



**Dry Storage
Information Forum**

LESSONS LEARNED FROM NRC INSPECTION AT ISFSIs

Dr. William B. Gloersen

Senior Fuel Facilities Inspector

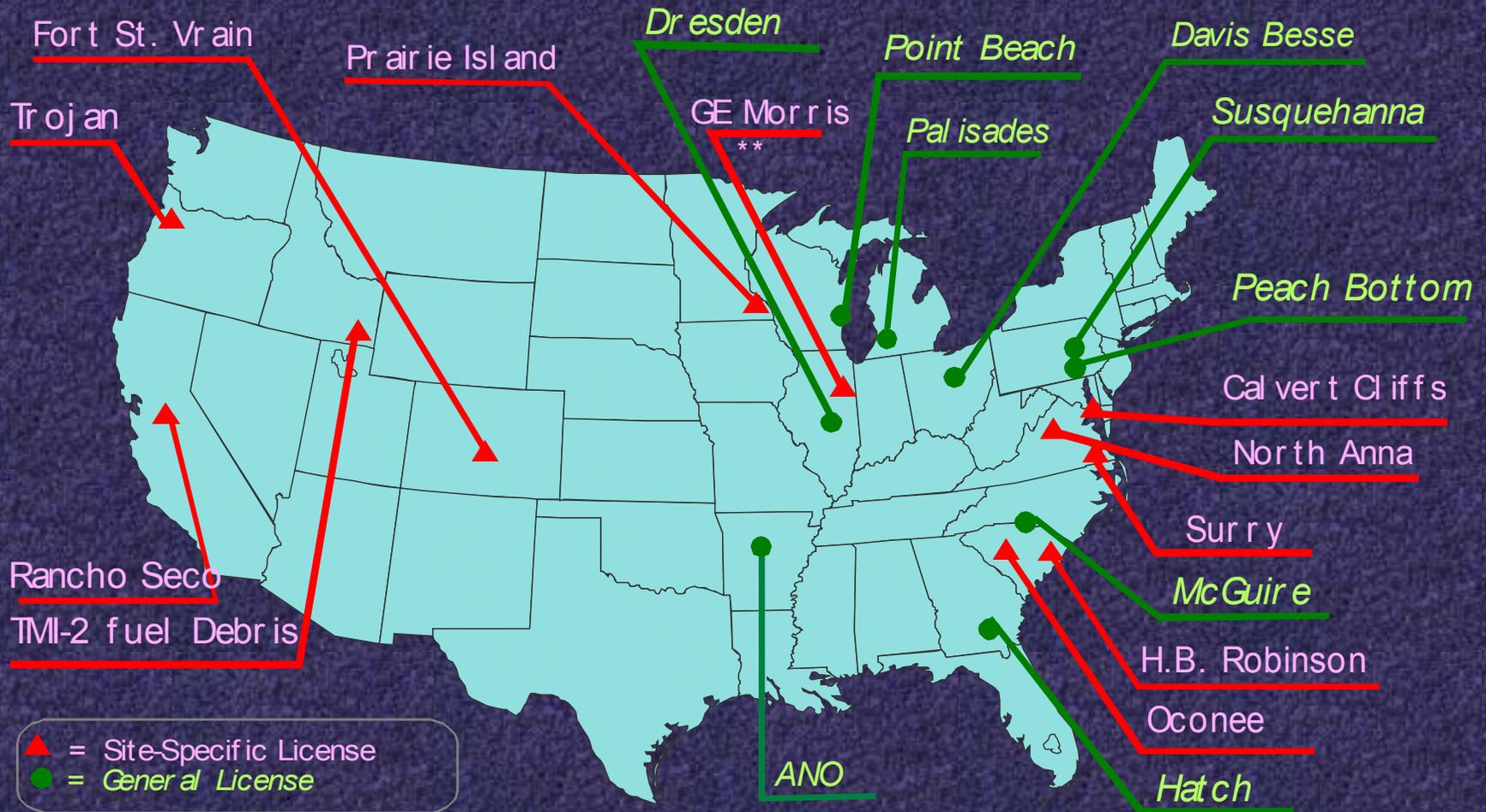
U. S. Nuclear Regulatory Commission

Region II – Atlanta, Georgia

May 15 – 16, 2002



Operating Spent Fuel Storage Sites (ISFSI)

