

THE VENDOR TIMES

NRC/NRO/DCIP Vendor Times **December 2015**

The Director's Cut

In 2015, the Nuclear Regulatory Commission (NRC) conducted routine, reactive, design verification and qualification testing inspections of over 34 vendors that provide parts and services to new construction and operating reactors. Inspection results identified that industry challenges continue with vendor performance and licensee oversight of the supply chain. The areas for improvement identified through the vendor inspection program include; 1) maintaining adequate design control, 2) implementation of commercial grade dedication process and 3) implementing an effective corrective action program. The inspection reports are publicly available on the NRC's Vendor Quality Assurance (QA) Inspection website at <http://www.nrc.gov/reactors/new-reactors/oversight/quality-assurance/vendor-insp.html>.

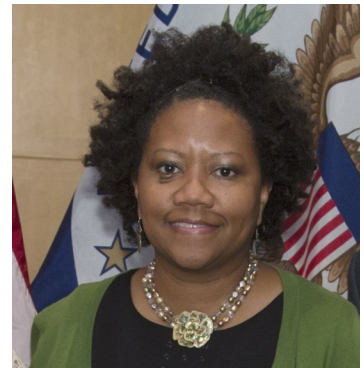
The nuclear industry's supply chain consists of many vendors which provide safety-related services and plant components to foreign and domestic customers. Some of the vendors making up the supply chain are located in the United States, but many are outside the United States. This global supply chain poses oversight challenges for the NRC. To address these challenges the NRC staff actively participates in multilateral interactions with international counterparts. An example of this effort is the Multinational Design Evaluation Program (MDEP). The NRC participates in MDEP meetings in order to enhance cooperation with the international community for the exchange of information on oversight of the domestic and foreign nuclear supply chain. In addition, the NRC vendor staff participated in six MDEP related vendor inspections.

The vendor inspection staff continues to communicate issues of importance with nuclear supply chain stakeholders. One method for discussing issues of importance with the stakeholders is through the Vendor Workshop which is scheduled for June 23, 2016 in St. Louis, MO. Vendor Workshop topics are dictated by issues of interest to stakeholders and vendor inspection activities.

The NRC continually monitors the nuclear industry's design, procurement, and manufacturing processes to ensure safety related goods and services meet the NRC's regulatory requirements. Licensees and vendors need to continue to be diligent in their emphasis on supplier oversight to ensure the supply chain continues to fulfil its vital role of ensuring the public's health and safety.



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Vendor Inspection Program Update

The Vendor Inspection Center of Expertise’s (VI COE’s) staff is committed to the NRC’s policy of openness, efficiency, and clarity with our internal and external stakeholders, by implementing the strategies of the vendor outreach program. These strategies include maintenance of the NRC’s vendor oversight public Web page; and hosting vendor oversight workshops on a biennial basis (next scheduled for June 2016)The VI COE also participates and presents topics of interest during internal and external stakeholder meetings, such as: the Nuclear Procurement Issues Committee, which is an organization performing audits of suppliers to NRC licensees; the Electric Power Research Institute’s joint utility task group on commercial grade dedication; 10 CFR Part 21 Rulemaking activities; and the Nuclear Energy Institute’s working group on 10 CFR Part 21 guidance document for evaluation and reporting.

To provide the greatest impact and value in support of operating reactors, the VI COE is improving communication and coordination with other NRC Offices and Regions to re-enforce existing programs and processes by: a) communicating the mission of the VI COE throughout the agency, b) providing support to the Regions and NRR, and c) identifying vendors for routine or reactive vendor inspections in support of operating reactors.



Inspection of Squib Valve Testing



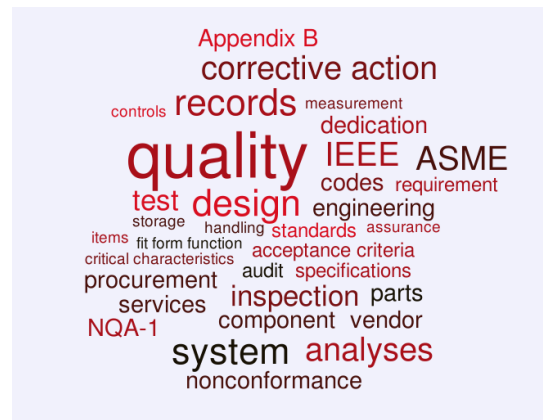
Inspection of Reactor Vessel Manufacturing



Inspection Team with Polar Crane

The VI COE has recently performed several inspections in support of the operating reactors and has provided valuable insights into potential vendor issues that can affect operating reactors. For example, Region III requested VI COE support to inspect a pump manufacturer as a result of a safety-related pump failure at Clinton Power Station.

By better supporting operating reactors, the VI COE will be able to increase efficiency and effectiveness in support of the agency’s strategic safety goal by using operating experience to inform vendor selection, proactively identifying, assessing, and resolving safety issues, increasing awareness of the VI COE, and lending its expertise to improve efficiency in carrying out regulatory activities.



