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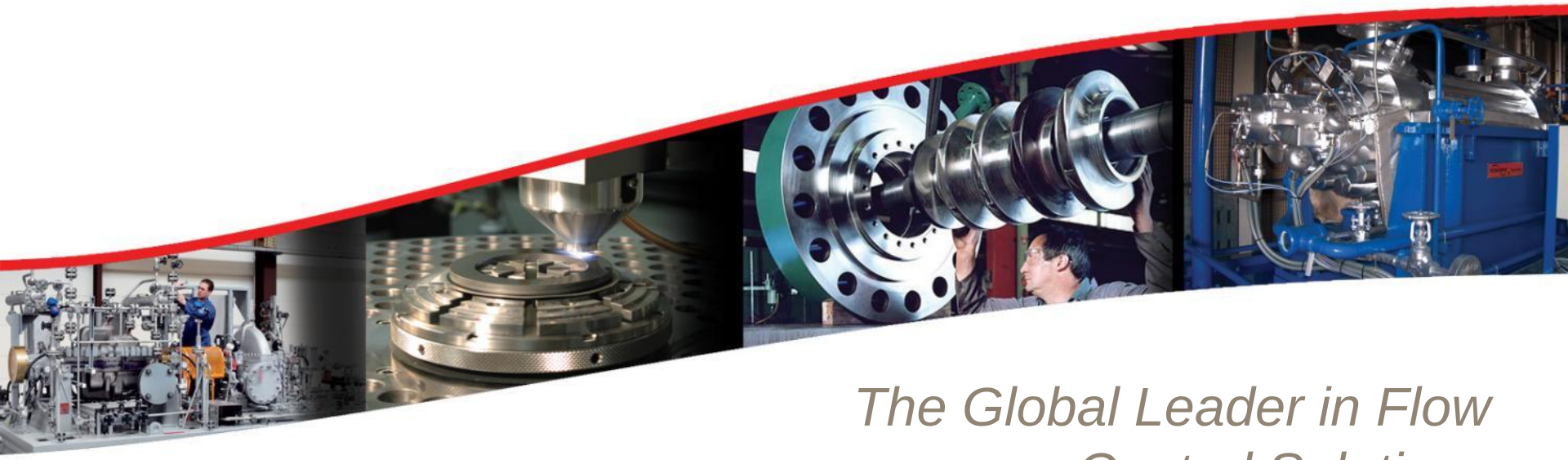

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***Experience In Motion***

# Market Leader in Global Fluid Motion and Control

## *Worldwide Integrated Operations*

### Flow Solutions

Engineered Products

- Engineered Pumps
- API Pumps
- Vertical Circulating Pumps
- Mechanical Seals
- Services

Industrial Products

- Water Pumps
- Vertical Turbine Pumps
- Industrial Pumps
- Services

### Flow Control

Power, Chemical, Oil & Gas, Automation, & General Industries

- Gate, Globe & Check Valves
- Control Valves
- Ball Valves
- Plug Valves
- Actuators
- Positioners
- Steam Traps & energy recovery systems
- Boiler Controls
- Services

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# NRC Workshop Presentation

- Certifications and QA Programs at Flowserve Raleigh, NC
  - ASME N, NPT, NA Certificates of Authorization
  - 10 CFR Appendix B QA Program
  - NQA-1: 2000 QA Program
  - ASME Section VIII – “U”
  - ASME Section I – “PP”
  - NBIC Certified – Repair – “NR” and “R”
  - ISO 9000 – 2008 Certified
  - European PED 97/23/EC – “H” and “H-1” Modules

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# NRC Workshop Presentation

## ASME Survey / NUPIC Audit / NRC Inspection

A **Flowserve - Flow Control Division** Perspective

**Challenges**

**Experiences**

**Lessons Learned**

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# NRC Workshop Presentation

- **Acronyms**

- ASME – American Society of Mechanical Engineers

- NUPIC – Nuclear Utilities Procurement Issues Committee

- NRC – United States Nuclear Regulatory Commission

*Boy Scout Motto*

***"Be Prepared"***

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# NRC Workshop Presentation

## Survey / Audit / Inspection – Notification

ASME Survey - By application to obtain or renew ASME Certificate of Authorization.

