

## WM2017 Conference Panel Report

### PANEL SESSION 58: NNSA Complex Wide Infrastructure Challenges & Lessons Learned

**Co-Chairs:** **Deborah Couchman-Griswald**, *NNSA*  
**Shannon Farrell**, *Westinghouse Government Services*

**Panel Reporter:** **Shannon Farrell**, *Westinghouse Government Services*

#### **Panelists:**

1. **James McConnell**, *Associate Administrator for Safety Infrastructure & Operations, NNSA*
2. **Ken Harrawood**, *Senior Director, Consolidated Nuclear Security/Y-12*
3. **Mark Costella**, *Legacy Facility Program Manager, Lawrence Livermore National Laboratory*

There were approximately 40 people in attendance during the Session.

#### **Summary of Presentations**

**Mr. McConnell** presented on the NNSA Infrastructure Challenges. The NNSA is a vast and complex enterprise spanning approximately 2,000 square miles. The NNSA enables multiple programs, including Nonproliferation, Emergency Response, Naval Reactors, Defense Programs; Inter-agency and Other DOE Programs. The 3 major infrastructure challenges are: 1) the NNSA infrastructure is too big, old and brittle, 2) Failures are increasing in frequency and unpredictability, and 3) Infrastructure risks become safety and program risks. The biggest infrastructure challenge for NNSA is if a safety or security system fails. NNSA is managing the risk of the excess facilities through 4 infrastructure management tools: 1) Enterprise Risk Management (ERM), 2) Mission Dependency Index (MDI), 3) BUILDER, 4) G2, and 5) Master Asset Plan (MAP). NNSA is improving investment decisions through a Program Management Plan, Enterprise Risk Management Plan, Integrated Priorities List, and Performance Metrics. NNSA has continued and plans to continue to increase their investment from \$400M in FY2015 to \$700M in FY2021. These investments include: Maintenance, Recapitalization and Construction. In summary, NNSA is making progress by using new data-driven, risk informed management tools, and increasing Maintenance/Recapitalization funding.

**Mr. Costello** presented on the Challenges, Approaches and Achievements in evolving Lawrence Livermore National Laboratory's (LLNL) Facility Portfolio. LLNL has established a focused approach to facility disposition planning and stewardship. LLNL is evolving to meet existing and emerging needs. LLNL has an institutionally managed facilities program that was established to manage LLNL's past mission facilities/ legacies at the lowest cost while mitigating risk and advocating for final disposition. Alongside NNSA, LLNL is developing new tools for the NNSA enterprise. Those tools include: BUILDER, Mission Dependency Index (MDI), NNSA Asset Management Program (AMP), and the Deep Dive MAP Infrastructure Review. LLNL infrastructure initiatives are included in DOE's Best Practices Infrastructure. As part of the Risk Reduction initiative, LLNL continues to: reduce the threat presented by legacy process contamination, assures safety systems are maintained, assures the facility envelope is maintained and removes facilities.

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In summary, LLNL's management approach for high risk/high cost projects include: 1) defining the project with the total end-state in mind, 2) identifying the strategies (i.e. data capture, characterization, risk reduction, etc.), and 3) identifying the benefits (resource leveraging, establishing expectations and deliverables, etc).

**Mr. Harrawood** briefly described the Y-12 site in Oak Ridge, TN and the Pantex site in Amarillo, TX. He outlined the 3 Key Dispositioned Projects completed in FY2016: 1) Disposition Program provided ongoing funding for the electrical upgrade in Beta-4 and eliminated the need for steam to maintain freeze protection; 2) Congressional plus-ups for deferred maintenance of high risk excess facilities (80% of funding directed to Y-12 for roof repairs); 3) Continued de-inventory of Building 9206 (6.8 kilograms removed in FY2016). Mr. Harrawood outlined the work planned for 2017 & 2018, including a 343,000 ft<sup>2</sup> Administration Support complex at Pantex, electrical upgrades, replacement of criticality alarms, and a building a new High Explosive Processing Facility (HEPF). In summary, **Mr. Harrawood** discussed the key lessons learned for facilities/processes that are 50-75 years old, including: 1) High Fidelity Planning is critical, 2) Like-for-Like replacements are often not available, and 3) utilities often fail without warning.

Questions from the Audience included:

Why does NNSA have to fix facilities, if EM plans to tear those facilities down? EM expects NNSA to fix facilities to give EM a safe environment to work in.