HITACHI

Fall 2013

# GE Hitachi Nuclear PARTS e-Newsletter

## Welcome to the Fourth Issue of the Quarterly GE Hitachi Nuclear PARTS e-Newsletter!

For an archived copy of the third issue, please click on this link. In this issue, you will find information about a circuit breaker Parts Kitting Program, an inventory management innovation called PAMS Digitized, an update on our Lean Six Sigma Visual Management Process and a surface mitigation technique called Water Jet Peening. Please remember to provide us with feedback on this e-newsletter and input on how we can improve by clicking on the survey link at the bottom of this e-newsletter or by emailing nuclearparts@ge.com. At any point, you can reply "unsubscribe" to the quarterly email in order to be removed from this mailing list.

## Safety First: Tips for the Nuclear Workplace

### Safety Tip:

Support a safety conscious work environment by embracing continuous improvement and the capacity to learn from experiences. Utilize safety training, self-assessments, and benchmarking to encourage learning and continuous improvement in your organization. Nuclear safety benchmarks and continuous improvement reporting encourage knowledge sharing and monitoring across organizations to improve skills and human performance.

## New and Improved: Product and Services Success Stories

### Electrical Parts Kitting: Procurement Efficiency for Breaker Maintenance

Traditionally, preventative maintenance programs for circuit breaker overhauls require multiple transactions to procure large quantities of parts, components, and consumables. To address this challenge, GEH is developing breaker parts kitting solutions for nuclear customers that may include over 1,000 medium voltage breaker replacement parts, including cotter pins, snap rings, brass washers, bushings and piston rings. These kits can be ordered on one purchase order using one GEH part number.

Electrical kitting solutions result in efficiencies for your procurement department by eliminating the administrative burden of issuing individual quotes and purchase orders for the 50-100 GEH safety and/or non-safety part numbers required to service your medium voltage breakers. GEH can customize your electrical parts kits for you. GEH recommends part numbers that you have previously purchased to service your equipment and incorporates any parts that you anticipate needing for your scheduled scope of work. Once the kit composition is finalized, you are given a unique GEH part number that includes the required parts in the quantities needed to properly service each breaker during your outage. Fleet customers can save money by consolidating parts kitting orders across multiple sites to take advantage of significant quantity discounts.

The Electrical Parts Kitting Program is a flexible, proven time-saving and cost-saving option for GEH customers to ensure easy procurement and shipment of GEH electrical parts. Kit development is risk-free, since there are no purchase obligations or fees associated with construction of a kitting proposal.

Continued...

Your GEH PARTS Customer Account Leader is:

**Tina Davis**
tina.davis@ge.com
910-819-1977

Jump To:



Electrical Parts Kitting Program

**Electrical Parts Kitting continued:**

In addition to circuit breaker overhaul kits, GEH is now developing switchgear modification, maintenance or inspection kits. These kits include the required technical development, part numbers, quantities and Bill of Material (BOM).

To learn more about the Electrical Parts Kitting Program and to receive your customized proposal, please contact your GEH Customer Account Leader.

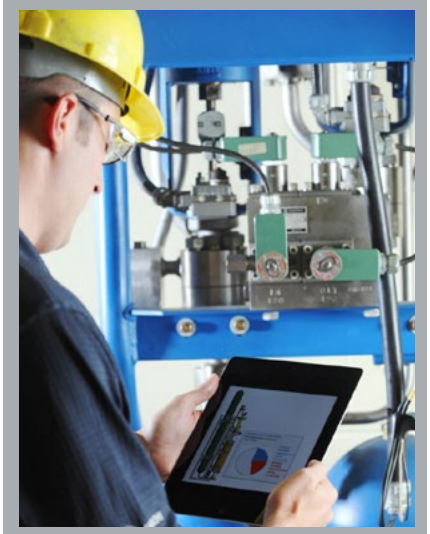
# Enhanced Performance: Technical Solutions to Your Parts Issues

## PAMS Digitized:
### Inventory Management Solution Announced at NUOG Annual Meeting

The Nuclear Utility Obsolescence Group (NUOG) Annual Meeting was held July 22-24, 2013 in Denver, Colorado. Formed in 2000, NUOG assists nuclear utilities in identifying obsolete parts and finding potential replacements with the objective of enhancing safety and reducing vulnerabilities associated with equipment reliability. During the meeting, over 100 procurement and engineering professionals participated in discussions about critical spares programs, collaborative strategies, obsolescence success stories, and inventory management solutions.

GE Hitachi presented Parts Asset Management Solutions (PAMS) which includes inventory management solutions such as PAMS Digitized. PAMS Digitized is a visual application based on OEM drawings that enables users to proactively identify obsolescence, part criticality, and inventory spares issues within critical plant systems. It provides a comprehensive, user-friendly view of parts inventory and results in more efficient generation of accurate RFQs.

