The
Product Safety Engineering Newsletter

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IEEE PSES
Product Safety Engineering Society

What's Inside

President's Message

Spring, At Last!

"It's spring fever. That is what the name of it is. And when you've got it, you want—oh, you don't quite know what it is you do want, but it just fairly makes your heart ache, you want it so!" (Mark Twain)

Does it only seem to me that the passing winter was more severe than the previous ones? Storms along the U.S. East Coast seemed to be worse than ever. Are we being given a message? I guess we will never know; however, it is nice to see that in nature, as well as in life, everything goes in cycles. Regardless, spring is a time of renewal. (My apologies to members of the Southern Hemisphere who enter Winter soon—your Spring will come too).

As we enter deeper into the year 2013, it is time to plan ahead; PSES President-Elect, Kevin Ravo will be preparing to take over leadership of the Society for the years 2014 and 2015. I know that Kevin has great plans for PSES and will no doubt move it a large stride ahead.

Membership and networking: it's all about people

One of the key issues I would like to address in this message is that of membership and membership benefits. I know I am preaching to believers in that this message reaches you who are PSES members. However, I believe that the growth of the Society depends first and foremost on our existing members, i.e., on YOU.

No doubt, at your workplace you meet people, other product safety and compliance professionals, who may not be members. Those are the best potential new PSES members. I will not address in this message the question of "Why do we need members?" To some, this may seem a trivial question; to others, a good question. I may address that in a later message or Newsletter article, but I can tell you that this question has been the subject of much debate in IEEE. The fact is that IEEE grows in its membership steadily.

The
Product Safety Engineering Newsletter

Newsletter Committee

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PSES has been engaged in this question for few years now, and under the leadership of Thomas Ha, our VP for Member Services (note the focus on the member), has been carrying out a study to this effect. The questions of interest are, "Why would people join our Society, and why should many remain members long after they have retired."

Experience and studies carried out in other societies and in the IEEE as a whole reveal that in the past most discussion was centered about the services and publications we provide, or the financial services available from IEEE, or the depth of training available at our Symposia, etc. However, in past years, with publications available to all (albeit for a small fee, and sometimes "for free" at workplaces which have subscriptions), we all asked ourselves why "we the people" as individuals remain as PSES members. Surprisingly, none of the above items are today in the "top three". The single, most important reason which popped up is "networking."

"It's all about people. It's about networking and being nice to people and not burning any bridges…" (Mike Davidson)

Networking, in simple terms, means the human interaction with others of our like interest. We stay for the people. For the people we may meet, for the people we already know, and for the memories of the people who are no longer with us. This is a very non-technical reason, but also a very human one. In retrospect, this is something that we might have expected. We call ourselves a "Society," and for many of us, it is obvious that society interaction is the sole reason why we are, and remain, members. The opportunity to meet and talk with other like-minded people, the chance to exchange ideas, debate concepts, and receive a warm handshake when the discussion is completed is just too good to pass up.

So, where do these special interactions occur? Many happen at our annual symposium, or at our Chapter meetings. I have often witnessed them even during or after our Board of Directors meetings. The requirement is two people interested in the same thing, and a willingness to share their experiences and ideas. If you have missed these opportunities, I invite your participation in any one of several PSES events scheduled this year to find out what this is all about. You may be pleasantly surprised to discover that the events listed on the official program are followed by a number of exciting opportunities that are never listed on the planned agenda.

If you have yet to discover the mind-expanding experiences awaiting you with a truly exciting personal interaction afforded by one of our gatherings, I urge you to give it a try, and make a special effort to talk to someone there at a break, or when the "official" program ends. I think you will not regret it that you did.

From ISPCE'2012 in Portland, OR to ISPCE'2013 in Austin, TX

"The past cannot be changed, forgotten, or erased. However, the lessons learned can prepare you for a brighter future." (Unknown quote)

In my previous message I praised the past ISPCE 2012 Symposium which was held in Portland, OR. My, what a Symposium that was! It broke records in most parameters. It will certainly be a challenge for the ISPCE 2013 Symposium team.

However, the foundation for improvement is in the lessons learned carried over from one year to another. Lessons learned from the ISPCE 2012 have been compiled by the Symposium Committee and will be forwarded to the future Symposia Chairs so as to build on successes and avoid errors of previous years.

Do you have any observations on "what went well" and "what did not go well" that you would like to share with the Board? As quoted above, the past cannot be changed, but we can apply the lessons learned from it to improving the future. Any comment, recommendation, suggestion, or even criticism you may have, please send to us. We DO want to hear and now is the best time to listen, just before we get into the final stages of preparation for the 2013 Symposium. Remember, the Symposium is for YOU! Please send any comments you may have to our VP for Conferences, Doug Nix, at dnix@complianceinsight.ca or dnix@mac.com.

sym•po•si•um

n. pl. sym•po•si•ums or sym•po•si•a

1. A meeting or conference for discussion of a topic, especially one in which the participants

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Chapter Safety Probes

To see current chapter information please go to the chapter page at: http://www.ieee-pses.org/Chapters/index.html

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Central Texas - January Meeting

Meeting opened with general announcements concerning upcoming meeting topics, the CTPSES website and LinkedIn access, the 2013 Product Safety Symposium (in Austin) as well as other regular business. After the announcements, Wade Munsch, from MET Laboratories, Inc. was introduced. Wade's topic covered the basic definitions and classes of lasers and the means by which they are made safe for use (specifically an overview of IEC 60825-1:2007). He also gave examples of the testing done to determine safe operation, the labeling that indicates the type and potential harm from each class of laser, as well as the other information required for the user by this standard. Several questions were asked about specific areas of interest in this topic after Wade's presentation and a short discussion followed based on those questions.

IEEE PSES SCV Chapter starts the year out with some great sessions!

In January we held our meeting on the fourth Tuesday of the month as usual and in addition to our business meeting time we leaned abut some of the current and expected updates on Energy Efficiency regulations globally. The presentation was provided by Tom Juliano of UL and it can be found on the Archives page of our website.

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News and Notes

QUEST 2013 Conference & EXPO in Chicago

Strategies and Skills for Quality Engineered Software & Testing

April 15 – 19, 2013

Hyatt McCormick Place

www.qaiquest.org/2013

IEEE Chicago Section is pleased to be a local supporter of the North America Quality Engineered Software and Testing (QUEST) conference as it returns to Chicago. QUEST is a week long of classes, tutorials, keynotes, presentations, hands-on workshops, discussion groups, coaching, networking events, and products/ services EXPO for IT professionals seeking to learn new technologies, strategies and skills for building, testing, and delivering quality software.

SCC accredits two additional organizations to develop standards for Canada

The Standards Council of Canada (SCC) is pleased to announce that both ASTM International and Underwriters Laboratories (UL) have been accredited by SCC to develop National Standards of Canada.

Accreditation from SCC allows UL to create standards solely for Canada along with fully harmonized bi-national standards for the U.S.-Canada marketplace. Harmonized, bi-national standards enable more efficient manufacturer access to the respective U.S. and Canadian markets.

Where there is no standard in Canada, UL is now in a position to work with a single consensus body to develop a standard accredited for use in both Canada and the U.S. Where UL undertakes an effort to develop a standard for both the US and Canada:

- Interested parties will not have to participate on separate consensus bodies, (i.e., one in the U.S. and one in Canada). Instead, a single UL Standards Technical Panel (STP) consisting of both U.S. and Canadian stakeholders will develop a single standard for the U.S. and Canada.
- Common requirements for the U.S. and Canada will facilitate manufacturer access to each country, and will minimize the need for manufacturers to develop products to two sets of requirements.
- Having broader representation on the UL STP can result in standards with more global relevance.

UL is now able to populate a single consensus committee and process a proposed standard in accordance with a process recognized by both the SCC and ANSI. This means greater efficiency for participants when developing U.S./Canadian requirements through a single process managed by UL.

Call for Articles

PSES is planning to bring out next issue (Summer 2013) of its eNewsletter in June 2013 and would like to invite news, articles, reports etc. to share amongst the members of PSES all across IEEE. You are requested to contribute.

