



Richland, Wash. Fuel Manufacturing Operational Center of Excellence

License Performance Review

March 21, 2018

Agenda



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

Framatome Horn Rapids Road (HRR) Site

- **All Framatome U.S. Fuel manufacturing activities are conducted at the Richland Horn Rapids Road (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
 - ◆ Framatome has a 40-year Nuclear Regulatory Commission (NRC) Part 70. License renewed in 2009



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

Framatome Pillars Of Operational Excellence

OPERATIONAL EXCELLENCE



SAFETY. First and foremost, the critical success factor for our people, products and services.



QUALITY. First time, every time.



PERFORMANCE. Fueled by our people and innovation for our customers.



DELIVERY. Reliable, predictable and consistent.

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
- ◆ Completed human error prevention training lab, training over 400 personnel in error prevention tools.
- ◆ Positive reinforcement

Site Safety Achievements/Improvements

■ Radiological & Environmental Controls

- ◆ In nearly 50 years of operation, no plant employee has been exposed over NRC exposure limits.
- ◆ ALARA program resulted in 2017 Collective Total Effective Dose Equivalent that was lowest in 24 years.
- ◆ Radio Frequency Identification (RFID) technology deployed in Dry Conversion and Specialty Fuels facilities to track movement of personnel and monitoring of internal dose.
- ◆ Continued pursuit of environmental excellence through ongoing improvement via ISO 14001 environmental management system. 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).

Site Safety Achievements/Improvements

- ◆ All legacy mixed waste drums have been disposed.
- ◆ Approximately 500 Class 7 radioactive material shipments completed over CYs 2016/2017 without incident.
- ◆ Continued usage of TN Americas for expert transportation services (logistics, container fleet management, carrier management, transportation security, packaging licensing, etc.).

Site Safety Achievements/Improvements

■ Safety Operations

- ◆ Multi-year site-wide fire alarm system upgrades have been completed and all areas are now active.
- ◆ Criticality accident alarm system has been replaced and will be put online in early 2018.
- ◆ Construction is in progress to replace an aging solvent extraction facility. Completion scheduled for 2020.
- ◆ ISA Database upgrade was completed to prevent the software supporting the database from becoming obsolete. The update also added some automation to reduce human error and manpower time spent maintaining the database.

Site Safety Achievements/Improvements

■ Facility Support

- ◆ EHS&L Audit/Inspection schedule lists 85 different audits/inspections/assessments; only 32 specifically NRC-required. Based on required frequencies, over 150 actual audit/inspection activities occur per year.
- ◆ Criticality safety training continues to include at-the-workstation interactive discussions between production and maintenance personnel and criticality safety staff.
- ◆ Close to 130 plant projects completed over 2016-2017, approximately one-third of which supported safety improvements.

Summary / Conclusion

- **The Framatome management team at HRR 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 our values and commitments, Framatome management at HRR will continue to place Safety and Regulatory Compliance as the No.1 priority