

Trust and Confidence through Quality

By Gale Hauck, Westinghouse Electric Company.

Gale Hauck

Gale Hauck joined Westinghouse in January 2008. She has held roles in Engineering Project Management, Marketing, Product Management, and currently is a Principal Quality Engineer for Internal Audits. She is an active member of the American Nuclear Society and serves on the Board of Directors.

Before joining Westinghouse, Gale was a Reactor Engineer for Entergy Nuclear at Indian Point for 4 years, and spent a short time at the Hanford Decommissioning Site in Washington State.

Gale has a bachelor's degree in Nuclear Engineering & Physics from Rensselaer Polytechnic Institute, and a master's degree in Nuclear Engineering from Pennsylvania State University.

An interview by Newal Agnihotri, Editor of Nuclear Plant Journal, at the American Nuclear Society Winter Conference in Anaheim, California on November 11, 2014.

Nuclear quality and safety are some of the most important and unique aspects of our industry. It is essential that we hold ourselves to the highest standards. A key part of this commitment is to audit all aspects of our organization to verify that not only are we meeting the code requirements, but that we are sharing lessons learned and best practices. The Westinghouse Quality organization oversees all of the internal audits where quality work is being performed globally.

1. How is the compliance to 10CFR50 Appendix B ensured at Westinghouse?

Westinghouse has a Quality Management System (QMS), which clearly defines the regulations and standards we must follow. The QMS is implemented with procedures, and detailed work instructions,



which all employees have to follow. This keeps us in compliance with the Quality Management System, and therefore with the regulations, as well as our internal standards.

So for example, it's defined in our QMS that we comply with Title 10 of the Code of Federal Regulations Part 50 Appendix B for all nuclear power plants under Nuclear Regulatory Commission regulatory requirements. That means that we implement NRC Regulatory Guide 1.28, *Quality Assurance Program Criteria (Design And Construction)* – and that this guide endorses American Society of Mechanical Engineers' (ASME) NQA-1-2008 Edition, *Quality Assurance Requirements for Nuclear Facility Applications*, and so on. Westinghouse supplements this with its own documents for nuclear steam supply systems and pressure-retaining components and related services with documents that require that we implement related ASME quality assurance programs, or similar programs depending on governing regulations or customer contract requirements.

Our QMS also directs our organization to establish the policies and procedures that keep us in compliance

with the International Organization for Standardization requirements for ISO 9001, *Quality Management Systems*– basically the international quality standards. And we have a Project Quality Plan process for adapting our QMS requirements to other requirements and regulations, such as the International Atomic Energy Agency's (IAEA) or ISO 14001, *Environmental Management Systems*, the Occupational Health and Safety Standards and literally regulatory requirements and standards from all over the world.

So, while there are many regulations and standards to follow, we have a well-defined framework and I know where to go for what I need. We also have a pretty extensive training program – it takes one to two years to become qualified as a Westinghouse Lead Auditor.

2.. How is quality control implemented by Westinghouse?

There are many aspects to quality control, but the part I am involved with is internal quality auditing. Westinghouse performs several types of audits, including environmental, health and safety; financial; internal quality and supplier quality. Financial audits are what most people think of when I say I'm an auditor, but I don't look at financial aspects at all. My group performs internal audits – we develop an audit schedule that encompasses all of our product lines and geographic locations where Westinghouse is performing quality-related work. These audits can cover everything from engineering work at our office in Madrid to fuel fabrication at our factory in South Carolina. Westinghouse also has a group that performs supplier quality audits. Our supplier quality auditors serve a very similar function, but instead of looking at internal Westinghouse work, they audit quality work at supplier sites around the world. Last week at our facility in Newington, New Hampshire, I was observing inspections of pump housings, part of the pressure barrier of the reactor coolant system for one of our customer plants. During my observations, there was a gentleman from one of our suppliers there to audit quality inspections that I was observing as part of our internal audit process. We also had a quality oversight inspector from headquarters overseeing the inspections that were being done on the ASME code. There are multiple layers of oversight.

3. *How do you ensure that counterfeit parts are prevented from being used in the equipment in Westinghouse?*

Our quality program requires that we have a process to verify that what we receive is what we think it is and what we're installing is what it's supposed to be, whether it's a box of bolts or a major component. All of our facilities are required to have a check for counterfeit or damaged parts, and to determine what we're using is the right item with the right qualities, the right safety factors, and everything is as it should be, in a safe and effective manner.