All PSES chapters and TACs are also requested to send reports on the activities/events organized by their respective chapters/committees. This will help our readers and other IEEE volunteers to appreciate your initiative and understand the benefits of organizing such activities. You can also include a link to your chapter website for a more detail report. Please send your contributions in MS WORD and digital images in jpeg format to dan.roman@ieee.org.

Please send the contributions by 15th June 2013.

Product Safety and Supply Chain Management

Product Safety and Supply Chain Management: Agenda for Future Research

by Ik-Whan G. Kwon, Donald Kornblet, and Seock-Jin Hong

Note, an earlier version of this paper was presented at the 2011 International Conference on Product Safety and Health Organization in November 2011 in Seoul, Korea

Summary

Issues of product safety have become a national agenda as many consumer products imported from overseas have failed to meet expectations for safety. Experts in product safety in general and those in the outsourcing field in particular are starting to look into supply chain management as a way to improve product safety. A brief literature review reveals that in spite of many common areas shared by these two disciplines, product safety has evolved independently and to some extent disjointedly relative to supply chain operations.

This study explores similarities and differences between the goals of product safety and supply chain, leading to searching for a common denominator where both disciplines help each other to achieve shared goals and improve profitability for shareholders and stakeholders. This exploratory study suggests research into utilization of product design, supplier relationship management (SRM), and logistics (packaging, storage and transportation) as a basis for integration of the two disciplines.

Introduction

Complexity of supply chain operations increases as trade becomes globalized, crossing national boundaries and encompassing countless regulations, compliances, and cultural barriers. As supply chain operations become more complex, issues of product safety take a different level, from local issues to global risk management. By the time products manufactured overseas raise issues in the consumer market, tracing the root cause along the complex supply chain takes a long time and becomes difficult, if not impossible or unmanageable. Damage is already done on the brand name with measureable economic loss (Kumar and Schmitz, 2011).

Although product safety issues can be easily discussed, addressed, and managed within the supply chain management framework, these two disciplines have evolved independently and to some degree disjointedly as decision makers in these two disciplines assume the goals and objectives to be different. While the main objective of supply chain is cost minimization for the entire supply chain pipeline (thereby maximizing supply chain surplus) the major tenet for product safety is to manufacture safe products meeting compliance requirements (thereby minimizing recalls once products are in the consumer market). Literature in the product safety area appears to regard supply chain as a complex global sourcing (Kumar and Schmitz, 2011) or product quality (Marucheck et al., 2011) function rather than as a tool for creating “consumer surplus” for the entire business community including the product safety sector.

Nevertheless, these two disciplines have in common the goal of maximizing return on investment for shareholders/stakeholders. The purpose of this article is to explore further this common ground shared by supply chain management and product safety circles and hopefully develop a common research agenda that can lead to integration of these two disciplines.

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Supply chain operations and product safety agenda: current status

Product safety refers “to the reduction in the probability that use of product will result in illness, injury, deaths or negative consequences to people, property or equipment.” (Marucheck et al., 2011, p.708). Product safety issues could arise anywhere along the supply chain in areas such as product design, storage, transfer, packaging, etc. (Thirumalai and Sinha, 2011). According to one report, from 1998 to 2008, there were 749 toy recalls in this country due to safety issues; 61 percent of them were due to design flaws, 17 percent were due to manufacturing flaws, and 22 percent resulted from other reasons including storage, packaging, and transportation (logistics issues). (Trent and Robert, 2000).

Supply chain management has many definitions depending on what areas in the chain one would like to emphasize or address (for comprehensive definitions, see ; Cavinato, 2002; Winter and Lnemeyer, 2012). For example, people in the distribution area tend to emphasize logistics and transportation aspects of supply chain, while those in production and operations focus their emphasis in the areas of production and inventory management. People in sourcing and procurement fields like to study the impact of strategic sourcing and procurement (including negotiations and contracts) on supply chain optimization, whereas people in the logistics areas tend to define supply chain more in line with moving, packing, and storing.

For our research purpose in this article, we propose supply chain management as “a set of two or more organizations linked directly by one or more upstream and downstream flows of products, services, finances, documents, and information from a source to a customer to increase total supply chain surplus for every player in the chain”. Therefore, supply chain management requires system thinking (whole, chain) and it is proactive management since every player in the chain (product designers, suppliers, manufacturers, distributors, wholesalers, retailers, and retrievers) has to do his/her role (create value) best for the “chain” to achieve the maximum supply chain surplus (Chopra and Meindl, 2012). The weakest player in the chain may jeopardize the maximum potentials that supply chain could achieve. Therefore, one’s supply chain “is only as strong as the weakest link,” (Coleman and Jennings, 1998). The best way to achieve such maximum supply chain surplus is to optimize the entire supply chain cost by using supply chain principles; sharing vital (even strategic information) with their partners to minimize/remove “surprises” and sharing the rewards and risks with partners.

There has been some confusion among supply chain professionals as well as in product safety circles that quality and safety are synonymous. Product manufactured meeting all quality standards and safety compliances may become “unsafe” during the logistics portion of supply chain operations as the “quality” products may be packaged inappropriately, stored in wrong part of warehouse/distribution center, or transported using inadequate transportation modes. Accordingly, it is important that quality and safety should be separately addressed in supply chain operations.

Although there is a common ground between these two disciplines, a significant amount of differences/misunderstanding also exist. Table 1 below sheds some light on similarities and differences between these two disciplines.

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Table 1 – Comparison of Attributes between Supply Chain Management and Product Safety

Attribute	Supply Chain Operations	Product Safety
Objective	Cost optimization for entire supply chain partners	Minimize recalls by effective risk management decisions, complying with regulations and standards; focus on safety processes
Product design	Emphasis on efficiency and responsiveness	Mainly safety, identifying risk prior to production
Manufacturing	Emphasis on lean	Emphasis on quality
Distribution	Emphasis on value added activities	Tracking and traceability
Packaging	View from lean and sustainability prospective	View from safety and compliance
Recall	View it as a cost center	Tracing, tracking, and brand protection
Supplier involvement	Consider it as a partner	Consider it as just a vendor, but with growing recognition of role in safety and compliance
Compliance	Little to none	Heavy emphasis
Inspection	Inspection is regarded as waste	Inspection is mandatory for safety and quality purposes and compliance with new regulations
Scope of attention	Entire supply chain area	Limit to functional areas with emphasis on recalls and conformity to specifications

Product design: Product design plays a significant role as it involves types of products, selections of suppliers, OEMs, and choices of logistics partners including packaging design, transportation modes and location of distribution centers. Accordingly, supply chain professionals consider product design as a means of meeting supply chain objectives of efficiency and responsiveness. The art of supply chain execution is to balance operations between cost minimization (efficiency using push systems) and responsiveness to customer needs (using pull system). It is, therefore, important in the product design phase to determine how far the system is to be "pushed" along the supply chain path to be near the push-pull boundary meeting the customer requirements. Delayed product differentiation allows cost saving in the push part of operations while meeting the customer requirements at the pull phase of supply chain operations (APICS, 2004) (see Figure 1). Ikea and Benetton Company use product design as a major tool to achieve cost minimization thereby improving competitiveness in the global market while meeting customer's needs.

