Littelfuse Phils. Inc.
on
InfinityQS

Littelfuse®

Expertise Applied | Answers Delivered

Who is Littelfuse?

- **Founded 1927 in Chicago, Ill., USA**
- **Traded on the U.S. NASDAQ; Symbol: LFUS**
- **6,200 employees**
- **28 facilities worldwide:**
  - Americas
  - Europe
  - Asia

Global Presence to Provide Localized Resources and Customer Support

Utrecht, The Netherlands
Swindon, England
Dünsen, Germany
Essen, Germany

Saskatoon, Canada

Chicago, Illinois USA
Irving, Texas USA
Arcola, Illinois USA
Piedras Negras, Mexico
Matamoros, Mexico

Beijing, China
Suzhou, China
Wuxi, China
Dongguan, China
Shenzhen, China
Hong Kong, China

Seoul, Korea
Yokohama, Japan
Shanghai, China
Taipei, Taiwan
Yangmei, Taiwan

Lipa City, Philippines

Singapore

International Sales, Distribution and Engineering Facilities

Research and Manufacturing Facilities

São Paulo, Brazil

Littelfuse has built a global infrastructure to support current customer needs as well as planned future growth.

Littelfuse®
Expertise Applied | Answers Delivered

3

CIRCUIT PROTECTION SOLUTIONS

Littelfuse, Inc. © 2011

The #1 Brand In Circuit Protection --
The Largest Portfolio Of Solutions

Automotive

Electrical

Electronics

Littelfuse has the broadest and deepest portfolio of circuit protection products serving three major market segments…

CIRCUIT PROTECTION SOLUTIONS   Littelfuse, Inc. © 2011

Littelfuse - The only company to offer a complete range of circuit protection technologies

CIRCUIT PROTECTION SOLUTIONS   Littelfuse, Inc. © 2011

Our Customers Are Global Market Leaders

CIRCUIT PROTECTION SOLUTIONS   Littelfuse, Inc. © 2011

InfinityQS Implementation
at
Littelfuse Phils Inc.

CIRCUIT PROTECTION SOLUTIONS

Littelfuse, Inc. © 2011

Littelfuse®
Expertise Applied | Answers Delivered

介绍 *Introduction*

- 2010年，决定在全球所有的力特奥维斯工厂规范SPC的使用，经过重重筛选，最终选定了盈飞无限SPC。

  Y2010 – Littelfuse decided to standardize the SPC software for all LF Manufacturing Sites. That is, to use InfinityQS.

- 2011年2月， "SPC核心小组"成员参加了盈飞无限的ProFicient软件培训。

  February 2011 – Littelfuse Phils Inc. "SPC Core Team" attended the InfinityQS Proficient Training.

介绍 *Introduction*

- 2011年3月，确定了SPC软件的"关键用户"（管理员和超级用户）。

  March 2011- Identified the "key users" (Administrator and the Super Users)

- 2011年4月，盈飞无限在力特奥维斯菲律宾工厂正式落地，开始应用。

  April 2011 – InfinityQS "Go-Live" for LF Phils.

- 2012年，持续发掘盈飞无限SPC软件的功用，以使软件所带来的利润最大化。

  Y2012 – Continue to maximize the benefits of the software

CIRCUIT PROTECTION SOLUTIONS   Littelfuse, Inc. © 2011

1.盈飞无限**SPC**软件标准化应用
Standardization of SPC Software – InfinityQS

一次性投入 *One-Time Investment*

项 目 *Items*	备 注 *Remarks*
盈飞无限ProFicient软件与授权 *InfinityQS Proficient Software and License*	**5个制造基地，总部统一管理** *Managed by Corporate for 5 Manufacturing Sites*
咨询/培训 *Consultation/Training*	**邀请盈飞无限专家到工厂为员工现场培训一周** *Representative from InfinityQS was invited to the Plant for 1 week on-site training.*
认购费 （年度维护费用） *Subscription Fee*	**定期升级系统** *Systems Regular Update*

SPC核心小组的指定

Identification of SPC Core Team

- 团队由各产品线的**质保工程师、工艺工程师**和**产品工程师**组成。

  This team is composed of QA Engineers, Process Engineers and Product Engineers of each product line.

