



United States Nuclear Regulatory Commission

*Protecting People and the Environment*

# Operating Experience with UF<sub>6</sub> Cylinders and UX-30 Overpacks

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Division of Fuel Facility Inspection

# References

- IN 1989-78 – Failure of Packing Nuts on One-Inch Uranium Hexafluoride Cylinder Valves
- IN 1992-58 – Uranium Hexafluoride Cylinders - Deviations in Coupling Welds
- IN 1997-020 – Identification of Certain Uranium Hexafluoride Cylinders that Do Not Comply With ANSI N14.1 Fabrication Standards
- IN1997-24 – Failure of Packing Nuts on One-inch Uranium Hexafluoride Cylinder Valves
- IN 2002-031 – Potentially Defective UF<sub>6</sub> Cylinder Valves (1-Inch)
- Bulletin 2003-03 – Potentially Defective 1-inch Valves for Uranium Hexafluoride Cylinders
- RIS 2004-18 – NRC Regulatory Issue Summary 2004-18: Expiration Date for 10 CFR Part 71 Quality Assurance Program Approva

# Items found during inspections and a review of 71.95 reports

- Non-conforming cylinders
- Non-compliant valves
- Non-conforming overpacks
- Procedural implementation and drawing verification

# Requirement

- Condition 6 of the Certificate of Compliance for
- transportation package USA/9196/B(U)F-96
- aka UX-30 with 30B/C cylinder

# Non-conforming cylinders

- Non-U/R Stamp Cylinders
- Incomplete Date of Manufacture Stamp

# Non-compliant valves

- Leaking packing nut
- Thread engagement
- Tinning loose/coming off
- Misaligned valves
- Hunt valves

# Non-conforming overpacks

- Lifting lugs not disabled
- Radiation symbol not visible
- Ball-lock Pins not engaged
- Tamper Seals Not Installed

# Safety Analysis Report Procedural Implementation and Drawing Verification Issues



# Weld Inspections

- Weld acceptance criteria made in Revision 25 of the Certificate of
- Compliance Number 9196

# Package Inspections

- Not documenting package inspections

# Annual Re-weigh

- Licensee did not fully understand why certain overpacks were
- weighing lighter than the weight stamped on the data plate

# Valve Thread Engagement



# Procedures



# Package Inspection



# Verification of package weights

# Verification of package drawings





**Reporting in accordance with  
10 CFR 71.95**