

**RIC 2006**

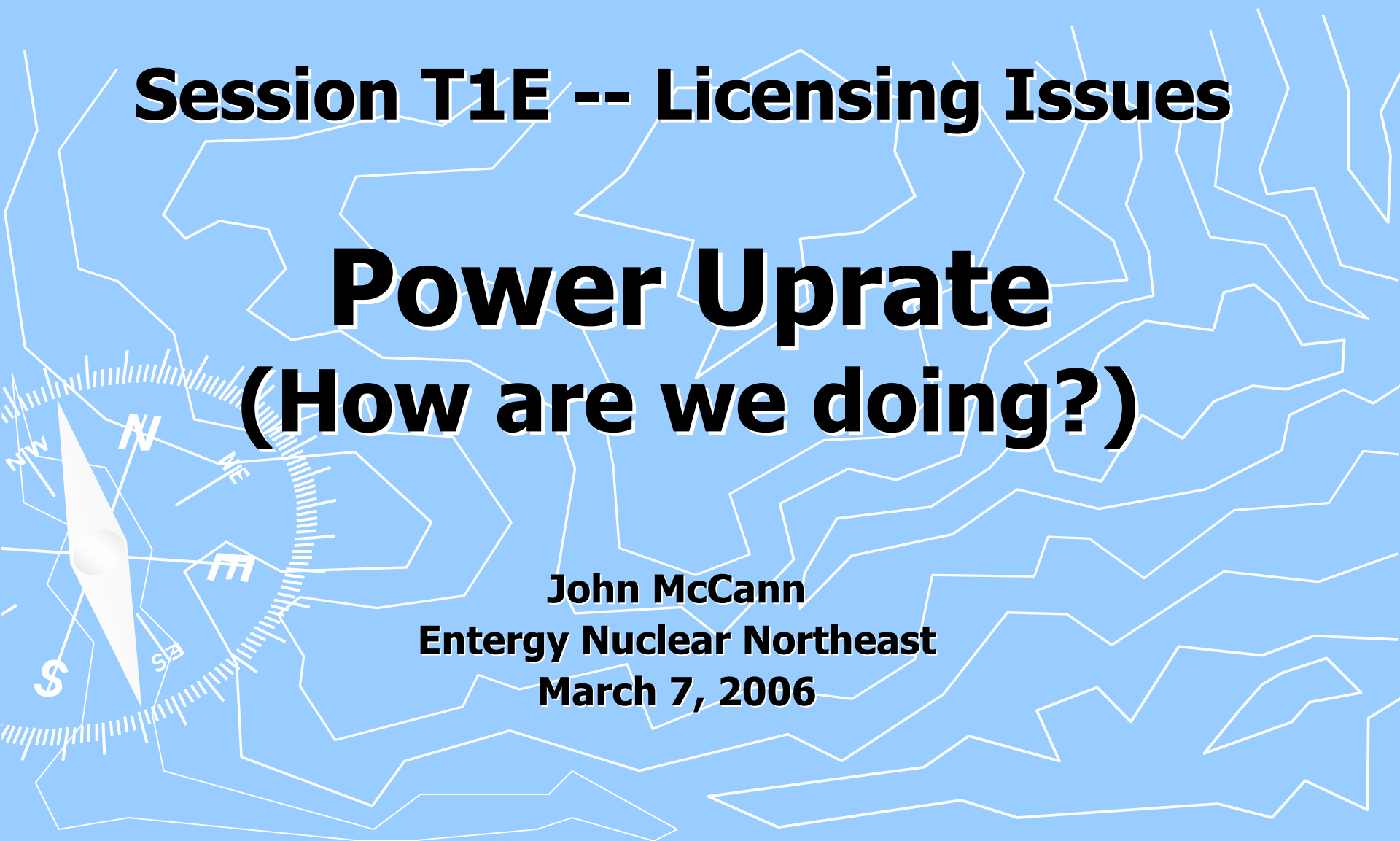
**Session T1E -- Licensing Issues**

**Power Uprate  
(How are we doing?)**

**John McCann**

**Entergy Nuclear Northeast**

**March 7, 2006**



# Upgrades in the “Big Picture”

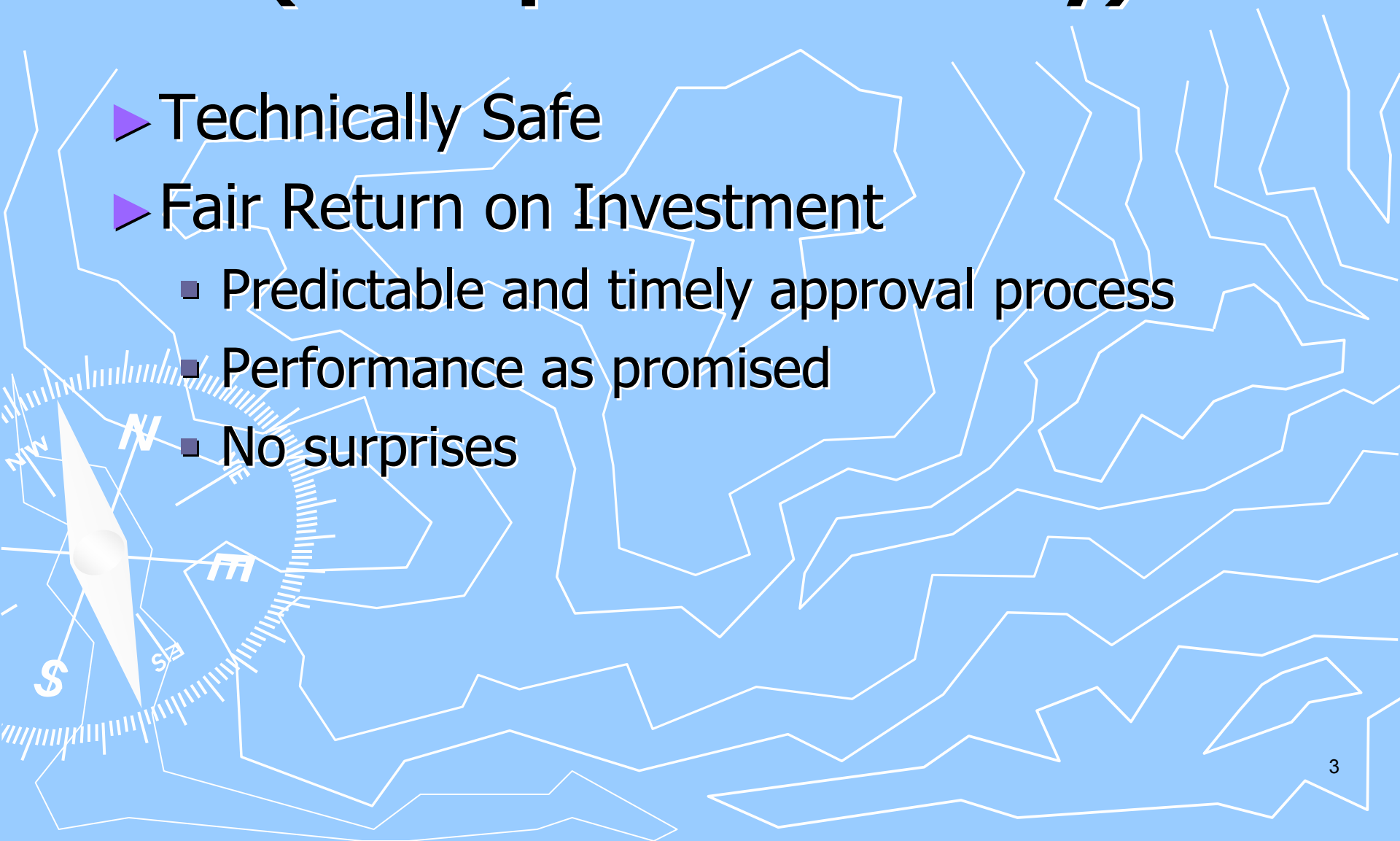