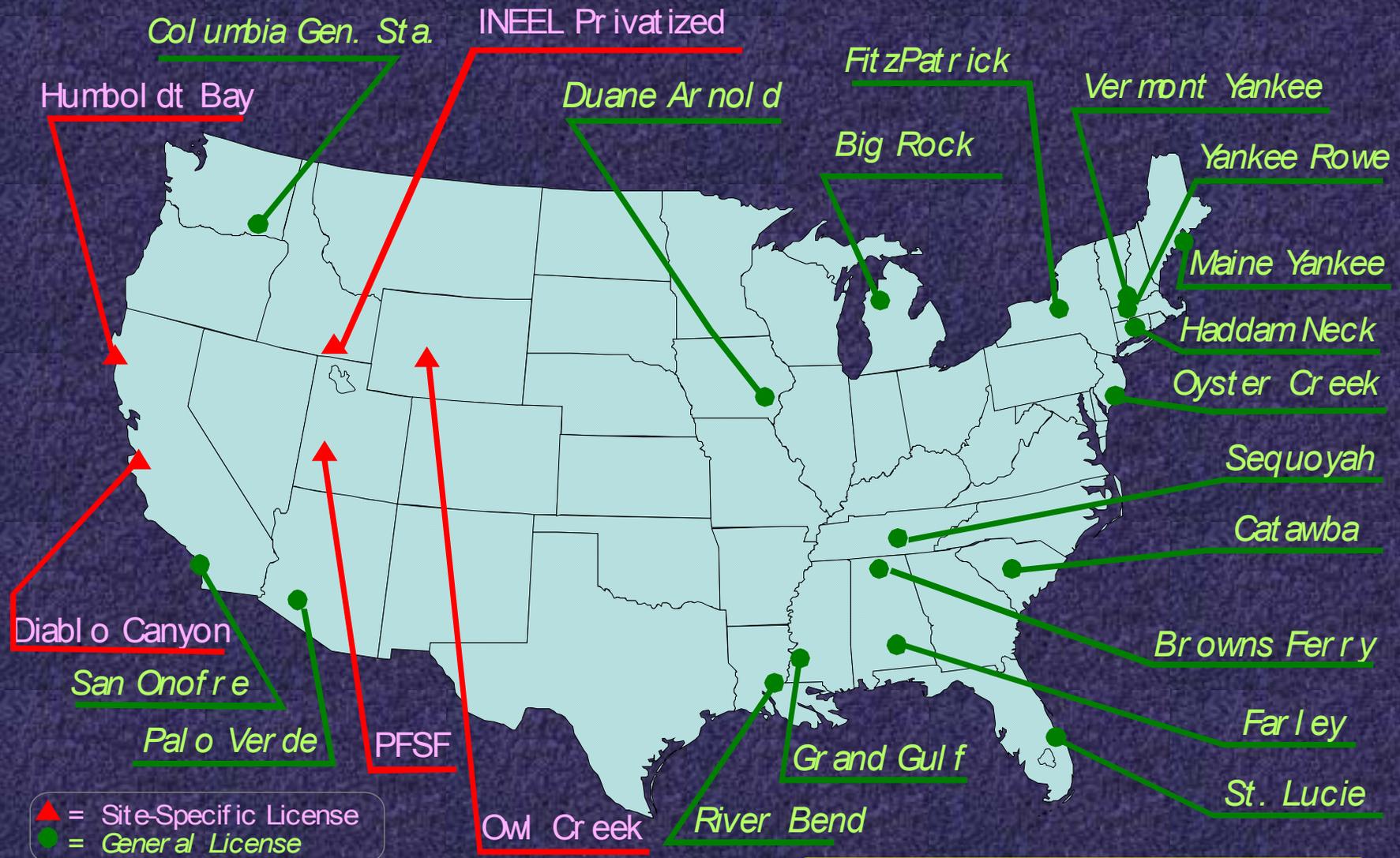


** GE Morris uses wet storage



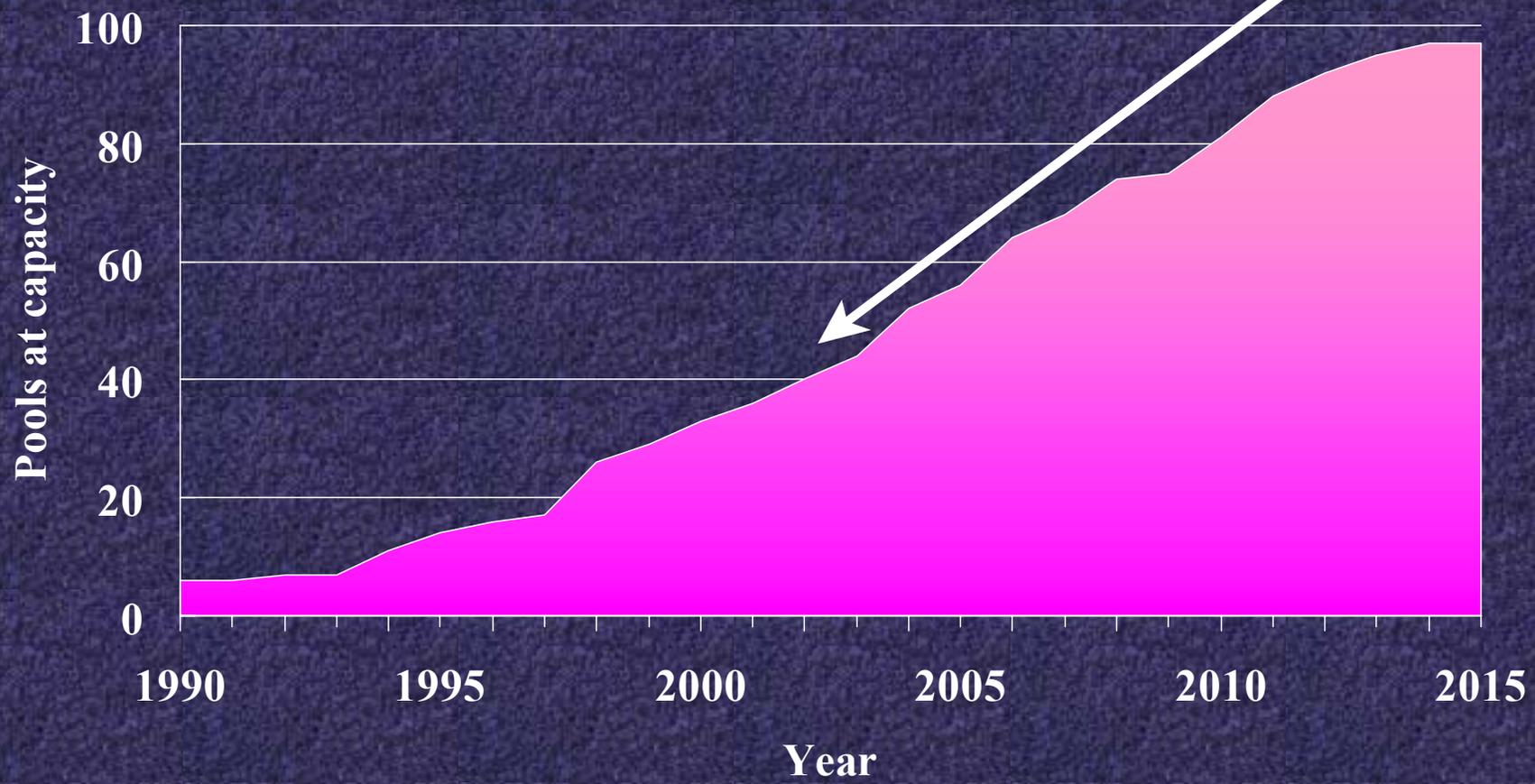
Information as of March 21, 2002

Potential Near-Term New ISFSI Sites



Projected Loss of Full Core Reserve

Where We Are Today



■ Pools at capacity

Sources: Energy Resources International & DOE/RW0431-Rev.1

DISCUSSION TOPICS

- Plant Specific Experiences/Issues
- Lessons Learned

MAJOR ISSUES

- 10 CFR 72.212(b) Evaluations
- Cask Issues
- Crane and Rigging Issues
- Cask Transporter Problems
- Other Issues

10 CFR 72.212(b) EVALUATIONS

- Evaluations in draft at the time of NRC Dry Run
- 10 CFR 72.212(b) commitments not implemented in procedures
- Common problems with evaluations
 - Fire hazards analysis
 - Dose assessments

CASK ISSUES

- Loose/Leaking Pressure Switches
- Loose Lid Bolts
 - Lower than expected breakaway torques identified
 - Casks found with several hand tight bolts



CASK ISSUES (continued)

- Corrosion of outer metallic lid seals
 - Through wall leaks on secondary seal due to galvanic corrosion
 - No leaks on primary seal
 - Metallic spray not fully covering lid surface
- Water intrusion via Conax connectors on protective cover



CASK ISSUES (continued)

- Vent and Drain Port Cap Problems
 - Vendor procedure required use of thread lubricant while the facility procedure did not



CASK ISSUES (continued)

- Lid to Shell Weld Failed Liquid Penetrant Examination