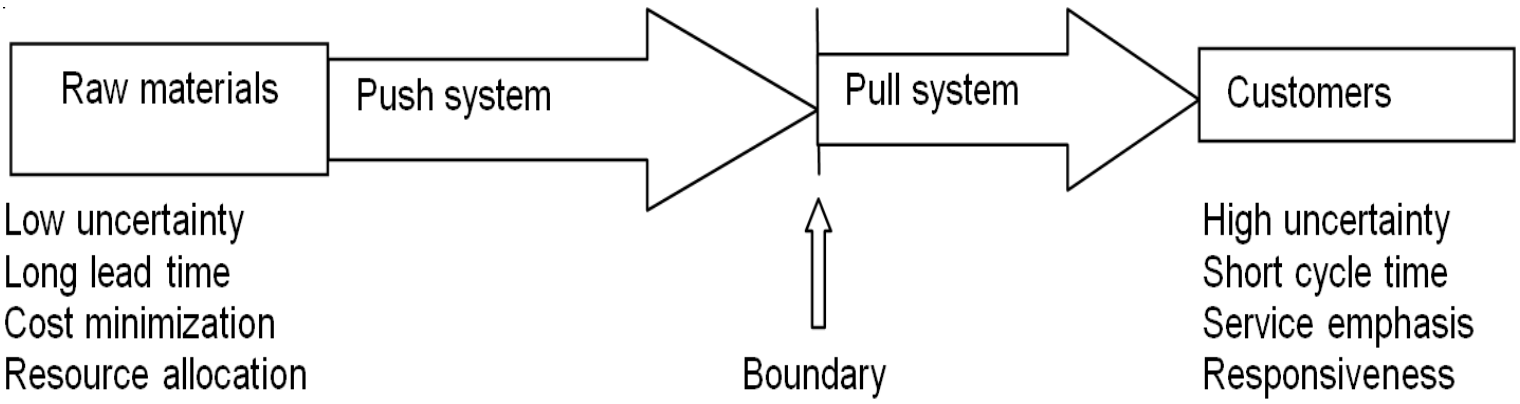

Figure 1 – Push-Pull Characteristics

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Transportation and inventory cost are much lower in the push section of the supply chain due to economies of scale than in the pull section. Accordingly, it is the supply chain professionals' responsibility to seek product design such as to place the boundary toward the pull system to take advantage of low logistics cost and still meet the customer requirements.

Product design has been extensively discussed from the safety perspective as well. Many studies highlight product design flaws as a major cause of product recalls. For example, one study claims that 61 percent of 647 toy recalls were due to unsafe product design (Trent and Roberts, 2000). In 2011, AngioScore marketed a balloon catheter with a design flaw. Although no injuries were reported, the result was a Class 1 recall of about 15,000 units in this country and about 3000 in other countries (Marucheck, 2011). Mattel Inc. recalled 1.5 million toys due to excessive lead content and saw its gross profit reduced by $71 million as a result (Kumar and Schmitz, 2011).

Manufacturing: Quality and safety have been used interchangeably in the product safety field although these two terms are viewed differently in the supply chain. In the supply chain, quality is perceived as meeting customer's requirements (e.g. 3 sigma vs. 2 sigma in statistical process control) while safety is considered as complying with existing regulations and compliances from the product design phase. Toyota is a good example of how the lean concept can be used to take waste out of production systems, thereby making the price per car highly competitive in the global market. JIT (just-in-time) and SRM are just a few that Toyota effectively uses to reduce waste in the production process. But quality products may become unsafe during the logistics phase of supply chain operations.

Distribution: Product safety professionals often downplay the importance of distribution strategies while supply chain professionals use distribution strategy as a tool to enhance value added activities in supply chain operations. Product safety professionals consider distribution as a simple channel distribution. However, in the apparel industry, distribution impacts 35 percent of revenue (Chopra and Meindl, 2012, p.68). Dealing with distribution systems in the supply chain is one of the most important strategic decisions in the supply chain network design, especially as the trade becomes globalized and customers are scattered around the globe.

Under these environments, distribution centers and corresponding strategies play a critical role in transporting products to their ultimate customers with minimum cost and highest service level. Although tracking and traceability are important components in distribution networks, introduction of information technologies such as RFID, GPS, EDI etc., can make such effort timely and effortless. To supply chain professionals, distribution plays a significant and important role in packaging, storing and transferring products safely to the consumers. Wrong packaging, inappropriate storage, and inappropriate transportation modes may create a situation where an entire pallet of products becomes hazardous and unsafe for consumers.

Packaging: Until recently, the role of packaging has been the least understood and utilized area in supply chain operations. Packaging has gained a prominent role in two areas; cost (to supply chain professionals) and safety (to product safety professionals). Recent research indicates that packaging costs 15 percent of the total expense in consumer products; P&G announced a $10 billion savings by 2015 by using different materials in packaging (Journal of Commerce, 2012). While cost saving in the supply chain area primarily focuses on packaging, packaging presents a unique challenge to product safety professionals since products may be damaged and become unsafe if materials used in packaging are subpar or mixed with the wrong ingredients. Such inferior materials in packaging may further damage products during transportation to different destinations.

Recall/reverse logistics: Recall or reverse logistics in supply chain management has been viewed as an additional cost to supply chain operations, whereas in the product safety area recall plays an important role in tracking and traceability, providing vendors with valuable information about consumers. Over $100 billion of goods were returned each year with the cost of processing the returned goods

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being 2-3 times that of outbound shipments, according to the Reverse Logistics Council recent report. However, there is a growing movement in industry to convert reverse logistics from a cost center to a profit center. An example is Cisco Company, which in 2005 spent $8 million on recalls. Through an innovative plan, the same company turned the cost center into a profit center making $147 million net contribution in 2009 (Anderson and Agarwal, 2011). Reverse logistics, complex and challenging as it is, nevertheless provides opportunity for a new revenue stream in addition to tracking and traceability roles in product safety disciplines (Miller, 2011).

SRM: The supplier is one of the most important players in supply chain management and is considered a strategic partner. Suppliers are known to have superior knowledge in product design, manufacturing plan, and logistics design. While suppliers may be viewed as simple vendors in the product safety profession, supply chain professionals consider suppliers as their strategic partners using SRM principles (co-prosperity); a mutual respect and understanding with open information sharing and joint performance metrics. Once SRM is firmly established, suppliers are willing to reserve excess production capacity for their customers during the peak season and willing to share risks for holding extra inventory at their sites. Joint product development with suppliers would avoid unnecessary production glitches and achieve efficient logistics operations, thereby reducing the supply chain cost. SRM is known to have played a major role in shortening product development cycles for Toyota and Honda to 18 months whereas it was 3 years for most of the American automobile industry. In short, suppliers are strategic partners in supply chain management and not just a vendor as perceived by product safety professionals.

A short survey of perceptions on several important supply chain attributes by Ganster (2009) reveals surprisingly divergent opinions by suppliers and their customers (vendors) in China as shown in Table 2 below.

Table 2 – Sources of Conflict/Misunderstanding between Supplier and Buyer

Attribute	Supplier's view of Buyer (rating)	Buyer's view of itself (rating)
Forecasting/planning	1~2	7
Design input/support	1	8
Engineering support	8~9	5
Manufacturing process know-how	1~2	9
Component sourcing	9~10	5
Quality controlinstruction	8~9	8
Communication	3~3	7
Scale: 1 (poor) to 10 (excellent)		

Source: "How to build better relationships in China." By Steven Ganster, Supply Chain Quarterly, Q1, 2009: 52-58

Among the attributes listed in Table 2, it is to some extent surprising and alarming to see such wide differences of opinion and convictions by these two important partners, especially regarding product design and manufacturing know-how. According to this survey, Chinese suppliers have very low opinions of their customer's knowledge in these two critical areas. Transaction cost has to increase as such differences in opinion/perceptions in these areas widen in order to offset uncertainty (Kwon, Hamilton and Hong, 2011). Had they implemented SRM techniques, such widely different opinions may have been either avoided or minimized.

In supply chain operations, suppliers play important roles in product design, engineering, logistics and inventory management as they have a fairly good knowledge in this area. As such, increasing numbers of supply chain professionals consider suppliers as their strategic partners (e.g. Boeing 787), sharing vital information with them to optimize the entire supply chain operations. To product safety professionals, suppliers are regarded as vendors who supply materials for final products, and

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as such a valuable opportunity to improve product safety may have been lost.

Inspection: An extensive use of six sigma tools in supply chain operations almost eliminates quality issues and the need for inspections, whereas inspection is almost mandatory in product safety fields. Quality problems in supply chain management and the need for inspection have been gradually reduced to the point where these problems become almost non-issues. A vigorous application of lean and six sigma approaches to supply chain operations allows not only savings in operating costs, but more importantly minimizes the need for inspection. Close coordination between suppliers and customers based on collaboration, trust and commitment lessens needs for ex-post economic activities such as inspection, additional accountants, and lawyers, etc.

Scope of attention: A net gain by a particular player in supply chain operations is less relevant and to some extent insignificant at best. Aggregate supply chain gain is the main goal and target. Accordingly, it is quite possible and probable to experience occasions where a loss of one partner may be compensated by other partner(s) as long as the total gain is greater than the sum of the gains by each player. In the product safety area, total gain by partners becomes irrelevant as each player limits his/her operations to the assigned functional area.