## ► More Nuclear Means:

- Upgrades
- License Extension
- New Construction



# The “Go Forward” Test (Perception is Reality)

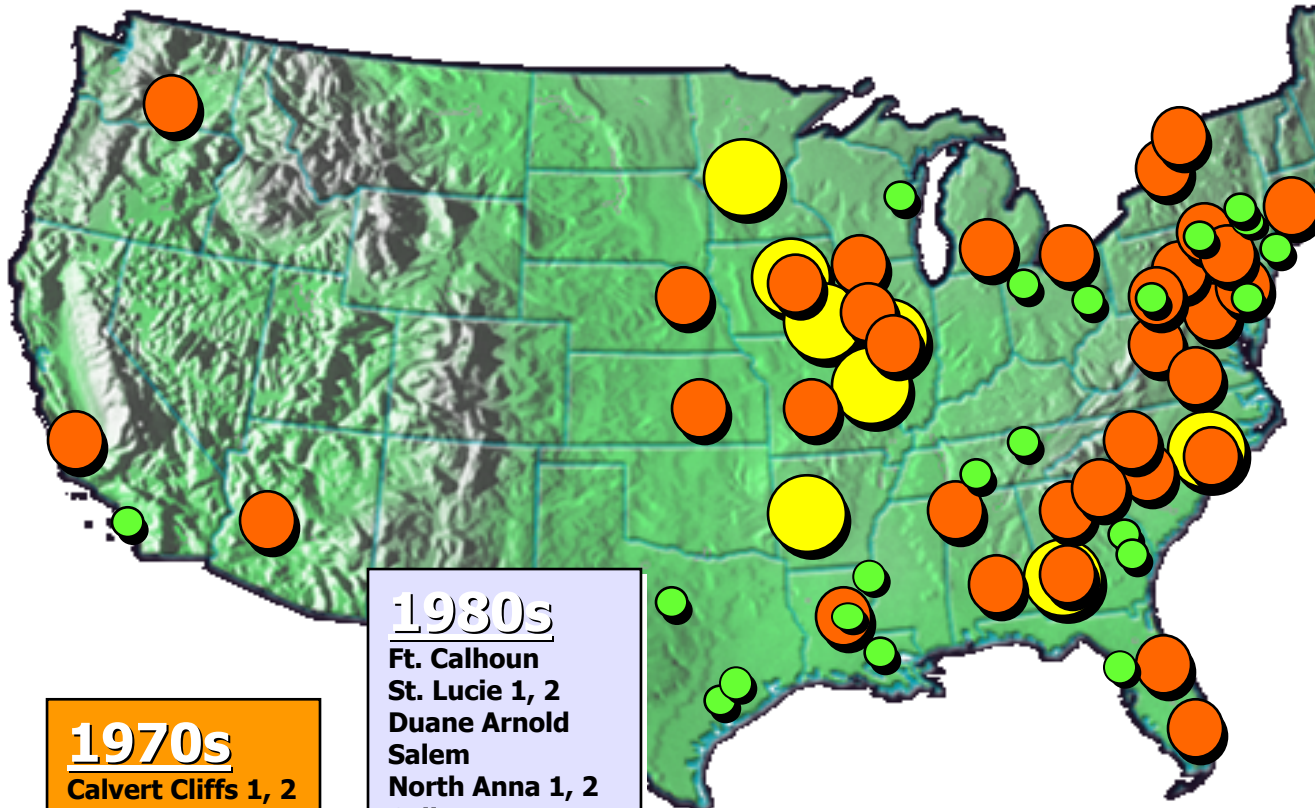
- ▶ Technically Safe
- ▶ Fair Return on Investment
  - Predictable and timely approval process
  - Performance as promised
  - No surprises