NUPIC Audit - Request by NUPIC Member Utility to perform an Audit to qualify your organization as a supplier for multiple NUPIC Utility Members.

NRC Inspection - By telephone call, followed by a letter, that they are coming to perform an Inspection. The NRC is not required to give you warning.

# NRC Workshop Presentation

## General Preparation

- Determine size of Team and dates of visit.
- Broadly communicate within your organization that these activities are going to take place.
- Reserve a space for the Team to work.
- Place copies of QA Manual, Procedures, and Instructions in designated work space for easy access to both the Team and your employees.

# NRC Workshop Presentation

## Preparation for Survey / Audit / Inspection

- ASME Survey:
  - Make application to ASME at least 6 Months in advance of Certification needs or renewal.
  - Communicate / Contract with Authorized Inspection Agency (AIA)
    - Required for N Type Certification.
    - QSC Holders may benefit by AIA inputs.
  - Have Authorized Nuclear Inspector Supervisor (ANIS) review ASME QA Manual ahead of the Survey date.
  - Suggest that ANIS conduct “Pre-survey Audit” of ASME QA Program Implementation.

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- Review ASME Checklist to assure all applicable items are addressed in QA Manual, Procedures, and Instructions.

- Complete other ASME Forms with consideration to your business and certification needs.

- Prepare a Demonstration or select work in-process reflects the **highest** level ASME Certification scope.
  - Have documentation packages ready and available which provide objective evidence of activities which fall under your ASME Scope. ( Unqualified Source Material / Supply of Material to others, etc. )

- Conduct an Internal Audit of the Demonstration / selected work to assure full QA Program and Code compliance.

# NRC Workshop Presentation

- NUPIC Audit:
  - The Team Leader from the Utility assigned to conduct the NUPIC Audit will contact you. Confirmation will be by letter.
  - Team size and duration may vary, as many as 8 Auditors for 5 days.
  - Obtain a copy of the NUPIC Audit Checklist from the Team Leader.
  - Request a list of any Industry Issues from Team Leader.
  - Prepare a list of Utilities Orders that are active or been recently provided as NUPIC Audit Check items.
  - Pay particular attention to areas of Industry focus. ( i.e.. Commercial Grade Dedication / Detection of Counterfeit and Fraudulent Material )
  - NUPIC is looking for implementation of “Human Performance” tools within the organization.

# NRC Workshop Presentation

- NRC Inspections:
  - NRC will call and send a confirmation letter 30 days in advance of the Inspection dates.
  - Inspection Team size and duration may vary, however communication with the assigned Inspection Team Leader should confirm this information. Our experience has been 5 Inspectors for 5 days.
  - NRC maintains a Web Site of useful information which may be used in preparation for their Inspection.
    - http://www.nrc.gov/ - NRC Home Page
    - http://www.nrc.gov/reactors/new-reactors/oversight/quality-assurance/vendor-insp/insp-reports.html - Vendor Inspection Reports
    - http://www.nrc.gov/reactors/new-reactors/oversight/quality-assurance/vendor-insp/insp-procedures.html Vendor Inspection Procedures
    - http://www.nrc.gov/reading-rm/doc-collections/cfr/part021/full-text.html - Latest revision of 10CFR Part 21
  - A review of recent NRC Inspection Reports provides insight as to what issues and lessons learned by others.

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- A review of NRC Inspection Procedures provides information which will help you assure your QA Program Procedures adequately address requirements:
  - IP 43002 Routine Inspections of Nuclear Vendors
  - IP 36100 Inspection of 10 CFR Parts 21 and 50.55(e) Programs for Reporting Defects and Noncompliance
  - IP 43004 Inspection of Commercial-Grade Dedication Programs
  - IP 38703 Commercial Grade Dedication
- Assure previous Inspection Nonconformances and Violations have been addressed and that corrective actions are firmly in place.

