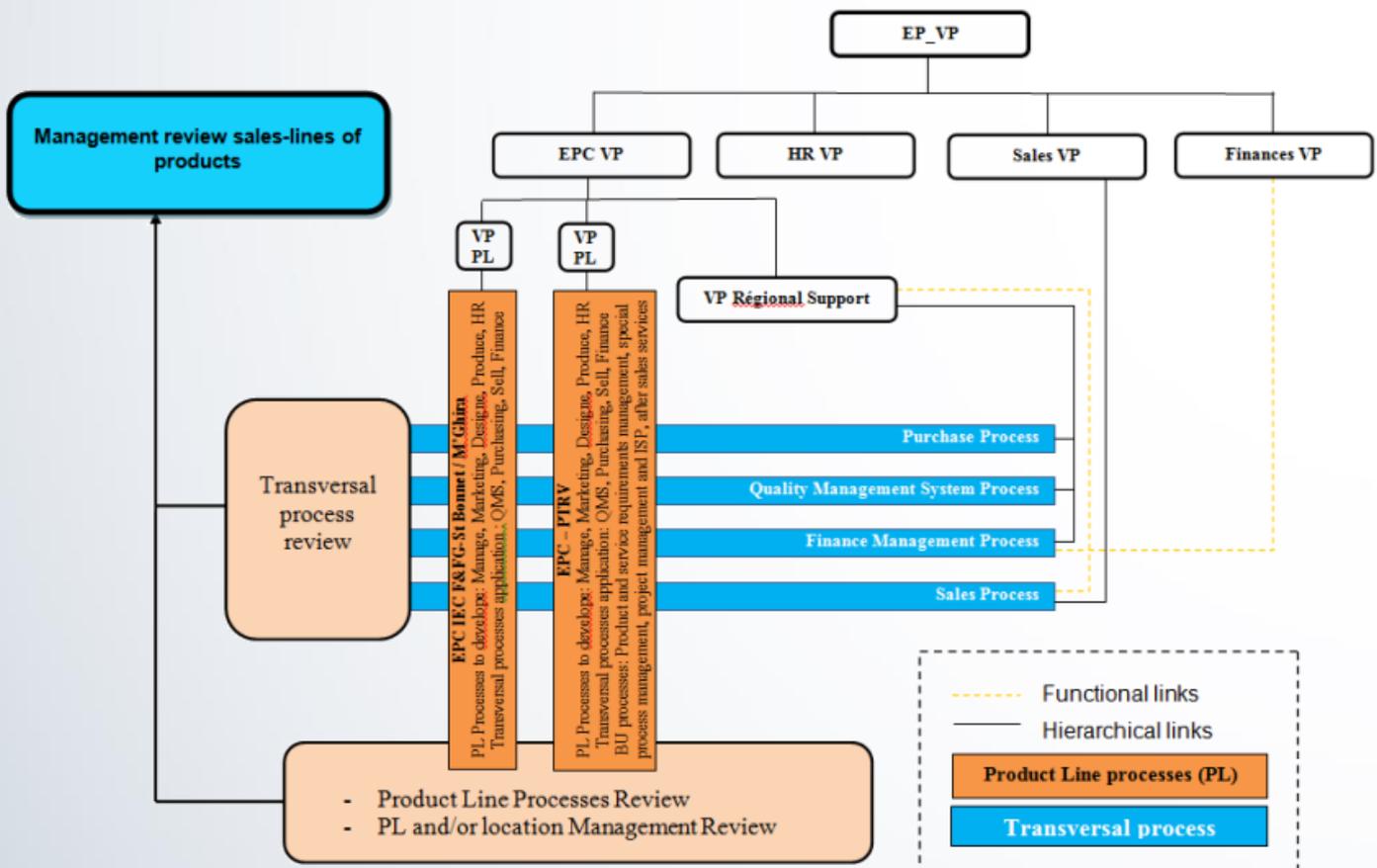
Responsibilities and empowerments in quality

A Management Representative is appointed:

- Within Top Management, with the title of Quality Director.
- At each plant, with a quality manager reporting invariably to the plant manager

In virtue of the empowerments and responsibilities defined for their positions, those managers are responsible for:

- Leading the team in charge of drafting, implementing and driving the continual improvement of our Quality Management System in accordance with ISO 9001 standards and any other specific standards.
- Ensuring the perpetuity of that system
- Measuring and reporting on the performance of the Quality Management System
- Acting as the official spokesperson for the company on the all aspects of the Quality Management System to interested parties
- Monitoring and evaluating changes in standards, methodologies and tools for quality assurance and management
- Assisting in deployment of quality action plans and continual improvement plans
- Promoting awareness of customer requirements throughout the organization



Description of the Quality System

To structure our organization consistently, on a path to continual improvement, we have set up a Quality Management System based on a “process” approach. Each organizational process is defined and managed by an owner and deployed by pilots.

