

Margaret Harding

2717 Warlick Drive, Wilmington, NC 28409, 910.803.1390,

Margaret@4factorconsulting.com

Summary

Engineering and business leader with significant experience in nuclear technology, regulatory compliance and sound business practices. Strong written and verbal communications abilities coupled with excellent coaching and interpersonal skills. Outstanding problem solving skills with a proven track record of delivery.

Highlights

- Consulting for DOE/NNSA on process improvements to the 10 CFR Part 810 authorization process.
 - Consulting for DOE/NNSA on the final 10 CFR part 810 regulation. Authored and edited the preamble and edited the final rule issued 2/23/2015.
 - Working with Oak Ridge National Lab on advanced simulation integration, including integrated quality programs and partnering with industry to enhance awareness of available methods and improve applicability.
 - Consulting with a number of companies and industry associations in and around nuclear industry. Providing perspective and strategy both to improve specific businesses and to move the industry forward.
 - Speaking at energy industry meetings on numerous topics: including Fukushima, regulatory issues, export control concerns and, nuclear energy's importance. (See List on last page)
 - Columnist for industry weekly, Fuel Cycle Week 2012-2014.
 - Analysis for financial companies looking at investment implications as well as potential merger and acquisition opportunities in the nuclear industry.
 - A certified NQA lead auditor, I created a DOE compliant Nuclear QA system, including a Commercial Grade Dedication (CGD) program for an engineering firm.
 - Rolled out a new ERP system, ensuring compliance with both Nuclear and SOX regulatory processes.
 - Improved delivery timeliness and cost and increase capacity in a spare parts CGD business, by restructuring business organization and refining business models relative to supply chain.
 - Led efforts to become compliant with new global environmental regulations. Requiring a nuanced understanding of the interaction between world-wide nuclear regulation and new environmental regulations.
 - Orchestrated work with nuclear regulators around the world to successfully deploy new products and upgrades in numerous countries, including Germany, Sweden, Switzerland, Spain, Mexico, Taiwan, and Japan.
-

Career History & Accomplishments

President, *4 Factor Consulting, LLC*

*2009-
Present*

- Consulting with DOE on international export control regulation. Authored and edited the preamble and edited the final rule issued 2/23/2015. Currently, working with DOE to create a ISO-9001 compliant processes to achieve dual goal of expanding nuclear industry and preventing proliferation.
- Consulting with National Labs on advanced simulation methods market, quality requirements and opportunities for industry collaboration.
- Consulting with a number of companies and industry associations in and around nuclear industry. Providing perspective and strategy both to improve specific businesses and to move the industry forward.
- Adjunct Assistant Professor at Iowa State University where I am teaching an innovative class called Nuclear Energy in Society. The class reviews the Political, Economic, Social, and Technology implications of nuclear energy in society in the U.S. and globally, including a review of the three major accidents. The students gain a broader appreciation of nuclear technology implications
- Received ANS Special Award for Media and Communication for efforts communicating to media and public about events at Fukushima.
- Speaking at nuclear industry meetings on a variety of relevant topics to the Nuclear Industry. (See List on last page)
- Analysis of Fukushima impact for financial companies looking at investment implications as well as potential merger and acquisition opportunities.
- Received ANS Presidential citation for work communicating with numerous media outlets regarding Fukushima Nuclear Power Plant events.
- Revised and restructuring a financial analysis program that evaluates life cycle cost for Nuclear Power Plants.
- Created a DOE compliant Nuclear QA system, including a Commercial Grade Dedication (CGD) program for an engineering firm.

Vice President of Engineering Quality, *GE-Hitachi Nuclear Energy*

2008-2009

- Led the efforts to become compliant with new global regulations beyond the nuclear regulators. Saved >\$10MM in costs by avoiding unnecessary work while still achieving full compliance. This effort required a nuanced understanding of the interaction between world-wide nuclear regulation and additional environmental regulations being rolled out.
- Certified as a Nuclear Quality Assurance auditor. Using my wide ranging experience in engineering design and business requirements, internal audits of procurement processes revealed issues and offered solutions before major compliance misses occurred.

Master Black Belt for Fulfillment, *GE Nuclear Energy*

2006-2007

- Led team of more than a dozen people in final days of development of a new ERP system. These efforts resulted in a smooth roll-out that implemented both Nuclear and SOX regulatory processes in a compliant manner.
- Led efforts in the spare parts CGD business to improve delivery timeliness and cost and increase capacity. Efforts included restructuring business organization and refining business models relative to supply chain. Immediate impact was >\$2.5MM in sales in a single quarter.