2. 盈飞无限SPC软件培训

InfinityQS Proficient Training

▪ 该团队所有成员均参加了盈飞无限为期一周的现场培训。学习并掌握了以下要点：

This team had attended the SPC Proficient Training conducted by the Application Engineer from InfinityQS International, Inc. for 1 week. In this training, the team was walked through on the following:

Importance of SPC	SPC的重要性
Features of InfinityQS Software	盈飞无限SPC软件的特点。
Navigation of InfinityQS Software	盈飞无限SPC软件的应用导航。
InfinityQS Software SPC Set-up – identification of users, ✓ creating control charts, ✓ activation of alarm rules, ✓ activation of auto notification, etc…	盈飞无限SPC软件的安装： ✓ 用户指定、 ✓ 创建各控制图表、 ✓ 激活报警规则、 ✓ 激活自动提醒功能，等等。
InfinityQS Control and Maintenance	盈飞无限SPC软件系统的控制和维护。

Littelfuse®
Expertise Applied | Answers Delivered

3. 盈飞无限软件安装

InfinityQS Set-up

- 核心小组指定盈飞无限SPC软件系统中**不同类型用户**的职能：

  - ✓ **管理员**：可全面无限制访问盈飞无限数据库。

  - ✓ **经理**：添加/编辑"公司"和"员工"信息。

  - ✓ **超级用户**：高权限访问盈飞无限数据库（由各产品线的质保/工艺/产品工程师组成）。

  - ✓ **生产工程师**：编辑错误代码，添加/编辑纠正措施／改正行动。

  - ✓ **副手**：添加子组/数据。

- *Core Team had identified **different types of users** for InfinityQS software.*

  - ✓ ***Administrator** – full access to the InfinityQS Database.*

  - ✓ ***Manager** – Add/Edit Company and Employee details.*

  - ✓ ***Super User** – multiple access to the InfinityQS Database (compose of QA/Process/Product Engineers of each product line.*

  - ✓ ***Production Engineer** – Edit wrong encode and Add/Edit Corrective Actions*

  - ✓ ***Associate** – Add subgroup/data*

3. 盈飞无限软件安装

InfinityQS Set-up

- 每条产品线的超级用户提前确认与SPC相关的**零件（产品）、过程、测试**等关键质量参数。

  *Super Users of each product line have identified **Part, Process** and **Test** critical to quality as the priority to SPC.*

- 针对所有关键质量参数创建**控制图表**。

  Control Charts *were generated to all the identified critical to quality parameters.*

- 导入各关键质量参数的**公差限（规格限）**。

  Specifications *of the identified critical parameters were uploaded*

Littelfuse®
Expertise Applied | Answers Delivered

4. 盈飞无限SPC软件正式上线
InfinityQS Go-Live

- 2011年4月，力特奥维斯的菲律宾工厂共创建**207张控制图表**并付诸使用。

*Total of **207 Control Charts** were generated across LF Philippines and these were being activated effective April 2011.*

- **激活的报警规则包括：1）超上控制限；2）超下控制限；3）8个点在中线以上；4）8个点在中线以下；5）连续6个点上升；6）连续6个点下降。**

 *Rules activated are the following; **1) Point above UCL, 2) Point below LCL, 3) 8 Points above CL, 4) 8 Points below CL, 5) 6 Points continuously Rising and 6) 6 Points continuously Falling***