For more information about NUOG Annual Meeting, please visit: http://www.nuog.org/. To learn more about PAMS Digitized, please contact Hao Dinh at hao.dinh@ge.com.



PAMS Digitized Visual Application

# Best Practices: Tools You Can Use

## Waste Elimination: Lean Six Sigma's Visual Management Technique

GE Hitachi utilizes Lean Six Sigma as a strategy to maximize value to our customers and reduce variation in our manufacturing and business processes. "Six Sigma" is a highly disciplined process that helps us focus on developing and delivering near-perfect products and services. GEH employs many quality management methods to reduce errors or defects in our process and get as close to "zero defects" as possible. At its core, Six Sigma revolves around a few key concepts:

- Critical to Quality: Attributes most important to the customer
- Defect: Failing to deliver what the customer wants
- Process Capability: What your process can deliver
- Variation: What the customer sees and feels
- Stable Operations: Ensuring consistent, predictable processes to improve what the customer sees and feels
- Design for Six Sigma: Designing to meet customer needs and process capability

GEH has combined Six Sigma ideas with lean manufacturing to develop a methodology called "Lean Six Sigma". "Lean" is waste elimination through examining and prioritizing process flow improvements in the 7 types of waste: overproduction, inventory, extra processing, motion, defects, waiting, and transportation. One of the first steps in identifying Lean process improvement opportunities in warehouse environments is through visual management. To learn more about how to successfully implement visual management strategies through Lean Six Sigma, see the attached GEH PARTS Lean Six Sigma Spotlight. For more information about GEH's Lean Six Sigma programs or partnership opportunities, please visit www.ge.com/sixsigma or contact our Lean Leader and Black Belt Jeffrey Mayton at jeffrey.mayton@ge.com.


Click here to find out more about GE Hitachi's 7S Program

**Continued...**

# Working Together: How Other GE Businesses Can Help

## Surface Mitigation: Enhancing Reactor Vessel Preventative Maintenance

Stress Corrosion Cracking (SCC) is an issue for essential metal components and reactor internal weld metals in both BWRs and PWRs. To address SCC, GE Hitachi offers an integrated approach utilizing Water Jet Peening (WJP) and Laser Peening (LP). Both are established Surface Stress Improvement (SSI) technologies. WJP and LP modify the residual stress-state in metal surfaces from tensile to compressive without significant surface hardening.

Benefits of WJP and LP technology include:

- No foreign materials are introduced
- No adverse effect on UT inspectability after application
- Shortest application time and largest application range
- Low occupational doses

Water Jet Peening and Laser Peening are surface mitigation approaches that protect plant assets, reduce operating costs and provide inspection relief for certain plant equipment. For more information about GEH's surface mitigation technology, please contact Duane Snyder at duaneN.snyder@ge.com.

Click here to see the Surface Mitigation Fact Sheet

## Ask the Expert – Frequently Asked Questions:

If you have any questions about any of the programs or information above, or if you have suggestions for future e-newsletter content, please call 1-800-425-8108 during EST working hours, or email nuclearparts@ge.com.

## GEH Resources:

- GEH Energy Technical Training
  http://www.geenergylearningcenter.com
- Boiling Water Reactors Owners Group (BWROG):
  http://site.ge-energy.com/prod_serv/products/nuclear/en/bwr_owners_group/index.htm
- GEH Press Releases / Newsroom:
  http://www.ge-energy.com/about/press_releases.jsp

## Upcoming GEH Events and Industry Conferences:

Save the Date: The 2014 U.S. Women in Nuclear Region II Conference hosted by GE Hitachi Nuclear Energy will be held February 4-5, 2014 at the Holiday Inn Sunspree Resort in Wrightsville Beach, North Carolina. Registration will be open soon, so please check the US WIN website for details: http://www.winus.org/ and contact Maria Kretzing for conference sponsorship opportunities: maria.kretzing@ge.com.