Fuel Engineering Leader, *Global Nuclear Fuel (GNF)*

2003-2005

- Led an engineering staff of 50-75 people around the world, running a \$30MM business that provided analytical services to nuclear power plants in US, Europe and Asia.
- Managed all numerical methods for GE-Hitachi, including regulatory approvals, business plans, and development cycles.
- Orchestrated work with nuclear regulators around the world to successfully deploy new products and upgrades in numerous countries, including Germany, Sweden, Switzerland, Spain, Mexico, Taiwan, and Japan.
- Led development of a number of new products beyond my own business area. These products resulted in more than \$50MM in sales.
- Restructured the engineering organization to improve the integration with other engineering teams within GE-Hitachi.

Numerous positions, *GE Nuclear Energy*

1981-2002

- Managed a \$6.3MM new product development budget.
 - Led the development of creative ways to deliver new products to market on time with high quality resulting in >\$100MM in sales.
 - Led a team of 45 people doing a wide variety of engineering support for 90 unique reactor sites around the world. Drove improvements to documentation of engineering processes, resulting in significant reduction in issues and improved training of new engineering personnel staffing increase to compensate for retirements, relocations, and resurgence of nuclear.
 - Led the Y2K required upgrades of core monitoring software for the entire served fleet. On-time delivery to every reactor prevented unnecessary additional oversight by NRC and improved customer relationships.
 - Coordinated reload design and licensing for entire fleet of reactors. Improved use of resources and on-time delivery of services.
 - Performed core design, multi-cycle analysis, and economic evaluations for proposals, new products, and requisition work for all GE reactor designs.
-

Memberships, Affiliations and Awards

- Eminent Engineer, Tau Beta Pi, Iowa Alpha Chapter, 2014
- ANS Special Award on media and communications, 2012
- ANS Presidential Citation, Fukushima Rapid Response, 2011
- Member, American Nuclear Society
- Former Member, Iowa State University Engineering College Industrial Advisory Council.
- TWIN award from Santa Clara Valley YWCA – 2002
- One patent on spent fuel pool management techniques

Education

BS Degree in Nuclear Engineering

1981

Iowa State University, Ames, IA

Publications

- M. Harding “Cranberries Sauce, Two Ways” Fuel Cycle Week, Vol 13, No 594 November 20, 2014
- M. Harding “Remembering Earworms” Fuel Cycle Week, Vol 13, No. 586 September 25, 2014
- M. Harding “Dog Days of Summer” Fuel Cycle Week, Vol 13, No. 582 August 28, 2014
- M. Harding “Communicate. Period.” Fuel Cycle Week, Vol 13, No. 575 July 3, 2014
- M. Harding “Small Modular Reactors: Shoulda, Woulda, Coulda” Fuel Cycle Week, Vol 13, No. 543 June 5, 2014
- M. Harding “(Energy) Liar’s Poker and Other Games of Chance” Fuel Cycle Week, Vol 13, No. 566 April 24, 2014
- M. Harding “A Love Letter to Engineers” Fuel Cycle Week, Vol 13, No. 558 February 27, 2014
- M. Harding “Global Warming or Not, Methane Is A Bad Plan” Fuel Cycle Week, Vol 13, No. 554 January 30, 2014
- M. Harding “Kill the Goose That Lays Golden Eggs” Fuel Cycle Week, Vol 13, No. 550 January 3, 2014
- M. Harding “Getting the Grade On 2013 Predictions” Fuel Cycle Week, Vol 12, No. 549 December 19, 2013
- M. Harding “No Apologies for Nuclear” Fuel Cycle Week, Vol 12, No. 546 November 21, 2013
- M. Harding “Of Pandora and Prometheus” Fuel Cycle Week, Vol 12, No. 543 October 31, 2013
- M. Harding “Yucca Mountain Follies: Let’s Rewrite The Ending, Please” Fuel Cycle Week, Vol 12, No. 538 September 26, 2013
- M. Harding “DOE’s New Export Control Rule Both Hits and Misses” Fuel Cycle Week, Vol 12, No. 531 August 1, 2013
- M. Harding “Plant Closures and Stupid Decisions” Fuel Cycle Week, Vol 12, No. 530 July 25, 2013
- M. Harding “Whack a Mole? Build a Reactor? What Game Shall We Play?” Fuel Cycle Week, Vol 12, No. 527 June 27, 2013
- M. Harding “A Tale of Two Nominees” Fuel Cycle Week, Vol 12, No. 524 June 6, 2013
- M. Harding “Spring has Sprung: Flowers and Technology in Bloom” Fuel Cycle Week, Vol 12, No. 518 April 25, 2013
- M. Harding “Beware the Ides of Hasty Regulation” Fuel Cycle Week, Vol 12, No. 514 March 28, 2013
- M. Harding “Star Wars and Export Controls” Fuel Cycle Week, Vol 12, No. 510 February 28, 2013
- M. Harding “Groundhogs and Daffodils” Fuel Cycle Week, Vol 12, No. 506 January 31, 2013
- G. Maxwell and M. Harding “Incorporating Instructional Technology into a Distance Teaching Opportunity” ANS Winter Meeting, November 2012
- R. Graber and M. Harding, “The Impact of the Fukushima Nuclear Accident on the Future of Nuclear Power” published in the International Association of Energy Economists Forum, 4Q 2011.
-