I went to a session at the American Nuclear Society Meeting, on ethics. Ethics is so important as an auditor, as someone who is looking at these quality programs and making sure that people are doing the right thing all the time, and making sure that our management and our procedures and our programs and the culture of our organization is fulfilling that necessity of safety culture and high ethical standards. As an auditor, I'm really aware of that. Little things: Westinghouse has a policy that when you walk down the stairs, you hold the handrail. You better believe if I'm walking down the stairs, I am holding the handrail because I am there to make sure we're doing what we say were doing. How could anybody trust what I have to say if I don't do what I expect everyone else to be doing?

4. *How do you measure safety culture?*

One of the ways that our management gets information about our safety culture and how it's doing is from internal audits. We're talking to all levels of the organization – inspectors, mechanics, plant managers, etc., and we get a really good idea about the safety culture of that organization or location. For the audit last week at Newington, I conducted safety culture interviews. After observing an inspector or a mechanic or a welder or an engineer or a project manager, and getting the information I needed from them about the program and the process and how they were implementing our quality standards, I would interview them about safety culture and check to see if they understand the difference between a nuclear safety culture and a safety conscious work environment (SCWE). I would ask them for specific examples of how they support the nuclear safety culture and how their management

supports and encourages safety culture as well. We also work closely with our Global Nuclear Safety Culture Manager who is also part of our Quality organization.

5. *How is Westinghouse's corrective action program implemented?*

Our corrective action program is written to comply with our QMS.

The basic way it works is somebody's doing work: If it's quality work, they have to be working under a procedure or an approved work instruction. For example, if they're trying to do their work and something doesn't happen the way it says it will in the procedure, or if they're an expert in that area and they realize that the way that the procedure is written is not correct, they're required to stop what they're doing, write an issue report, report it to their supervisor or their manager or enter it into our corrective action system themselves. The issue must be resolved before they move forward with completing that work.

You can't do work with a procedure that has an error. So, any time you see something that may be a safety, quality or an engineering concern of any kind, you enter it into the system. It gets assigned an owner, and the owner is responsible for setting a number of actions to correct the issue and especially for significant ones, to ensure that it doesn't happen again. That's basically how our corrective action system works.

There are different significance levels that require different causal analyses. If it's a highly significant issue, it'll have a root cause analysis, and there'll be a whole team involved in making sure that we figure out why it happened and how barriers were broken. It should never be one barrier that keeps something negative from happening. There should always be procedural controls and management controls and individual human performance, there should be a number of things. When an issue occurs, there's a whole bunch of barriers that might have broken or been missed to allow that to happen. We recently implemented a new process and tool called Corrective Action, Prevention and Learning (CAPAL) where we capture issues and learning to report across the organization.

6. *How is the experience gained from one plant implemented at another plant, so that you don't commit the same mistake?*

My group is responsible for making sure that Westinghouse is in compliance with the codes and standards and Westinghouse internal requirements for quality. We provide suggestions for improvement to those organizations, and share lessons learned. We are not the continuous improvement organization; continuous improvement is handled by our Performance Improvement Team, which is also a part of our Global Quality organization. We are making sure that we are maintaining our quality standards. Westinghouse has another organization that focuses on continuous improvement, and looks at the ways to make improvements to quality work. As a whole, we look to make sure that our internal organizations have a mechanism for evaluating past work and ensuring that they are coming up with ways to continually improve.

7. *How do you feel about your personal experience with your role in the industry?*

When I started working at Westinghouse, after having come from a utility, I noticed that the safety culture is very much the same in terms of the very, very high level of importance provided to all aspects of work. But in terms of the engineering work, I noticed a difference in the confidence I felt from a new level of trust and responsibility given by my colleagues and managers. Perhaps that is because I simply had more experience but through it I gained more insight.

It's the leader's responsibility to provide not only the resources and information that someone needs to complete a task that's been delegated, but to provide trust and support to know that they can accomplish it. Having that trust and confidence from your leadership is essential to being successful.

We hold ourselves to the highest standards and work to make sure everyone within the company has the tools and the confidence to meet them, and we have the programs to correct things if something does not happen as expected.

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