Searching for common ground

Similarities and differences between supply chain management and the product safety field discussed in the above section provide researchers with the opportunity to explore common ground where these two disciplines may present a workable framework under which every player including consumers can benefit. The best approach would be to utilize the existing supply chain model commonly used by many around the world, Supply Chain Operating Reference Model (SCOR Model) created and maintained by the Supply Chain Council (www.SCOR.org) as shown below.

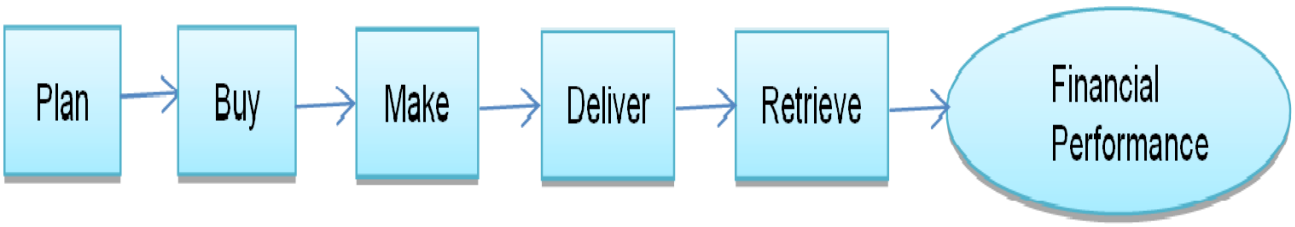

Figure 2 – Supply Chain Operating Reference (SCOR) Model: Universal Model

In the product design phase (Plan), safety issues can be addressed and included in the supply chain objectives of efficiency and responsiveness. Risk management is part of the product design phase in the supply chain as well as product safety fields to insure product safety and avoid disruption due to unforeseen events (Chiesa, 2012). Supply chain professionals consider product differentiation a major tool in optimizing supply chain operations, minimizing inventory and transportation cost. Value of inventory rises during the pull zone (see Figure 1) and cost of inventory and transportation (outbound) is accordingly increasing. Since product design is relatively simple in the push portion and becomes a bit more complicated in the pull zone, measures for product safety should be different in these two zones. For example, safety issues in packaging and storage may of a prime concern during the pull process whereas overall product safety should be a primary concern in product design during the push stage.

SRM allows product design in such a way that not only are products designed to meet two seemingly competing objectives (efficiency and responsiveness) but also incorporate product safety dimensions (specs) that address the safety issues not only products themselves but more importantly meeting supply chain operational requirements; safety in manufacturing phase, transportation, storage, packaging etc. In short, three components (efficiency, responsiveness and safety) can be easily incorporated during the product design phase in supply chain operations. Wal-Mart, for example,

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successfully entered into agreement with suppliers on Kid Connection toys, improving safety of toys but also accomplishing tremendous savings; 13,425 tons of corrugated materials, 1,358 barrels of oil, 190 trees, 727 shipping containers, and $3.5 million in transportation cost (Davis, 2008).

Since SRM is a core competency in the product design phase, especially searching for overseas strategic suppliers, three critical items of information need to be addressed: supplier's skill set, financial health, and organizational strength.

Global competition has brought unusual supply chain responses to minimize cost of production. The just-in-time production mode inevitably forces lean operations which do not tolerate waste in supply chain operations. Safety issues are sometimes neglected and compromised to accomplish such lean operations. Flexible production systems that Japanese auto industries have been heavily depending on for their lean operations complicate the quality and safety issues. But it is the production phase that requires the most attention to safety issues since output determines the mode of distribution, packaging and storage. Safety becomes a major issue during these three phases (packaging, storing and transporting) after production. Nevertheless product safety must be integrated into the production process through a manufacturing defect analysis. This process incorporates a testing protocol at each critical manufacturing step. This is consistent with a quality process that the company has designed and integrated throughout its production process.

Logistics plays a significant role in efficient and effective supply chain operations. Although only 22 percent of safety issues are caused by the logistics area, the impact is much more than its proportional causes due to direct and intimate contacts with the consumers. However, not much attention has been directed to this important part in supply chain operations by the product safety experts.

Supply chain professionals have considered packaging as a part of cost and seldom regard the packaging as a safety issue. Packaging usually costs 15 percent of the total consumer goods value. Without sacrificing quality and safety of products, Wal-Mart launched re-designing of packaging to a smaller size which would eliminate 497 containers (thereby reducing also the carbon footprint) and save $2.4 million per year (USA Today, October 25, 2005). The same company announced a slimmer package of toys; in some instances as little as one-inch reduction in the cardboard from Asia added up to 727 fewer ocean containers, saved 1300 barrels of oil (Maxwell, 2009).

As shown above, safety issues have received little or no attention from supply chain professionals in spite of the fact that 22 percent of product recalls are from this area and the average manufacturer spends 9–15 percent of total revenue on returns (Greve and Da, 2010). Where logistics may involve influencing the basic characteristic of a product, there must be definitions on compliance requirements. For example, if packaging is violated through a logistics mishap, what is the impact on product integrity? Once the product is in the consumer's possession, market surveillance activities must be recorded, monitored, and analyzed.

Reverse logistics in supply chain and recall in product safety share a common goal in that both disciplines attempt to minimize their activities (recalls). Tracking and traceability are valuable information for reverse logistics as they provide reasons/causes for reverse logistics. Supply chain professionals may use such information to their advantage to build a close relationship with customers. The cost center could be turned into a profit center if reverse logistics is used in a positive fashion as demonstrated by the Cisco case.

The goal of product safety as laid out in this study is to produce safe products and thereby avoid recalls once products are introduced into the distribution channel. This preventative measure begins at the planning stage where systems are designed, procedures described, and documentation requirements laid out. When product must be retrieved from the field, a well-designed plan for doing this must be embraced by management and often approved by a government regulator. Retrieval is a form of data base management and traceability of the product through the distribution chain

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Financial rewards in a joint model

This paper argues that the proposed joint model not only addresses two seemingly conflicting objectives (safe product and efficient and effective business execution with the supply chain tools), but also must address another important dimension of the business: profitability.

The market rewards safe and quality products with profitability and market share which helps sustain operations in the competitive global market. However, the product safety profession seldom addresses profit maximization through supply chain operations. Supply chain optimization (efficiency in cost minimization and effectiveness in customer responsiveness) has produced unmistakable results. For example, top-performers (top 25th percentile) in supply chain management spend 56 percent less on total supply chain management cost than median performers. Top performing companies' cash-to-cash cycle is 39 percent more efficient (shorter) than the median performers, and top-performing companies' perfect order performance is 5 percent better than the median performers (Ledyard, 2007). The top supply chain performer has 50 percent higher net margin, 20 percent lower operating and administrative costs, and 12 percent lower average inventory (days of sales) (Swink, Golecha and Richardson, 2010).

An equally convincing argument can be made in product safety and quality. Fewer defects and safe products will result in better profit margin as fewer rework and returns which improves productivity of employees. Cost per unit eventually decreases which makes a company more competitive in the global market. It is more likely that such company will enjoy sustainable operations in the market and create more employment opportunities (Stauffer and Owens, 2012)

The research question at this point, therefore, is whether these two disciplines find a common area which satisfies the tenets of each core value. Although Table 1 seems to suggest a wide range difference, we find both disciplines aim at improving return on investment as the ultimate goals. A healthy financial return is a pre-condition for any industry to sustain its operations. Our task is now to find a common area in these two disciplines where a healthy financial return can be generated and sustained.

Figure 3 displays a relationship between product safety operations and supply chain management from a financial prospective. Each discipline has to generate a sustainable profit margin. As shown in Figure 3, there is one area intersected by all three sections of activity, Zone D. Two disciplines (supply chain and product safety) discussed above have several areas considered critical for survival; product design, packaging, storage, transportation and recalls/reverse logistics.