List of Invited Speaking engagements

- **June 19, 2015:** “Export Control and Non-proliferation Discussion” – Washington, DC – American Nuclear Society event for Congressional staff
- **April 8, 2015:** “Communicating Risk to Policy Makers” – Raleigh, NC – North Carolina Radiology Technicians
- **March 13, 2015:** “Industry and Government Cooperation – Innovative Means to Increase Market efficiency of Export Control Regulations” – Panelist - Vienna, Austria – NSG International Seminar on Due Diligence, Risk Assessment and Supply Chain management: Combatting Nuclear Proliferation
- **March 5, 2013:** “Community Outrage” – Carolina Beach, NC – North Carolina Health Physics Society meeting
- **December 10, 2014:** “Export Control and Non-proliferation Discussion” – Washington, DC – American Nuclear Society event for Congressional staff
- **December 7, 2014:** “A Love Letter to Engineers” – Tau Beta Pi Iowa Alpha annual banquet, Ames, Iowa
- **November 18, 2014:** “Potential impact of export control and non-proliferation issues on collaboration” – keynote address - IAEA INPRO meeting, Vienna, Austria
- **September 11, 2014:** “Export Control and Non-proliferation Discussion” – Washington, DC – American Nuclear Society event for Congressional staff
- **September 11, 2014:** “Nuclear Blogger Roundtable with Chairman MacFarlane” American Nuclear Society sponsored, Washington, DC
- **August 11, 2014:** “Lessons Learned and Economic Consequences of Recent Nuclear Plant Closures” ANS Utility Working Conference 2014, Amelia Island, FL
- **May 29, 2014:** “Regulation and Efficient Development of SMRs” Platts 5th annual SMR conference, Washington, DC.
- **May 21, 2014:** “The Face of Nuclear” Pittsburg ANS Local Section, Cranberry Township, PA
- **January 22, 2014 & April 24, 2014:** “Global Look at Nuclear Power’s Future” ANS Students sections at NCSU and MIT
- **November 12, 2013:** “Risk Perception and Communication” Panelist – Washington, DC - American Nuclear Society Winter meeting
- **November 1, 2013:** “Fuel for Small Modular Reactors: From Concept to Core” Panel Moderator – SMR Conference, Idaho Falls, ID
- **October 22, 2013:** “Nuclear – Power for the Future” – Wilmington, NC – Public event hosted by ANS Local Section and Cape Fear Community College
- **May 5, 2013:** “You are the Face of Nuclear – Understanding Media during Fukushima” – University of California - Berkeley
- **April 13, 2013:** “You are the Face of Nuclear” - Keynote Speaker – Cambridge, MA – American Nuclear Society Annual Student Conference
- **February 21, 2013:** “Export of Nuclear Technology – Opportunity and Challenge of US Exporters” – Panel Discussion Platts Nuclear Conference
- **November 13, 2012:** “Incorporating Instructional Technology into a Distance Teaching Opportunity” – San Diego, CA – American Nuclear Society Winter Meeting
- **October 10, 2012:** “Nuclear Communication Strategies” – Mumbai, India – American Nuclear Society India Section