- Transfer Cask Top Radiation Shield Ring



CRANE AND RIGGING ISSUES

- Heavy Loads
 - Crane/Building Qualifications
 - Crane Qualification Records
- Load Cell Failure
- Use of Kevlar Slings for Rigging Heavy Loads
- Water in Cask Yoke System



CASK TRANSPORT/CRAWLER PROBLEMS

- Crawler Support Plate Crack
- Transporter Maneuvering Problems



OTHER AREAS

- Pad Issues
- Unapproved Fuel Loading Issues
- Improper Seating of Fuel Assemblies
- Foreign Material Control Issues



LESSONS LEARNED

- Share Industry Experiences
 - Stuck Vent and Drain Port Caps
 - Cask Re-Flood Experience
- Operational Readiness Review Teams
- Realistic Schedules
- Communicate with the NRC Host Region



LESSONS LEARNED (Continued)

- Verify and Validate Procedures
- Maintain Adequate Margin of Safety
- Rigging Inspection, Maintenance, and Training
- 10 CFR 72.212(b) Evaluations



LESSONS LEARNED (Continued)

- Stop Work Authority
- Questioning Attitude by Workers
- Strong QA Oversight of Vendors & Fabricators
- Detailed Mockup & Dry Runs



RISKS RELATED TO ISFSI OPERATIONS

- Fuel Handling
- Heavy Loads
 - crane failure
 - load path
 - wear & tear



CONCLUSION



- Dry cask storage activities continue to bring up new issues
- Problems range over a number of disciplines
- Senior management involvement and strong QA implementation have a direct impact on the success of the project