CIRCUIT PROTECTION SOLUTIONS   Littelfuse, Inc. © 2011

4. 盈飞无限**SPC**软件正式上线

InfinityQS Go-Live

- 典型的**控制图**界面：

  *Typical appearance of a **Control Chart**:*
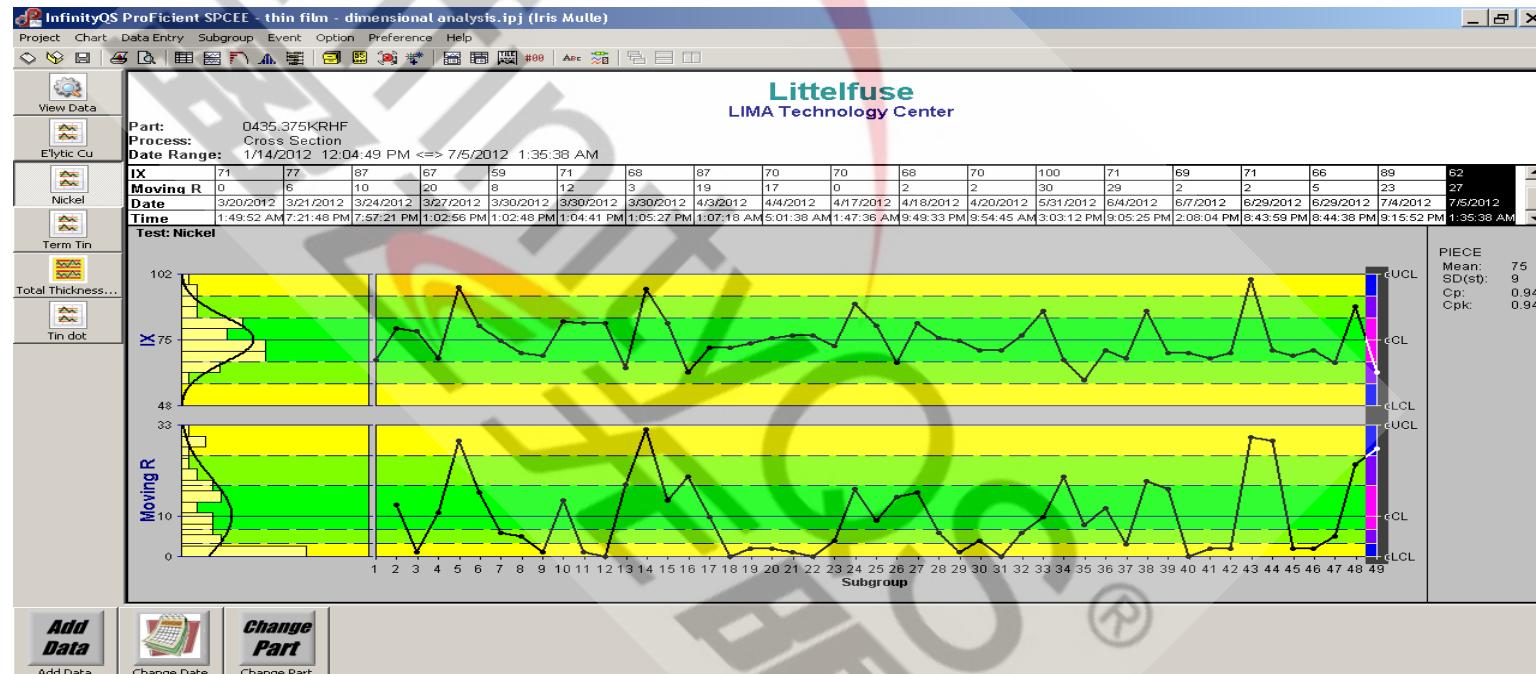
5. 收益
Benefits

有形的收益 *Tangible Benefits*

- **耗纸量**降低了约**5%**：我们得以完全摆脱生产线上的纸质点检表及记录表等。
*Reduced **Paper Consumption by around 5%**. We were able to get rid of the check sheets and log sheets in our Production.*

- **报废成本**降低了约**15%**：由于实现了超标情况的实时反馈，问题会即时得到纠正。
*Reduced **Scrap Cost by around 15%** thru Real Time Feedback on Out-of-Specs conditions. Problems are immediately corrected.*

- 数据采集速度提高，因此节省了工程师手动计算控制限的大量人力和时间。加班的情况因此消失，工程师的**时间精力**得以用来专门处理更有价值的工作。
*Speed-up Data Collection, which generated savings on the **man-hour spent by our Engineers** in computing for the control limits. Thus, overtime is eliminated and Engineers can focus to a more productive work.*

