



**AREVA Richland, WA Fuel Manufacturing
Operational Center of Excellence**

Licensee Performance Review

April 26, 2016

BUSINESS GROUP





Agenda

- ▶ **AREVA Richland Site Overview**
- ▶ **Components of our Continuous Improvement process**
- ▶ **Site Safety – Achievements/Improvements**
- ▶ **Summary / Conclusion**

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AREVA Horn Rapids Road (HRR) Site

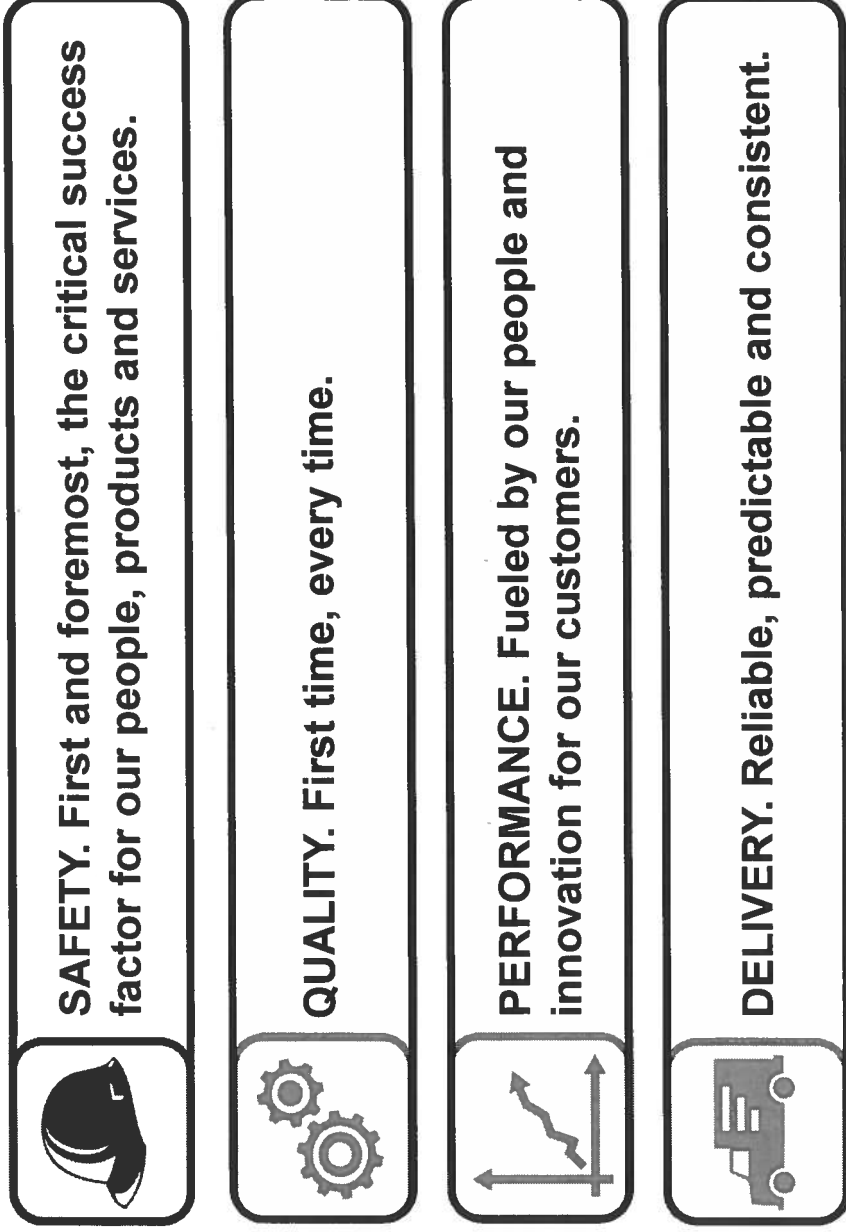
- ▶ **All AREVA U.S. Fuel manufacturing activities are conducted at the Richland HRR Facility**
 - ◆ UF6 conversion through bundle assembly, serving PWR and BWR fuel markets in the U.S., Japan and Taiwan
 - ◆ Fuel fabricated at the Richland facility produces approximately 5 percent of the utility-generated electricity in the U.S.
 - ◆ Approximately 55,000 fuel bundles shipped from the Richland facility since inception in 1970.
 - ◆ AREVA received the first 40-year Nuclear Regulatory Commission (NRC) Part 70 license renewal in 2009