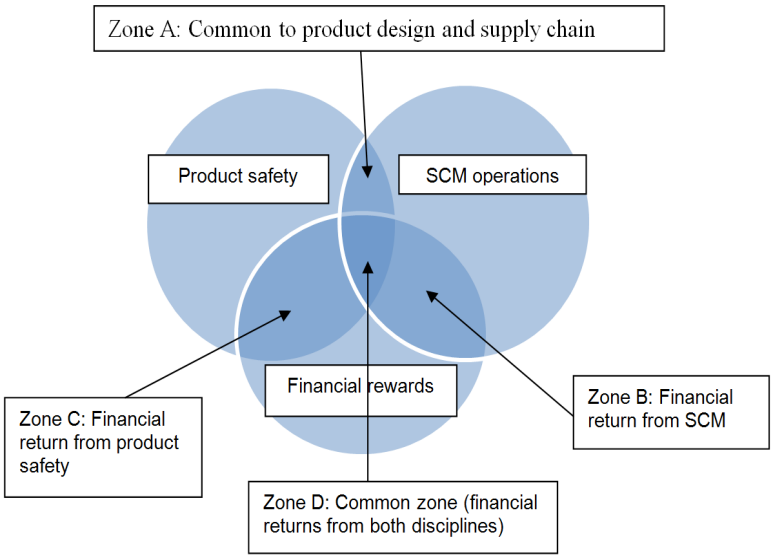

Figure 3 – Relationship between product safety, supply chain operations and financial reward

Continued on Page 15

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Two disciplines begin their journey (operations) with product design (Zone A in Figure 3). The primary objective of product design by supply chain professionals is to reduce the logistics cost in such areas as packaging, storage and transportation. Product is designed in such a way to decouple the production process so that the final product is assembled at the near or end of the supply chain pull area (see Figure 1). Since the product differentiation occurs at the almost the end of the supply chain (closer to retailers or customers), the logistics cost can be minimized. On the other hand, in the product safety field, the product portfolio is designed so as to produce products meeting all the regulatory compliances in packaging, storage, and transportation and thereby the total recall costs to be minimized. The return on investment will be improved as the cost of recalls declines.

Each area independently achieves its financial goal (Zone B for supply chain and Zone C for industry with product safety centric). Our goal is to study whether it is feasible to bring these two disciplines closer together (perhaps overlapping each other) creating a bigger Zone D. This is a challenge imposed on us to explore. The reward will be substantial because neither supply chain professionals nor product safety experts can afford to ignore consumers and market demand.

Operationalizing the research model: agenda for future research

As far as we know, no empirical testing of the proposed model is available either in product safety or the supply chain management field. Nevertheless, we have to assume that there are a few (or many) companies which practice the proposed business model. The most efficient way to undertake this research may be to select a few companies in the product safety area and investigate the extent that they are involved in supply chain operations with special attention on logistics cost including reverse logistics activities. Our research hypothesis is that companies with extensive practice of supply chain management will have fewer recalls, lower logistics/supply chain cost and higher financial returns.

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Emergency Stop Categories

Editor's note—This is the fifth in a nine-part series of articles reprinted through the courtesy of Doug Nix from postings on the Machinery Safety 101 blog (http://machinerysafety101.com).

by Doug Nix

I've noticed a lot of people looking for information on Emergency Stop categories recently; this article is aimed at those readers who want to understand this topic in more depth. Stop categories are often confused with circuit or system architecture categories from EN 954-1[1] and ISO 13849-1 [2]. The confusion between these two sets of Categories often leads to incorrect assumptions about the application of these requirements.

Categories

The first point to make is that these categories are not exclusive to emergency stop functions. They are STOP functions, and may be used for normal stopping as well as e-stop.

Stop categories and control reliability categories are not the same, and there are significant differences that need to be understood by control system designers. I'm going to sling a number of standards at you in this article, and there are references at the end if you want to dig deeper.

Control reliability categories are defined and described in ISO 13849-1, and I've written quite a bit on these in the past. If you want to know more about Categories B, 1-4, check out this series of articles on ISO 13849-1 Categories.

Originating Standards

OK, so let's talk about stop function categories. There are two standards that define these categories, and thankfully they are harmonized, meaning that the definitions for the categories are essentially the same in each document. They are:

- IEC 60204-1, *Safety of machinery – Electrical equipment of machines – Part 1: General requirements* (aka EN 60204-1) [3]
- NFPA 79, *Electrical Standard for Industrial Machinery* [4]

Note that Canada does not have a standard at the moment that specifically describes these same categories, however CSA Z432 [5] does make reference to NFPA 79, bringing the categories in that way, albeit indirectly.

Category Definitions

The categories are broken down into three general groups:

- Category 0 - Equivalent to pulling the plug;
- Category 1 - Bring things to a graceful stop, then pull the plug; and
- Category 2 - Bring things to a stop and hold them there under power.

Let's look at the definitions in more detail. For comparison, I'm going to show the definitions from the two standards side-by-side.

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Table 1 – Comparison of Stop Function Categories

Category	IEC 60204-1	NFPA 79
0	stopping by immediate removal of power to the machine actuators (i.e. an uncontrolled stop – see 3.56);	is an uncontrolled stop by immediately removing power to the machine actuators.
1	a controlled stop (see 3.11) with power available to the machine actuators to achieve the stop and then removal of power when the stop is achieved;	is a controlled stop with power to the machine actuators available to achieve the stop then remove power when the stop is achieved.
2	a controlled stop with power left available to the machine actuators.	is a controlled stop with power left available to the machine actuators.

Definitions from IEC 60204-1:

3.11 controlled stop

stopping of machine motion with electrical power to the machine actuators maintained during the stopping process

3.56 uncontrolled stop

stopping of machine motion by removing electrical power to the machine actuators.

NOTE This definition does not imply any particular state of other stopping devices, for example mechanical or hydraulic brakes.

As you can see, the two sets of Category descriptions are virtually identical, with the primary difference being the use of the definitions in the IEC standard instead of including that information in the description as in the NFPA standard.

Minimum Requirements

Both standards require that all machines have at least a Category 0 stop. This could be achieved by switching off (by using the disconnecting means for example), by physically "pulling the plug" from the power supply socket on the wall, through a "master-control relay" circuit, or through an emergency stop circuit. Note that this *does not require that all machines have an e-stop!*

To learn more about how to determine the need for emergency stop, see my article Emergency Stop – What's so confusing about that?

Selecting a Stop Function

How do you decide on what category to use? First, a risk assessment is required. Second, a start/stop analysis should be conducted. This is quite simple, being a straightforward analysis of the starting and stopping conditions for the machinery. Next, ask these questions:

1) Will the machinery stop safely under an uncontrolled stop?

   If the machinery does not have a significant amount of inertia, meaning it won't coast more than a very short time, then a Category 0 stop may be all that is required.

2) If the machinery coasts, or if the machinery can be stopped more quickly under control than when power is simply removed, then a Category 1 stop is likely the best choice.

3) If the machinery includes devices that require power to keep them in a safe state, then a Category 2 stop is likely the best choice.

If you choose to use a Category 2 stop, be aware that leaving power on the machinery leaves the user open to hazards related to having power on the machinery. Careful risk assessment is required in these cases especially.

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Risk Assessment and Stop/Start Analysis

Risk assessment is critical to the specification of all safety-related functions. While emergency stop is *not* a safeguard, it is considered to be a "complementary protective measure" [6, 6.2.3.5.3], [7, 3.19, 6.3]. Understanding the hazards that need to be controlled and the degree of risk related to the hazards is basic design information that will provide specific direction on the stop category required and the degree of control reliability necessary to provide the expected risk reduction.

Stop/Start Analysis is quite simple. It amounts to considering all of the intended stop/start conditions for the machinery, and then including conditions that may result from reasonably foreseeable failure modes of the machinery and foreseeable misuses of the machinery. Create a table with three columns as a starting point, similar to Table 2.

*This article is republished by permission from the Machinery Safety 101 blog (*http://machinerysafety101.com/2010/09/27/emergency-stop-categories, September 27, 2010*).*

References

[1] *Safety of Machinery — Safety Related Parts of Control Systems — Part 1: General Principles for Design,* CEN Standard EN 954-1, 1996.

[2] *Safety of Machinery — Safety Related Parts of Control Systems — Part 1: General Principles for Design*, ISO Standard 13849-1, 2006.