2016 Workshop on Vendor Oversight

NRO's Division of Construction Inspection is planning the fifth Workshop on Vendor Oversight scheduled for Thursday, June 23, 2016, in St. Louis, MO. This workshop brings together members of the public, licensees, applicants, vendors, suppliers of basic components, and industry organizations. The NRC will provide information and training to the participants on specific topics related to issues identified by the staff during vendor inspections and other outreach activities. The workshop will begin at 8 a.m. and will continue to approximately 5:30 p.m. Potential topics include software guidance, 10 CFR Part 21 guidance, and commercial grade dedication. Any stakeholders with feedback related to the planning and coordination of the vendor oversight workshop or anyone who would like to suggest a topic or volunteer as a speaker for the workshop are encouraged to contact Andrea Keim at Andrea.Keim@nrc.gov



San Onofre Units 1, 2, and 3

Implementation of the San Onofre Nuclear Generating Station (SONGS) Lessons Learned in the Area of Vendor Oversight

A vendor oversight working group (VOWG) was established to identify and respond to the lessons learned following issuance of the first 10 CFR Part 52 Combined Operating Licenses (COLs) in 2012 and following the San Onofre steam generator tube degradation event. The VOWG was directed through its' charter to provide recommendations to the Office of New Reactors (NRO) management on potential enhancements to the NRC's vendor oversight process. The VOWG consisted of NRC staff from Region II, Region IV, the Office of Nuclear Reactor Regulation (NRR) and NRO. The VOWG reviewed the issues relating to the San Onofre steam generator tube degradation event and reviewed the VIP to provide recommendations on potential vendor oversight enhancements. The VOWG reviewed existing policy and practices for the NRC oversight of suppliers providing basic components and safety-related services to new plants under construction and the current fleet of operating reactors.

Based on its review, the VOWG is pursuing the following two actions related to vendor oversight involving enhancements to the existing VIP that reflect the lessons learned from the San Onofre steam generator tube degradation event:

1. The NRC staff will perform pilot design-aspect inspections at vendor facilities during the fabrication process for safety-related major plant modifications. The NRC staff will evaluate the results from the inspections to determine if such inspection activities are warranted on a continuing basis. The initial inspections should use existing inspection procedures (IPs), such as IP 37805, "Engineering Design Verification Inspections." Based on NRC inspectors' feedback, the existing procedures may need to be modified or new procedures developed using lessons learned from the pilot design-aspect vendor inspections.
2. In support of the above action, the NRC staff will develop and pilot screening and evaluation processes to determine if a plant change is a major plant modification, and whether such a modification should be subject to a vendor inspection. In coordination with NRR, the Regions, and NRO, and evaluating industry input and comments the NRC staff will develop:
 - identification guidelines and screening criteria to determine what constitutes a major plant modification (led by NRR with support from the Regions), and
 - evaluation/screening criteria to determine whether a major plant modification should be subject to a vendor inspection (led by NRR with support from the Regions, and NRO).

The NRC staff has completed the actions associated with the 2nd recommendation above and is in the process of developing a plan by which NRO's Vendor Inspection Center of Expertise staff will implement pilot design-aspect inspection. For any questions, please contact Yamir Diaz-Castillo from the Mechanical Vendor Inspection Branch in NRO at 301-415-2228 or email at Yamir.Diaz-Castillo@nrc.gov.

Technical Corner—Batteries

The NRC vendor staff perform inspections at vendor facilities to verify that manufacturing, testing, and qualification of safety-related items are performed in accordance with regulatory requirements contractually passed down by licensees. The NRC vendor staff recently conducted an inspection of a battery manufacturer. The NRC inspectors identified significant issues that could impact the ability of a battery to perform its safety-related function.

Direct current (DC) electrical systems provide highly reliable power to equipment required for safe shutdown of a nuclear power plant and to the loads that are essential for reactor operation. To supply this highly reliable power source, quality requirements must be incorporated in the initial battery design, manufacturing process, and the seismic and environmental qualification testing. Safety-related battery systems for nuclear power plants consist of cells connected in series, to attain a the required terminal voltage. Each battery cell consists of positive and negative plates separated by insulating material that are connected together and encased in a vented container.

Since batteries play a crucial role in providing reliable power, the NRC vendor inspectors focused their inspection on areas that may impact the ability of a battery to perform its safety-related function. The inspectors identified the following findings on a recent battery vendor inspection:

- **Contact between battery plates**
During the manufacturing process holes and misalignment in the insulating material resulted in inadequate separation of the positive and negative plates. Contact between the plates can adversely affect the operability of the battery by reducing cell voltage and charge capacity.
- **Cracking in the jars**
Cracking in the jars resulted in the battery losing its electrolyte which can interrupt the circuit path in the battery string. This interruption in circuit path may limit a battery's ability to discharge when required.

It is important that safety-related batteries perform as designed in DC power systems; so important in fact that there is an NRC regulation specifically addressing battery requirements. 10 CFR 50.63(a)(2) requires that station batteries provide sufficient capacity and capability for safety-related components to ensure that the core is cooled and appropriate containment integrity is maintained in the event of a station blackout.

Would you like to be added to the newsletter distribution? Or suggest topics?

We welcome useful and informative feedback on the content of this newsletter.

Please contact Andrea Keim, Quality Assurance Vendor Inspection Branch, by telephone at 301-415-1671 or by email at Andrea.Keim@nrc.gov.



Battery Rack at Nuclear Plant

Regulatory Issue Summary 2015-08

The NRC issued Regulatory Issue Summary (RIS) 2015-08, "Oversight of Counterfeit, Fraudulent, and Suspect Items in the Nuclear Industry," on June 24, 2015. The RIS was issued to heighten awareness of the existing NRC regulations and how they apply to counterfeit, fraudulent and suspect items (CFSI) within the scope of NRC's regulatory jurisdiction. The RIS provides guidance and highlights regulations to prevent CFSI from entering the nuclear supply chain, prevent possible installation or use of CFSI at a nuclear facility, and raise awareness of the potential for CFSI to be used in the manufacture, maintenance, or repair of items.

More information on CFSI is available at <http://www.nrc.gov/about-nrc/cfsi/guidance.html>