Richland Site is AREVA's Center of Excellence for Fuel Manufacturing Activities in the U S

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AREVA Pillars Of Operational Excellence

OPERATIONAL EXCELLENCE



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Learning Organization

► Components of our Continuous Improvement

Process:



► Continuous Improvement: Lean Six Sigma

- ◆ Based on Lean Philosophy : right the first time, every time!
- ◆ Application of the Lean Six Sigma methodology

► Problem identification and resolution : **WEBCAP**



- ◆ Continuously lowering reporting threshold
- ◆ Trending and actions on low impact events
- ◆ Rigorous problem analysis and solving : RCA, ACA, PACTS

► Human Performance



- ◆ INPO tools applied to reduce frequency and severity of errors
- ◆ Observation program used in the field: recognize good behaviors and correct bad ones
- ◆ Positive Reinforcement

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Site Safety Achievements/Improvements

- ▶ **Radiological & Environmental Controls**
 - ◆ In 45 years of operation, no plant employee exposed over NRC exposure limits.
 - ◆ ALARA program resulting in a Collective Total Effective Dose Equivalent for 2015 lowest in 22 years.
 - ◆ Radio Frequency Identification (RFID) technology being deployed to track movement of personnel and monitoring of internal dose (ECD: 2017).
 - ◆ Continued pursuit of environmental excellence and continuous improvement via ISO 14001 environmental management system (EMS). ISO 14001 certified since December 2005.
 - ◆ Major recycling/re-use activities involving NRC-licensed and support processes (hydrofluoric acid, ammonium hydroxide, used oil, used machine coolants, paper/ cardboard, scrap metals, wood, and batteries).

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Site Safety

Achievements/Improvements

- ◆ Onsite inventory of legacy mixed waste drums at historic low; efforts under way to disposition remaining few.
- ◆ Continued improvement in groundwater quality since removal/remediation of surface impoundment system. All six down-gradient monitoring wells consistently below Federal primary drinking water limit for fluorides (4 ppm); last sampling (Nov 2015) shows only one well above Federal uranium drinking water limit (33 ppb vs. 30 ppb limit).
- ◆ Approximately 450 Class 7 radioactive material shipments completed over CYs 2014/2015 without incident.
- ◆ Continued usage of AREVA affiliate AREVA TN for expert transportation services (logistics, container fleet management, carrier management, transportation security, packaging licensing, etc.).



Site Safety

Achievements/Improvements

- ▶ **Safety Operations**
 - ◆ Restarted Modular Extraction/Recovery Facility (MERF) in February 2015. Providing safe and effective uranium recovery from incinerator ash.
 - ◆ Completed disassembly and rod downloading of 108 contaminated San Onofre fuel assemblies while meeting safety and dose-control goals.
 - ◆ Multi-year site-wide fire alarm system upgrades nearly complete (ECD: 2017)
 - ◆ Criticality accident alarm system being replaced (ECD: 2017)



Site Safety

Achievements/Improvements

- ▶ **Facility Support**
 - ◆ EHS&L Audit/Inspection schedule lists 80 different audits/inspections/assessments; only 32 specifically NRC-required. Based on required frequencies, over 150 actual audit/inspection activities occur per year.
 - ◆ Completed human error prevention training lab, training over 400 personnel in error prevention tools.
 - ◆ Criticality safety training now includes at-the-workstation interactive discussions between production and maintenance personnel and criticality safety staff.
 - ◆ Close to 140 plant projects completed over 2014-2015, approximately one-third of which supported safety improvements.
 - ◆ Improved resource utilization/prioritization for maintenance/surveillance activities via organization of plant into physical areas represented by planning teams.



Summary / Conclusion

- ▶ **The Management team at AREVA's HRR site is:**
 - ◆ Committed to conduct business in a manner that drives continuous improvement in Environmental, Health, and Safety performance
 - ◆ Committed to complying with our NRC and state approved operating licenses, and all applicable regulations
 - ◆ Committed to continuously improve, engaging the entire workforce on this path

In line with AREVA values and commitments, the Management at AREVA HRR will continue to place Safety and Regulatory Compliance as the No.1 priority

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