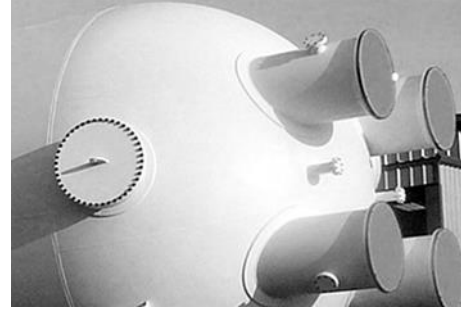
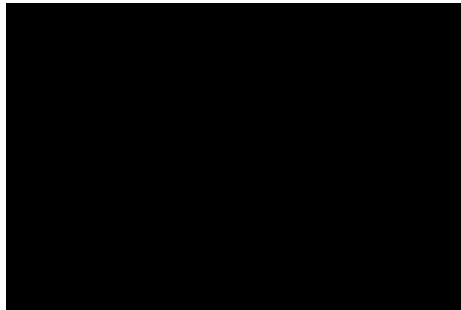


**CURTISS -
WRIGHT**

Nuclear Division



Staying Agile in a Changing Nuclear Market



Staying Agile in a Changing Nuclear Market

What will be discussed:

- **Why was Delivering the Nuclear Promise (DNP) established?**
- **What can suppliers do to contribute?**
 - Maintain operational focus
 - Increase value
 - Improve efficiency

Why was DNP established?

- **Delivering the Nuclear Promise: Advancing Safety, Reliability, and Economic Performance** (Prepared by the Nuclear Energy Institute (NEI) February 2016)
 - “There has been a 28 percent increase in total generation costs for U.S. reactors during the past decade—to an average of \$36.27 per megawatt-hour [(MWh)] in 2014”
 - Goals:
 - 30 percent reduction in electric generating costs, on average industrywide
 - Drive changes so the industry is able to monetize the value that nuclear power plants provide
 - Optimize resourcing throughout the nuclear enterprise to spur greater efficiencies at nuclear energy facilities and among suppliers.

- **Delivering the Nuclear Promise: Forward Strategy**
(Prepared by NEI March 2018)
 - Boosting Efficiency
 - 67 Efficiency Bulletins
 - \$1.6 Billion enabled savings
 - 130 Million annual licensing savings
 - Generation costs dropped 19%
 - States are recognizing the value of, and supporting Nuclear power:
 - New York: \$1.6 Billion
 - Connecticut: \$1.5 Billion
 - Illinois: \$1.2 Billion

Why is DNP so important?

- **Since 2013, six nuclear reactors have shut down permanently:**
 - Kewaunee
 - Songs 2&3
 - Crystal River
 - Vermont Yankee
 - Fort Calhoun

Why is DNP so important?

- Since 2013, six nuclear reactors have shut down permanently.
- **A number of our clients have announced future closure:**
 - Pilgrim
 - Oyster Creek
 - TMI 1
 - Palisades
 - Diablo Canyon
 - Indian Point
 - Davis-Besse
 - Perry
 - Beaver Valley

Why is DNP so important?

- Since 2013, six nuclear reactors have shut down permanently.
- A number of our clients have announced closure.
- **And a number more of our clients are at risk for closure.**

Why is DNP so important?

- Since 2013, six nuclear reactors have shut down permanently.
- A number of our clients have announced closure.
- A number of our clients are at risk for closure.
- **DNP is an initiative to help nuclear advance safety, reliability, and economic performance.**

Delivering the Nuclear Promise

- Utilities deliver by maintaining operational focus, increasing value, and improving efficiency.



What can suppliers do to contribute?

Maintaining operational focus:

- Focus on areas most important to delivering what our clients need
- On-time
- Right the first time

Increase value:

- Develop products that cost less to operate over their lifetime
- Partner with clients

Control costs:

- Reduce administrative burdens that aren't value adding
- Communicate more effectively (internally and with clients)

What can suppliers do to contribute?

While maintaining our focus on quality, suppliers can increase value and control costs (improve efficiency):

- **Implement provisions published in NQA-1, by NEI, and endorsed by the NRC**
- **Minimize supplier maintenance**
- **Write guidance (instead of requirements) where appropriate**
- **Partner with clients to deliver the nuclear promise**

Implementing Provisions

How does an organization implement provisions?

- **Know every element of the provision:**
 - Problems arise when organizations remove requirements without implementing associated controls
- **Plan the provision:**
 - How does this provision fit into your scope of supply, Program, and clients' expectations?
- **Document the provision:**
 - Revise QAM and applicable SOPs
 - Be sure to include every element and boundary

Implementing Provisions

Implement provisions published by NEI and endorsed by the NRC:

- **NEI 14-05A, Revision 0: Guidelines for the Use of Accreditation in Lieu of Commercial Grade Surveys for Procurement of Laboratory Calibration and Test Services**
 - Released March 2015
 - Endorsed by NRC March 2016
- **Expanded Provisions:**
 - Accredited Testing Services
 - ILAC Accreditation for Calibration and Testing Services (not limited to laboratory calibration services accredited by specific U.S. accreditation bodies)

Implementing Provisions

NQA-1 2015 Part I, Paragraph 201.3 *Suppliers and Other Nuclear Support Organizations:*

- **All applicable quality assurance program elements shall be audited at least once each year or at least once during the life of the activity, whichever is shorter.**
- **This interval may be extended up to 2 years based on:**
 - The results of an annual evaluation** and
 - Objective evidence that:
 - The activities are being satisfactorily accomplished
 - In accordance with the applicable quality assurance program elements.