[3] *Safety of machinery – Electrical equipment of machines – Part 1: General requirements*, IEC Standard 60204-1, 2009.

[4] *Electrical Standard for Industrial Machinery*, ANSI/NFPA Standard 79, 2007.

Table 2 - Example Start/Stop Analysis

Description	Start Condition	Stop Condition
Lubricant Pump	Lubricant Pump Start Button Pressed	Lubricant Pump Stop Button Pressed
		Low Lubricant Level in reservoir
		High pressure drop across lubricant filter
Main Spindle Motor	Start enabled and Start Button Pressed	Low Lubricant Pressure
		Stop button pressed
Feed Advance motor	Feed Advance button pressed	Feed Stop button pressed
		Feed end of travel limit reached
Emergency Stop		All motions stop, lubricant pump remains running

The above table is simply an example of what a start/stop analysis can look like. You can have as much detail as you like.

Control Reliability Requirements

Both ISO 13849-1 and IEC 62061 [7] base the initial requirements for reliability on the outcome of the risk assessment (PL_r or SIL_r). If the stopping condition is part of normal operation, then simple circuit requirements (i.e. PL_a, Category 1) are all that may be required. If the stopping condition is intended to be an Emergency Stop, then additional analysis is needed to determine exactly what may be required.

Doug Nix, A.Sc.T., is Managing Director at Compliance InSight Consulting Inc. in Kitchener, Ontario, Canada.

[5] *Safeguarding of Machinery*, CSA Standard Z432, 2004.

[6] *Safety of machinery — General principles for design — Risk assessment and risk reduction*, ISO Standard 12100, 2010.

[7] *Safety of machinery – Functional safety of safety-related electrical, electronic and programmable electronic control systems*, IEC Standard 62061, 2005.

IEEE PSES BoD Call For Nominations

It's that time of year! Call for nominations for Directors-At-Large of the IEEE Product Safety Engineering Society

In our process for having strong leadership, we were very successful last year getting excellent candidates for our governing board, a.k.a our AdCom. If you are looking to be recognized by your peers and want to make a difference in our profession, consider running for the Product Safety Engineering Society Board of directors.

This is a Call for Nominations for election to a position as Director-At-Large IEEE PSES (BoD) for the term of 2014 through 2016. If you know of a good candidate, including yourself, who possesses society volunteer experience, leadership qualities and the ability to get things done, please send an Intention to Nominate to a Nominations Committee member listed below. The Intention should list the candidate's name, contact information and a brief description of their background.

Directors-At-Large are your representatives to the Board of Directors of IEEE PSES.

Terms of office are 3 years and the nominee must:

- be a member of the IEEE and a member of the Society,
- possess technical and professional stature in the Product Safety Engineering field, and
- have adequate financial resources, time to attend meetings, teleconferences and actively contribute in committee activities

Our past experience with AdCom elections is that people who are successful are usually, well-known in the society. Within IEEE, our smaller society gets a relatively high percentage of votes. What this boils down to is the reasonable observation that if you want to play a leadership role in the society, it's strongly recommended that you are active in your local chapter, you write articles for the Newsletter, and you participate at our conferences and workshops, etc. Our members vote for people they know. It's really important for our professional IEEE society to have active volunteers.

Being active in the PSES is a great way to build leadership skills and to network. As you get more and more and more involved, new opportunities will arise. I would like to think that this professional growth greatly enhances our careers, and makes them more stimulating, and, yes, fun. IEEE offers tremendous opportunities for leadership as well. Playing a role in your local chapter is a great way to start on the leadership road.

If you are interested in applying for nomination in our election, please contact the Nominations Committee with a four paragraph biographical summary and photo by June 10, 2013.

First paragraph: Name, title, place of employment, educational background

- Second paragraph: Technical and professional experience.
- Third paragraph: PSES and IEEE service and activities including officer, committees, etc.
- Fourth paragraph: Vision for PSES. Your mission as a director.

Nominations Committee:

Murlin Marks at murlinm@ieee.org, or

Jim Knighten at Jim.Knighten@Teradata.com or

Jim Bacher at j.bacher@ieee.org

For more details please review the society bylaws on our home page or contact anyone on the nominations committee.

Advantages of Membership in the IEEE PSES

Makes you part of a community where you will:

- Network with technical experts at local events and industry conferences.
- Receive discounts on Society conferences and symposiums registration fees.
- Participate in education and career development.
- Address product safety engineering as an applied science.
- Have access to a virtual community forum for safety engineers and technical professionals.
- Promotion and coordination of Product Safety Engineering activities with multiple IEEE Societies.
- Provide outreach to interested engineers, students and professionals.
- Have access to Society Publications.

IEEE | PSES Product Safety Engineering Society

E-Mail List: http://www.ieee-pses.org/emc-pstc.html
Virtual Community: http://product-compliance.oc.ieee.org/
Symposium: http://psessymposium.org/

Membership: The society ID for renewal or application is “043-0431”.

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form an audience and make presentations.

2. A collection of writings on a particular topic, as in a magazine.

3. A convivial meeting for drinking, music, and intellectual discussion among the ancient Greeks.

[Latin, drinking party, from Greek sumposion : sun-, syn- + posis, drinking; - in Indo-European roots.] (Source: http://www.thefreedictionary.com/symposium)

The 10th incarnation of the IEEE Symposium on Product Compliance Engineering will return to Austin TX on October 7–9, 2013. Note that this is the last year that the symposium will be held in that season, as in future, from 2014 and on, the Symposium will migrate to the May Time frame. This, in fact, is in response to feedback received from members of the Society and attendees at previous symposia (a couple of years ago). The transition did take a few years, as symposia and their venues are planned several years ahead, so we had to hold off the transition to the next available year, and so here we are.

Building upon the enthusiasm and success of the recently completed Symposium held in Portland OR, the 2013 event will include presentations given by industry experts covering diverse topics such as General Compliance, Leadership, ITE Compliance, Forensics, Medical Devices, and Risk Assessment. The Keynote Speaker will be Joe Bhatia, President and CEO of ANSI (American National Standards Institute).

I hope ISPCE 2013 is also one of the important events on your schedule. I have seen some of the advance planning for this Symposium, and I am eagerly awaiting the event because I know so many interesting things are on tap. Also remember, if you are an employer seeking for product safety engineers and technicians, the Symposium is the BEST place to look. It is the gathering place for the best of the best.

Why not consider sending a paper? The call for papers can be downloaded at http://ewh.ieee.org/soc/pses/symposium/CFP2013.pdf.

Come, join us there, either as speaker or an attendee, join the party, meet your colleagues, and have a great time!

PSES Education Committee Volunteers Needed!

“Education is simply the soul of a society as it passes from one generation to another.” (G. K. Chesterson)

Two of the strategic goals of the PSES listed above relate to education.

In my “other hat,” I am leading the effort of forming the PSES Education Committee (PSEEC). The mission of the committee is to promote education related activities on product safety engineering within the PSES.

The Committee shall recommend to the PSES Board of Directors and implement programs specifically intended to serve and benefit PSES members in educational pursuits, the product safety and compliance engineering community, regulatory agencies and public at large.

These programs shall include planning of educational activities within PSES, development and delivery of continuing education products, the coordination of pre-university programs, and activities within the PSES field of interest and representation of the PSES in matters regarding product safety engineering education.

The Committee (PSEEC) is seeking volunteers willing to lead or support any of its activities, as listed below.