Its goal is to concisely define the activities, input, outputs, actors, resources, methods and indicators required for each process to run smoothly.

Each process is represented by process mapping and supported by procedures.

Objectives of the processes in the Quality Management system

Manage:

To ensure the sustainable and optimized operation of the product line, taking into account the risks and opportunities in a profitable growth objective, by developing the skills of the collaborators, integrating the requirements of sustainable development and by ensuring the safety of people.

Quality Management System:

System: Define and apply a quality organization corresponding to Mersen Electrical Protection & Control's needs and ensure the efficient operation of the processes. Ensure the efficient functioning of the processes and the determination of internal and external issues.

Quality: Implement, track, maintain and improve the quality chain throughout the product's life span by optimizing resources.

Human Resources:

Recruit and support the development, motivation and loyalty of Human Capital to meet present and future challenges of the sites of SBM and M'Ghira.

Purchase:

Select and develop external providers able to sustainably meet the quality and logistics needs at the best overall cost of ownership.

Through a two-dimensional organization:

- Strategic "sourcing global and regional" to meet the growth requirements of the "business units" and support the product/process innovations programs.
- "Sourcing local" tactics to deploy global or regional purchasing strategies and address the operational excellence issues of the sites in terms of quality, cost, time.

Design:

Develop new products and processes in compliance with a bill of requirements.

Produce:

Make available the finished products in order to meet customer demand by transforming parts into finished products that meet cost, quality and lead time requirements in full safety for the people working throughout the process.

Sell:

Realize a match between Mersen's products and services and the customer's needs, and sell those products and services profitably and durably.

Finance:

Produce financial and management statements and anticipate future results to support financial steering of the company.

Marketing:

Put and keep products and solutions on the market that are profitable for Mersen and meet a need.

Additional processes ISO/TS 22163

Product and service requirements:

Take into account the requirements for PTRV products and services to ensure that the activity is able to respond.

Special process management:

Define, implement and maintain special processes applicable internally and at our external providers

Project management and ISP:

Providing the products and/or services in accordance with customer, regulatory and or internal requirements while respecting the objectives of quality, costs and deadlines imposed.

After sales services:

Maintain an after-sales service in accordance with contractual and legal requirements throughout the warranty period, product life or service