5. 收益
Benefits

隐性收益　*Intangible Benefits*

- 副手、工程师、经理、审核员及来工厂参观的人员**可随时检查、调阅盈飞无限的各种图表。**

*Associates, Engineers, Managers, Auditors and Visitors can **readily check and view infinity control charts** at any desired time frame.*
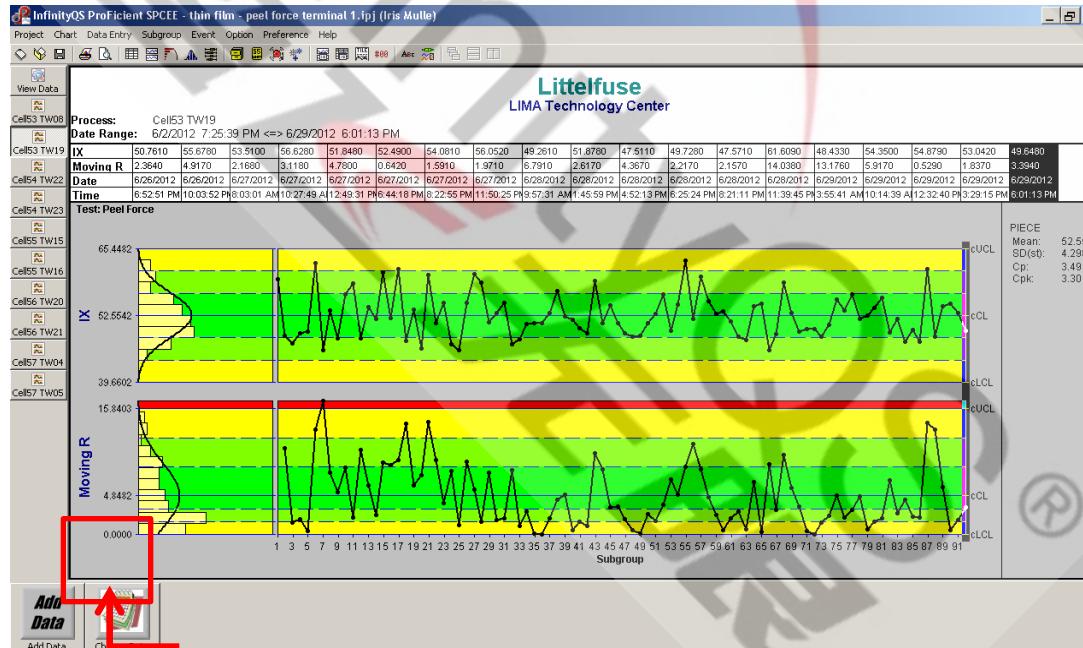
可以在这里更改日期，查询任意时间范围的数据和图表。
Can change date here based on desired time frame to view.

5. 收益
Benefits

隐性收益 *Intangible Benefits*

- 工程师**再也不需要浪费时间去计算控制限**。

*Engineers **no longer need to compute for Control Limits**.*

系统可根据指定时间范围内的数据自动计算控制限。

Auto computed by the system based on the data within the desired time frame.

5. 收益
Benefits
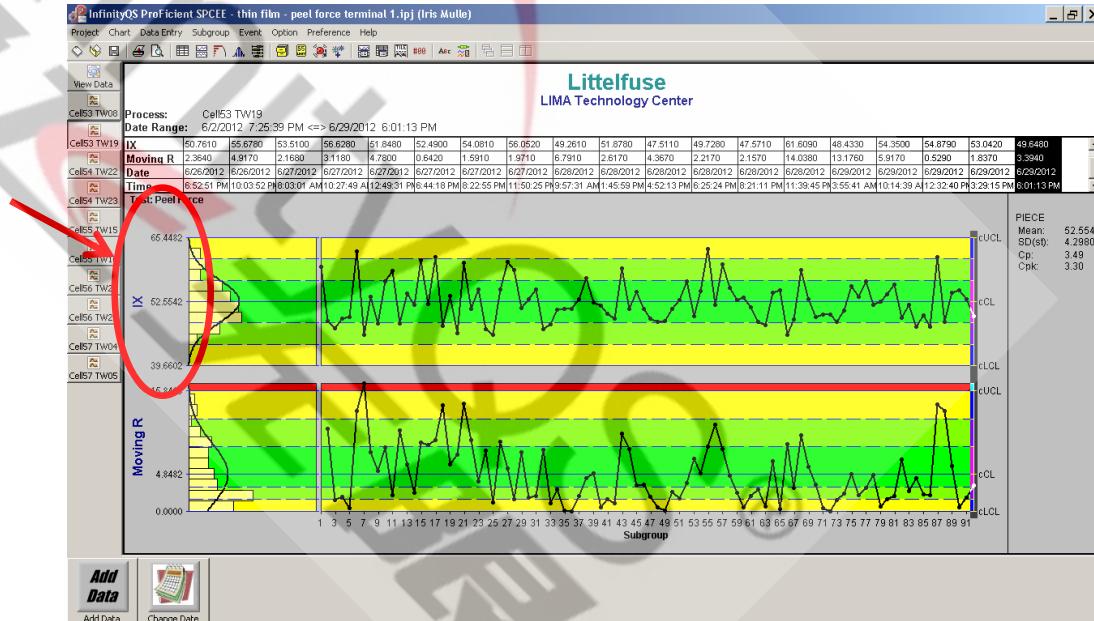
隐性收益   *Intangible Benefits*