## Have questions / comments / suggestions?

Email nuclearparts@ge.com or call 1-800-425-8108 during EST business hours. We are interested in hearing your thoughts about this e-newsletter. To provide feedback, please click the customer survey link found below:

http://supportcentral.ge.com/esurvey/takesurvey.asp?p=17778&d=3748712

GE HITACHI

3901 Castle Hayne Road • Wilmington, NC 28402-2819 • United States

**1-800-425-8108**



**Continued...**

GE Hitachi Nuclear PARTS

# PARTS
# Lean Six Sigma Spotlight

Implementation of visual management and workplace organization yields benefits in Service Components Operation

## Benefits:

- Safer workplace
- Reduces risk to on-time delivery
- Promotes culture of participation and innovation

## Our Approach

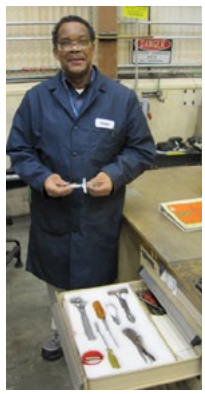
The Parts team is leveraging Lean Manufacturing techniques in its Service Components Operation to reduce risk to on-time delivery while reinforcing quality safeguards. Lean Manufacturing is a philosophy which seeks to minimize the time from customer order to product delivery through the relentless elimination of waste in the production process. There are multiple principles, methods, and tools of varying complexity making up the Lean Manufacturing system. A foundational principle is workplace organization. Workplace organization is simply having what you need, where you need it, when you need it, every time you need it.


## What is 7S?

The program we are using to organize our workplaces is 7S (Safety, Sort, Set, Shine, Service, Standardize, and Sustain). Its goal is to employ team-based standards to improve efficiency and productivity by creating a safer, cleaner, organized workplace with well-maintained equipment.

## Organizational Impact

So far, in 2013, ten week-long 7S events have been conducted in plants at our Wilmington, North Carolina site. These events allow operators and inspectors to take the lead in improving processes and making their workplace better. Each event is hard work, but the benefits are visible. This year, 7S has eliminated over a hundred potential safety issues while recovering thousands of hours annually to be used for additional production or improvement activities.



**For more information on Lean Six Sigma**
**Contact Jeff Mayton, Services PARTS Lean Leader 910.819.3827**

**visit us at** www.ge.com/nuclear

**Continued...**

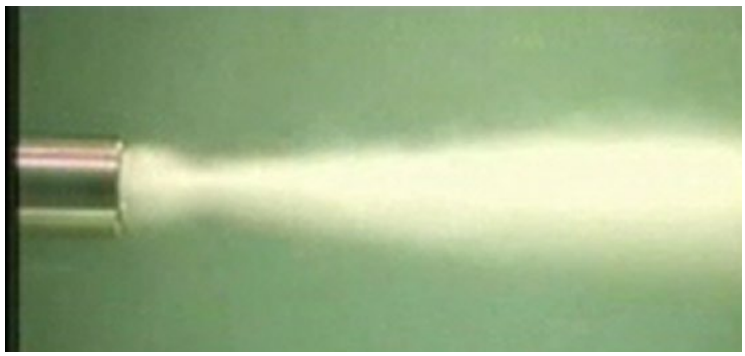
# Surface Mitigation

fact sheet

## Surface Peening

Both Water Jet Peening (WJP) and Laser Peening (LP) are recognized in the industry as some of the most successful surface mitigation techniques available. WJP has been applied to both Pressurized Water Reactors (PWR's) and Boiling Water Reactors (BWR's) in Japan over the past 10 years. LP has been applied extensively in the commercial aerospace industry for the past 11 years.

EPRI and ASME have included both of these technologies in their evaluations and ultimate code case submission.



## How Peening Works

WJP utilizes high speed water jet flow with numerous cavitation's generated by its uniquely designed nozzle(s). The cavitation in the water jet collapse near or on the metal surface generating an intensive pressure wave as a result of the collapse. This results in reducing the residual tensile stress and puts the surface and near-surface layer in high compression thus mitigating it from stress corrosion cracking (SCC).

With LP, a laser beam is imaged onto the surface being mitigated. A thin layer of de-ionized water, which acts as an ablative layer, is also flowed over the same surface. Upon firing of a laser pulse, the intense electric field of the high power laser ablates material at the ablation layer creating a plasma which results in a pressure wave that creates a deep compressive stress layer.

## Features

- Neither technology alters the shape or dimensions of the component being mitigated
- WJP can be utilized both in vessel and on certain components in air (such as the vessel head)
- LP provides the deepest compressive layer of any technology currently offered
- Neither technology introduces foreign material or utilizes any abrasives
- Both technologies are implemented using experienced and proven teams

## Benefits/Differentiators

- Long term mitigation from SCC
- Proven technology
- Reduced risk by employing the original technology developers
- LP has commercial Federal Aviation Administration (FAA) and European Aviation Safety Agency (EASA) acceptance
- WJP is certified by the Japan Power Engineering and Inspection Corporation (JAPEIC) and incorporated into the Japan Society of Mechanical Engineers (JSME) code

**For more information, contact your GE Hitachi Nuclear Energy sales representative or visit us at www.ge.com/nuclear**

HITACHI