Implementing Provisions

Implement provisions specified in NQA-1:

■ ****Annual Evaluations:**

- Assessment of the adequacy and effective implementation of the quality assurance program based upon review of such information as the following:
 - Previous audit results and their dispositions;
 - Documents and records, such as nonconformance reports, corrective action reports, and their dispositions;
 - Independent information (e.g., from external sources such as client or regulator assessment activities, generic experience of the nuclear industry, ASME, peer organizations, and regulating bodies);
 - Historical performance for products or services; and
 - Changes in responsibilities, resources, management, or program
- If an adverse trend is identified, or an annual evaluation shows ineffective implementation in a functional area, the extension of the internal audit frequency interval shall be rescinded, and an audit scheduled as soon as practicable.

Implementing Provisions

- **Implementing this provision effectively can allow a company to focus efforts in the right areas:**
 - Functional areas that perform well according to the preceding criteria may not need to be audited annually
 - Focus more time and resources on areas that need improvement as indicated by condition reporting trends or other data

Implementing Provisions

Supported by previous guidance:

- **NQA-1 2008/09a Nonmandatory Appendix 18A-1 Paragraph 203.1**
- **NUREG-0800, Quality Assurance Program Description – Design Certification, Early Site Permit and New License Applicants**
 - Released March 2007
- **NEI 11-04A Revision 1, Nuclear Generation Quality Assurance Program Description**
 - Released August 2013

Reduce Administrative Burdens

- **How much does an audit or survey cost to perform?**
- **How much does a desktop evaluation cost to perform?**
- **The current request-to-performance ratio for NIAC is about 6-to-1**

Reduce Administrative Burdens

Minimize Supplier maintenance by using NIAC:

- **Reduce the number of audits or surveys to perform**
 - Reduce the costs associated with those audits or surveys to the cost of a third party evaluation.
 - Free up resources that would otherwise be committed.
 - Preparation
 - Performance
 - Reporting
 - Closure
- **Get credit for any audits or surveys you have performed that have been requested by other NIAC members**

Reduce Administrative Burdens

Write guidance (instead of requirements) where appropriate for areas that need to be strengthened or clarified:

- **What areas do you consider important that are not detailed in 10 CFR Part 50 Appendix B and Part 21, or the Standard you may use to implement them?**
 - Corrective Action?
 - Hosting Audits?
 - Relocating Facilities?
 - Positive Nuclear Safety Culture?
 - Augmented Quality?

■ Augmented Quality

- Clearly establish requirements during the proposal phase if possible; contract at the latest:
 - Augmented Quality controls
 - Applicable program elements
 - Design?
 - Test?
 - Inspection?
 - Qualification of personnel?
 - Condition reporting?

■ Graded Approach (ASME NQA-1:2015 Definition)

- The process employed, once the applicability of the requirement to the scope of the organization's activity has been determined, to ensure that the levels of analyses, documentation, and actions used to comply with requirements are commensurate with the following:
 - the relative importance to nuclear safety
 - the magnitude of any hazard involved
 - the life-cycle stage of a facility or item
 - the mission of a facility
 - the particular characteristics of a facility or item
 - the relative importance to radiological and nonradiological hazards
 - any other relevant factors

- **Graded Approach (simple terms)**

- An approach to Quality that, based on safety significance and risk, appropriately adjusts the program to meet technical and contractual requirements in accordance with the regulations.
- Examples?
 - Engineering (justification)
 - Inspection (tightening requirements)

Partner with Clients

- **Provide products that:**
 - Provide efficiencies
 - Reduce task duration or Man-REM
 - Cost less to operate over their lifetime
 - Decrease preventive maintenance

- **Examples?**

- **Reduce Inventory costs**
 - Reduce the number of spares required
 - Standardize items and specifications
 - Design products that may be configured for different functions
- **Identify alternatives to OEM parts**
- **Examples?**

Reduce task duration or Man-REM

- **Identify methods that mitigate or eliminate radiological hazards that are part of the process**
 - Eliminate the need for a person to enter contaminated or high rad areas
 - Design products to eliminate non-value added steps*
 - Improve processes to facilitate concurrent activities*

- **Examples?**

*Sound familiar?

Develop Products that Cost Less to Operate over their Lifetime

- **Increase reliability and component availability**
 - Develop redundancy within components
- **Predict failure modes and timing**
- **Improve component lifespan**
- **Improve equipment efficiency**
- **Reduce maintenance costs or time**
- **Improve data transmission and exchange**

- **Examples?**

Staying Agile in a Changing Nuclear Market

Conclusion:

- **DNP is important to every one of us in this room.**
- **Supplier's can contribute without sacrificing quality and cutting costs:**
 - Maintain operational focus
 - Increase value
 - Improve efficiency