The Committee plans to prepare and conduct educational programs and develop products designed to support the individual member during his/her professional career, with particular emphasis on continuing education and career development. In particular, the Committee will:

Define the educational goals of PSES;

Establish awareness of product safety and compliance engineering (PS&CE) education throughout schools, academia, and industry;

Develop a recommended curriculum for product safety and compliance engineering education;

Create a data base of existing university offerings on PS&CE-related education;

Develop a manual of product safety related case studies;

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2013 IEEE Symposium on Product Compliance Engineering

Sponsored by the IEEE Product Safety Engineering Society

October 7– October 9, 2013
Austin, Texas, USA
www.psessymposium.org

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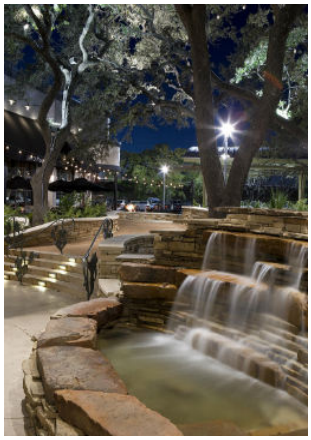


Call for Papers, Workshops, and Tutorials

The IEEE Product Safety Engineering Society seeks original, unpublished papers and tutorials on all aspects of product safety and compliance engineering including, but not limited to:

Forensics Track:
Papers and presentations detailing:

- The latest findings in failure analysis on new components and miniaturization of common products implemented by the electronics industry.
- Descriptions of failure analysis involving rare failure modes that are not commonly seen in any given product line.
- Developments in the general tools and techniques used for quality failure analysis of electronic and electrical products.
- Dominant failure modes for a given type of component, detailing causes and effects of these failure modes.

Leadership Track:
Papers and presentations on leadership will include:

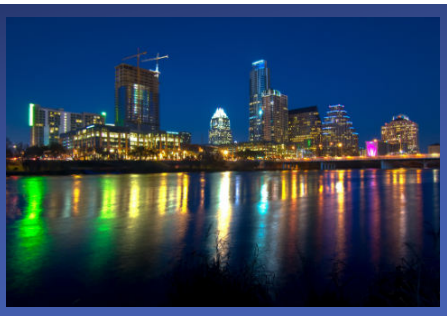
- Management strategies and techniques
- Case studies
- Leading change
- Teambuilding
- Conflict resolution
- Time management
- Communication skills

ITE Product Compliance Track:
Papers and presentations on ITE product compliance will include:

- Information Technology Standards and Regulations
- ITE compliance and non-compliance case studies
- Certification requirements and strategies
- Testing methods
- Labeling

Medical Devices Track - "The impact of the new IEC 60601-1":
Papers and presentations on Medical Devices will include:

- Risk Management process
- Essential performances
- Patient and Operator – different requirements
- How to deal with the Collateral Standards
- Manufacturer opinion
- Consultant opinion
- Testing House opinion



2013 IEEE Symposium on Product Compliance Engineering

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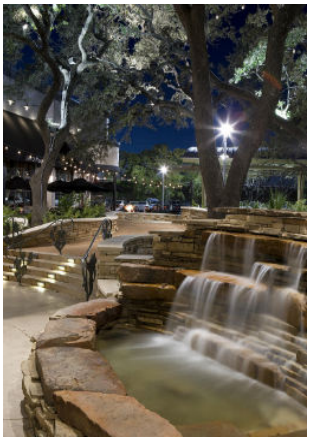

Call for Papers, Workshops, and Tutorials

General Track:
Papers and presentations in the General Track will include:

- **Product Specific:** Consumer, medical, computer (IT), test and measurement, power supplies, telecommunication, industrial control, electric tools, home appliances, cellular and wireless, etc.
- **Hazard Specific:** Electrical, mechanical, fire, thermal, chemical, optical, software, functional, reliability, risk assessment, etc.
- **EMC / RF:** Electromagnetic emissions, electromagnetic immunity, regulatory, Introduction to EMC/RF for the safety engineer and compliance engineer.
- **Components:** Grounding, insulation, opto-couplers, cables, capacitors, connectors, current-limiters, transformers, current-limiters, fuses, lasers, ferrites, environmental, electromagnetic suppression & protection, surge protectors, printed wiring boards, etc.
- **Certification:** Electromagnetic emissions & immunity, Environmental, Product safety, Processes, safety testing, regulatory, product liability etc.
- **Standards Activities:** Development, status, interpretations, country specific requirements, Laboratory Accreditation, etc.
- **Research:** Body physiological responses to various hazardous energy sources, unique safeguard schemes, electrically-caused fire, forensic methods etc.
- **Environmental:** RoHS, WEEE, EuP (Energy-using Products), Energy Star, Packaging Directives, REACH (Chemical), CeC, etc.
- **Demonstration Papers:** Demonstrations of product safety testing techniques including mechanical, electrical, fire, etc.

Risk Assessment Track – Are you ready for Risk Assessments in Standards??
Papers and presentations on Risk Assessments will include:

- Introduction to Risk Assessments and various techniques
- Understanding the different scoring methods in various Standards
- Risk Assessments for Electromedical Equipment
- Review of ISO Guide 51

Author's Schedule

All dates require that the associated documents be loaded into EDAS by the due date

Abstract/Draft Formal Paper/Presentation Submission	**May 21, 2013**
Notification of Abstract Acceptance	**June 7, 2013**
Final Paper/Presentation submission	**July 19, 2013**
Acceptance of Papers	**August 16, 2013**

Please go to the Author page of the ISPCE web for comprehensive submission instructions including paper templates on the Authors tab at: www.psessymposium.org

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Collaborate with relevant conferences and symposia on PS&CE education products and their delivery;

Initiate programs to motivate practitioners to pursue, and their employers to encourage and support, continuing education throughout their careers;

Promote and reward excellence and innovation in the development and implementation of educational programs and activities that relate to the PSES field of interest;

Create an on-line PS&CE education-related virtual community and web site.

If you are interested in serving on the committee, or for any further details, please contact me at eb.joffe@ieee.org.

Call for Volunteers

“May I share with you a formula that in my judgment will help you and help me to journey well through mortality... First, fill your mind with truth; second, fill your life with service; and third, fill your heart with love.” (Thomas S. Monson)

The success of our Society is possible thanks to the many fine an dedicated volunteers who have contributed unselfishly of their time and talent. As the Society evolves, and new initiatives emerge, we are always in need of volunteers. Please, give serious consideration to becoming involved in our broad and challenging goals and objectives.

I look forward to working with all of you who join the volunteers of the Society, helping achieve our goals for the benefit of us all. For making a suggestion, comment, or just for dropping a friendly note, please do not hesitate to e-mail me at eb.joffe@ieee.org.

PSES BOD Meetings

Again, I would like to reiterate that all meetings of the Society Board of Directors are open and you are most welcome to attend. We try to schedule our BoD meetings so as to reach out to you, and we hope that you reach out to us and honor us by attending. As I have said in the past, you are not restricted to being a "silent observer" in the meetings. Indeed, you may talk and express your opinions, make suggestions and take part in our activities. The schedule of BoD meetings is posted on the Society web site (http://ewh.ieee.org/soc/pses/) and in the Calendar section of this Newsletter.

As mentioned above, the upcoming BoD meeting will take place in Vancouver, BC (Canada), on June 22 & 23. If you need more information, please contact our Secretary, Daniece Carpenter, at Daniece_Carpenter@DELL.COM.

Run, vote, and make a difference!

"Service to others is the rent you pay for your room here on earth." (Mohammed Ali)

The call for nominations for candidates for three-year terms (2014-2016) on the PSES Board of Directors (BoD) is due in a few months and will be issued to all PSES members. Have you considered running for the BoD? This is YOUR opportunity to make a significant difference. Simply fill in the nomination form sent out to all PSES members. It is as easy as 1-2-3.

There is another, and even greater concern related to the BoD elections. In recent years, only a fraction of the members have taken advantage of their right to vote. I wish to believe that all PSES members DO CARE, and thus, the low voting rate is no less than shocking!

I plead to all Society members: consider running for the BoD and submit your candidacy. Do it sooner better than later. But even if you do not, next time, when you receive the ballot form, please cast your vote. Fill in and submit the ballot form. You may vote for up to 4 candidates, and surely you want to make a difference.

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Continued from Page 4

In February, we mixed things up a little bit! The IEEE PSES Board of Directors held a face-to-face meeting in the San Jose area and so we decided to hold a Workshop when the Board Members were in town. Instead of our usual fourth Tuesday of the month, we held the Workshop on Monday, February 11 at our usual meeting site at UL on Trimble Road.

The Workshop started with lunch at 1:00 and was followed by some business meeting time including presentation from two of our Board Members and then the first presentation was provided by the Tag Team of Jon Derickson and John McBain – two of our own SCV Chapter members! Jon and John discussed safety of robotics and their presentation can be found on the Archives page of our website.