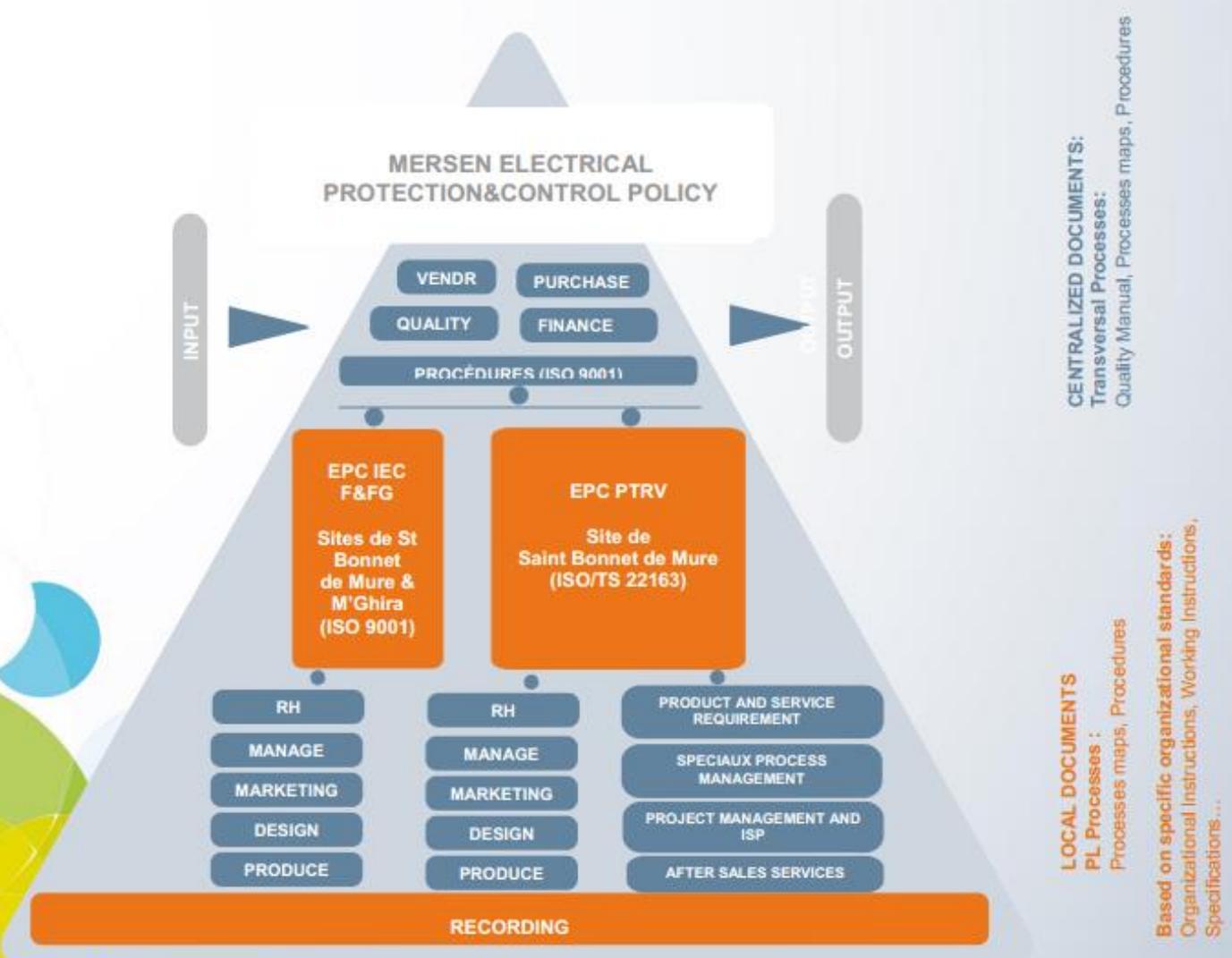
Description Of the Quality System

Organization of the Quality Management System's documentation

Mersen's Electrical Power Activity is noteworthy in that it groups a number of facilities, with different product lines and different markets. That means the Quality Management System that has been implemented uses all the resources of the process approach.

That enables it to meet its dual mission of rendering the quality approach consistent in the midst of diversity while adapting it to the practical requirements of each specific case.

The Quality Management System is therefore structured around the following main organizational documents:



Description Of the Quality System

Management Review

Management reviews are done at least once a year. They are complemented by review of organizational processes. Such reviews are organized around the strategic orientations.

This allows Management to judge the effectiveness and efficiency of the quality management system while making changes consistent with group strategy.

Continual improvement

Continual improvement of the quality of our products and services is above all the result of corrective and preventive actions. The causes of proven or potential anomalies are sought out, and then suitable solutions are defined and implemented.

An action can only be finally closed once its efficacy has been checked.

Customer claims, internal claims, quality audits, management reviews, processes reviews, risk analyses and opportunity analyses are sources of continual improvement.

Suggestions for process improvements are collected through the company's usual feedback channels.

Internal audits

An internal audit is a vital surveillance loop.

It helps us check that the Quality Management System is providing an effective response to the requirements of our quality policy and attain our quality objectives.

It also helps the manager of the audited sector determine whether the sector's organization:

- Complies with the specifications established for it, the requirements of our Quality Management System, and the requirements of the applicable standards and regulations
- Has been implemented and is maintained effectively.

In accordance with our Quality Management System, our internal audits are organized in two types:

- **The level I internal system audit**, managed at the European level, is mainly intended to check that organizational processes match the prevailing standards and are correctly deployed and applied at all facilities.
- **The level II internal audit**, managed locally, is mainly intended to check that the QMS is correctly applied in the workcells, workshop and services.





**A WORLD LEADER
In safety & reliability
For electrical power**

GLOBAL PARTNER

Global expert in materials and equipment for extreme environments and in the safety and reliability of electrical equipment
Mersen designs innovative solutions:

To address its clients' specific needs to enable them to optimize their manufacturing process in sectors such as Energy, Transportation, Electronics, Chemical, Pharmaceutical and Process Industries.

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