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- Activities During the conduct of the Audit / Survey / Inspection:
  - Have Top Level Management present for the Entrance and Exit meetings.
  - Assign Escorts to the Audit/ Inspection Teams, with instructions to take good notes and report immediately any issues raised.
  - It is important to distinguish issues raised as being opinions an Auditor / Inspector may have vs. a Finding or Nonconformance.
  - There is nothing wrong with defending a Quality Program that meets the requirements. Everyone has opinions as to how a requirement may be addressed.

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- When a Finding is identified, it is important to take immediate Corrective Action in accordance with your Quality Program.
  - Issue your Corrective Action before the Team formally communicates the Finding. Your immediate attention demonstrates good implementation of your Corrective Action system.

- At the conclusion of the Audit / Inspection make certain you understand any issues, no surprises in the Auditor's Report.

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- After the Survey / Audit / Inspection
  - Team Leader will file a formal report which identifies the results of the activity and any Findings or non conformances which need to be addressed.
  - The audited company should issue formal Corrective Actions in accordance with their QA Program.
  - Provide a response to the Findings in accordance with the time schedule described in the Team Leaders instructions.
  - Provide copies of documented objective evidence which demonstrates the corrective actions taken to resolve the Findings.
  - Maintain good records of the Survey / Audit / Inspection for future reference.

# NRC Workshop Presentation

## ASME Survey

- ASME focuses on compliance to ASME Section III NCA 4000 and NCA 3800.
- Emphasis on QA Program Manual and ASME Code Compliance
- Focus on Pressure Retaining Parts as addressed in the Code
- **Does not** look for compliance to 10CFR 50 Appendix B or 10 CFR Part 21
- **Does not** address Commercial Grade Dedication
- Little emphasis on Counterfeit and Fraudulent Material

## NUPIC Audit / NRC Inspection

- NUPIC / NRC focus on compliance to **ALL** Nuclear Industry Requirements
- Little or no emphasis on QA Manual unless found deficient
- Focus on all Safety Related Parts and Products
- Verify implementation to 10 CFR Appendix B and 10 CFR Part 21
- Verify implementation of Commercial Grade Dedication
- Verify implementation of Counterfeit and Fraudulent Material Programs

# NRC Workshop Presentation

## ASME Survey

- ASME Team sizes are usually 4 people
- ASME Survey lasts 3 days
  - Day 1 – Team Reviews QA Manual in Hotel
  - Day 2 – QA Manual Review with applicant and **Document Based** Implementation verification
  - Day 3 – QA Manual Completed and accepted, Implementation completion and Closing Meeting

## NUPIC Audit / NRC Inspection

- NUPIC / NRC Team sizes usually 5 – 8 people
- Audit / Inspections last 5 days
  - Day 1 Opening Meeting and begin **Performance Based** Audit / Inspection of Nuclear Activities.
  - Day 2 – 4 Audit / Inspection continues.
  - Day 5 – Conclude Audit /Inspection and conduct Close Out Meeting

# NRC Workshop Presentation

- ASME Survey Tips:
  - Be prepared to make QA Manual Revisions. Beware of Microsoft “Track Changes”. avoid it for a first time use during the Survey. Stick with what you are familiar with, so as to be able to make revisions that are meaningful and understandable and will print out easily.
- NUPIC Audit Tips:
  - Human Performance is becoming an issue with NUPIC. They are introducing the Human Performance concepts to manufactures and are expecting some implementation to bring about Continuous Improvement. The DOE offers free on line information:
  - http://www.hss.energy.gov/nuclearsafety/ns/techstds/standard/hdbk1028/doe-hdbk-1028-2009_volume1.pdf
  - http://www.hss.energy.gov/nuclearsafety/ns/techstds/standard/hdbk1028/doe-hdbk-1028-2009_volume2.pdf
- NRC Inspection Tips:
  - Pay close attention to the procedures which address Corrective Action Process, 10 CFR Part 21, Dedication of Commercial Grade Items, and Counterfeit and Fraudulent Material; as these are areas the NRC looks closely at during their Inspections.

NRC Workshop Presentation

# Questions ?

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