- 相关工程师现在可以通过电子邮件自动接收**实时发生的报警信息**，因此能够快速**采取行动／快速响应**。

Concerned Engineers are receiving ***real time information*** *for any alarm encountered using the auto-email. This enables engineers to have* ***quick action/response.***

报警信息摘要
Summary of the alarm encountered

对应工程师
Concerned engineers

违反的报警规则
Alarm violation

Littelfuse®
Expertise Applied | Answers Delivered

5. 收益
Benefits

隐性收益　*Intangible Benefits*

- 数据检索和追溯非常**迅速、准确**，为员工节省大量时间和精力。

  *Data retrieval is very **quick and accurate**. Less time and effort from associates are needed.*

Littelfuse®
Expertise Applied | Answers Delivered

5. 收益

Benefits

隐性收益   *Intangible Benefits*

5. 收益
Benefits

隐性收益　*Intangible Benefits*

- **未经授权，任何人无法对数据库中的数据进行编辑或删除操作**，任何修改或删除数据的操作都要求输入正确的访问信息（用户名和密码）。只有少数指定的工程师有这样的权限。

*Data in the database is **secured from unauthorized actions** such as editing data and deleting data. Any attempt to edit or delete data will be required to provide his access details (username and password). Only limited engineers were given with this access.*

5. 收益
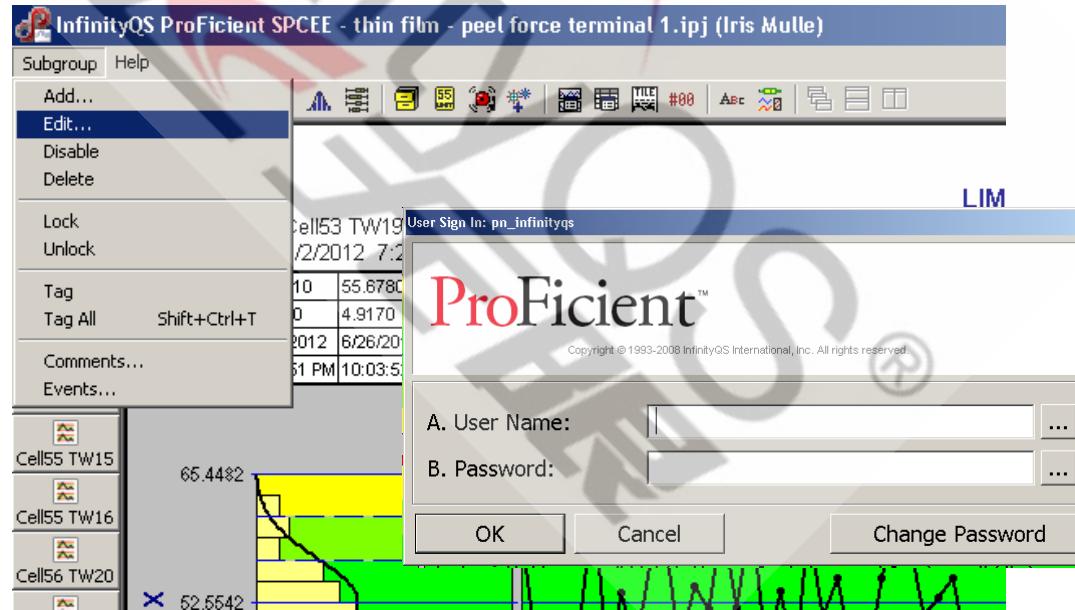
Benefits

隐性收益 *Intangible Benefits*

- 盈飞无限SPC软件是我们整个集团的标准SPC软件系统。

Standardization of SPC software for the entire organization.

CIRCUIT PROTECTION SOLUTIONS

Littelfuse, Inc. © 2011

Thank You！

谢 谢!