Following some good networking time during the break, we were treated to a presentation/ demonstration by the Monta Vista High School Robotics Team who discussed their First Robotics participation and Robot and how they design in safety.

Finally the Bellarmine College Preparatory Robotics Team hosted a tour of their Robotics lab at the NASA/AMES site to round off the evening and a successful Workshop!

Thanks to all who participated in both event to help make the SCV Chapter thrive!

TAC News

Forensics and Failure Analysis

The FFATC LinkedIn group has almost reached 1000 members! This online forum is a great place for failure analysis investigators to join and have discussions concerning failure analysis of new and mature components and circuits, rare failure modes not commonly seen in any given product line, and tools and techniques used, to name a few topics.

The leadership group of the FFATC is looking for interested and dedicated persons to join this leadership group to augment our efforts to grow the contributions and importance of this committee to the field of quality failure analysis and its ability to feedback findings to the improvement of electrical and electronic product safety. If you are interested in helping lead this effort, please join the LinkedIn group "Forensics and Failure Analysis" and contact Daren Slee (dslee@exponent.com) or Jonathan Jordan (jjordan@ieee.org). Links: http://www.linkedin.com/groups?gid=1849504 and http://ewh.ieee.org/cmte/pses/ffat/

ITE Product Safety

The 15 members of the Technical Committee for ITE continues to meet each month via teleconference (Mondays, 3PM CST). We discuss various topics of interest to IT products and safety especially the technical details of the new safety standard, IEC 62368. For information contact Gary Schrempp (Gary_Schrempp@dell.com).

PSES Risk Assessment Technical Committee (RATC)

The PSES Risk Assessment Technical Committee Field of Interest is the development and application of risk assessment methodology in the theory, design, development and implementation of electronic and electromechanical equipment and devices and the embedded control software and firmware used in those devices. Website: http://ewh.ieee.org/soc/pses/TAC/RATC/RATC_Home.html.

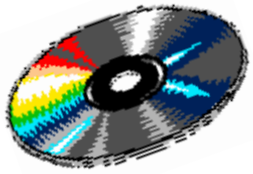
Telecom Safety

Current topics being discussed at the monthly meeting include:

- Wire simulators
- ATIS/Telcordia GR-487-CORE rewrite
- TC-108 National Committee activity and IEC 62368-1 second edition
- Smart grid issues
- 380Vdc power systems
- Solar panel integration
- IEC 62368-1 and its impact on the telecom industry.
- AC Power Cross Considerations for Non-Telecom Signaling Lines (e.g. Ethernet, Alarms) Run in Outside Plant
- IEC 62368 and MOV requirements

Contact Don Gies (Don.Gies@alcatel-lucent.com) for details.

Past IEEE-PSES Symposium Records



CD Purchasing Information

SYMPOSIUM PAPERS ON CD:

The Product Safety Engineering Society continues to offer past symposium records for sale on CDs. The cost for the CD is $35 plus shipping and handling for IEEE members; $50 plus shipping and handling for non-IEEE members. At this time, check or money orders are the means for payment. Please provide the following information:

CDs to be shipped to- (Please print or type.)

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Send payment to:

IEEE Product Safety Engineering Society
c/o Richard Georgerian, PSES Board of Directors
7103 Sioux Court
Longmont, CO 80504
U.S.A.

Depending on stock availability allow 2 to 3 weeks for delivery.

New PSES Members

from 31 December 2012 Through 29 March 2013

Our new members are located in the following countries: Argentina, Australia, Austria, Canada, Ecuador, France, Germany, India, Israel, Japan, Nigeria, Poland, Serbia, Spain, Taiwan, United Arab Emirates, USA

Adam C Roy
Alain Thomas
Alan D Stokes
Alexis Amirtharaj
Aliro Ricardo Falcon Andrade
Bill Hannah
Ching-Yao Chang
David A Irwin
Daniel T Anchondo
Deniz E Kozdereli
Dieter W Ehrenstorfer
Dror Perlstein
Dustin Oaks
Edmundo Gatti
Edward M Obokoh
Erik J Spek
German Gomez
Gustavo Javier Wain
Ion Etxeberria-Otadui
James J Colotti
James T Richards
Jason R Venz
Jeffrey D Lord
Jeffrey Scott Paramore
Jhonny Di Girolamo
Jonathan D Carter
Kana Udomon
Kay Hamaguchi
Kikuo Muramatsu
Luis Rodrigo Alvarez
Mouza Al Houqani
Mark E Dischinger
Mark E Goodson
Mark P. Chmielewski
Mark W Maynard
Miroslaw Zielenkiewicz
Mohammed Mohammed Raoof
Nebojsa Petrovacki
Pablo Raul Coronel Acaro
Peter Voldner
Phil Mason
Philip R Hulse
Ravikanth Varahagiri
Robert J Whitford
Robert Y Oikawa
Ronald Del Aguila
Sebastian Wildfeuer
Thilagavathi K
Thomas Johnson
Uwe Voigt
Yoshihi Akiyama

Register Now

2013 IEEE International Conference on Prognostics and Health Management

Enhancing Safety, Reliability, Availability, and Effectiveness of Systems through PHM

National Institute of Standards and Technology (NIST), Gaithersburg, MD, June 24-27, 2013

www.phmconf.org

Registration for the Annual Conference on Prognostics and Health Management (PHM) in Gaithersburg, MD (Washington DC Metro area) on June 24-27, 2013 is now open. The conference will address the broad range of PHM disciplines and topics including testability, diagnostics, prognostics, and health management across the pertinent disciplines; addressing key technologies at all levels as well as PHM Systems Engineering and Management.

The conference hotel is the Hilton Washington, DC North / Gaithersburg. A block of rooms has been set aside for PHM 2013. Each room reservation includes a complimentary full breakfast, complimentary parking, complimentary guest room internet access and shuttle service to and from the NIST Campus. Reserve your room during registration.

Your conference registration fee includes a daily luncheon at NIST as well as a hosted reception at the Hilton.
To register visit www.phmconf.org/registration.htm or click link below:

REGISTER NOW

Two Tutorial Tracks on Monday (free to all attendees) – 8 Tutorials

Technical Tracks across three days

Why Attend PHM 2013?

- Expand your PHM knowledge / expertise and develop contacts to benefit your organization
- PHM tutorials, covered by the conference registration fee
- Exposure to the broad spectrum of PHM and the experts involved in research, development, and applications
- PHM examined and discussed at all levels of design and development
    - Sensors to systems
    - Software and Hardware
    - Modeling / Algorithms / Techniques / Applications
    - IEEE Standard 1856: Standard Framework for PHM - Electronic Systems
- Daily luncheon included
- Networking with international PHM community

Technical co-sponsors:

The Product Safety Engineering Newsletter is published quarterly during the last month of each calendar quarter. The following deadlines are necessary in order to meet that schedule.

Closing dates for submitted articles:

1Q issue: February 1
2Q issue: May 1
3Q issue: August 1
4Q issue: November 1

Closing dates for news items:

1Q issue: February 15
2Q issue: May 15
3Q issue: August 15
4Q issue: November 15

Closing dates for advertising:

1Q issue: February 15
2Q issue: May 15
3Q issue: August 15
4Q issue: November 15

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Would Like to Hear from You!

I'll close by posing those pesky questions I started out with: Do you think that the Product Safety Engineering Society is meeting your expectations? I invite your feedback on this matter. We need, we ask, for your inputs and suggestions. Please write to me with any comment, or just a "hi" message (but make sure that "hi" is not the only word in the "subject" line or the message gets deleted).

I, as your President am at your service. Please do not hesitate to e-mail me at: eb.joffe@ieee.org. I look forward to your inputs.

Elya Joffe
President IEEE PSES

Institutional Listings

We invite applications for Institutional Listings from firms interested in the product safety field. An Institutional Listing recognizes contributions to support publication of the IEEE Product Safety Engineering Newsletter. To place ad with us, please contact Jim Bacher at j.bacher@ieee.org

Tthe Product Safety Engineering Society will accept advertisements for employment and place looking for work ads on our web page. Please contact Dan Roman for details at dan.roman@ieee.org .

The
Product Safety Engineering Newsletter

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GW Technical Services Inc.
2175 Clarke Drive
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