# We're Doing Pretty Well

- ▶ 4,492.7 MWe of added nuclear capacity through all Power Uprates as of February 15, 2006.
- ▶ BUT still plenty of room for improvement
- ▶ Some surprises

# The History of Uprates in the USA



**1970s**  
 Calvert Cliffs 1, 2  
 Robinson  
 Millstone 2

**1980s**  
 Ft. Calhoun  
 St. Lucie 1, 2  
 Duane Arnold  
 Salem  
 North Anna 1, 2  
 Callaway  
 TMI-1

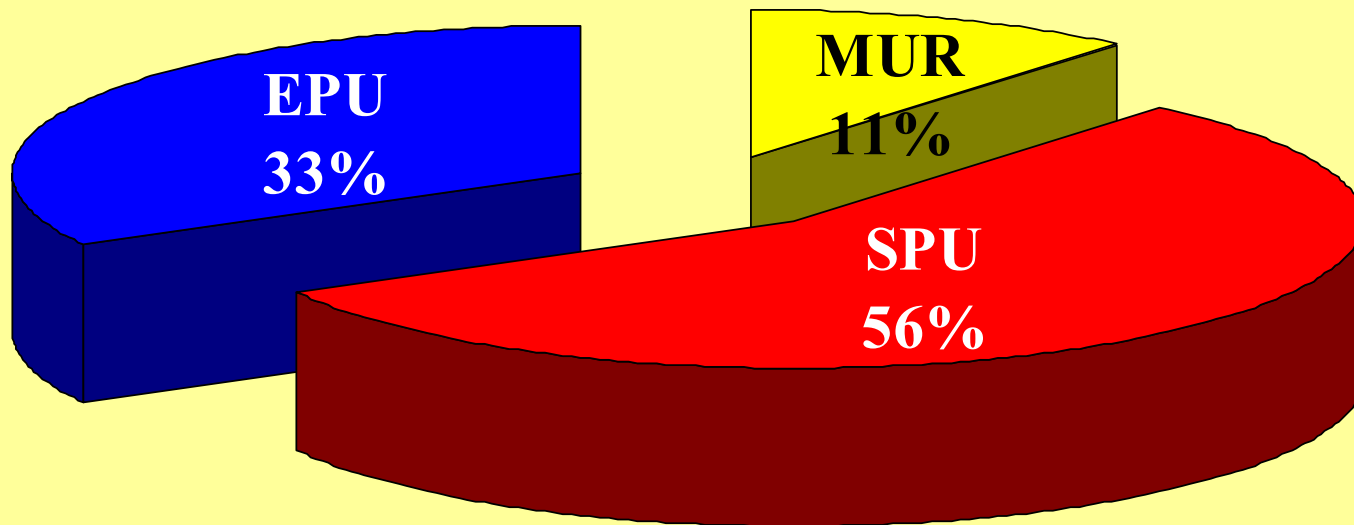
**1990s**  
 Fermi 2  
 Wolf Creek  
 Peach Bottom 2, 3  
 WNP2  
 Hatch 1, 2  
 Summer  
 Turkey Point 3, 4  
 Brunswick 1, 2  
 Browns Ferry 2, 3  
 Monticello  
 Vogtle 1, 2  
 Susquehanna 1,2  
 Limerick 1, 2  
 NMP2  
 Surry 1, 2  
 Comanche Peak 2  
 Palo Verde 1, 2, 3  
 Fitzpatrick  
 Farley 1, 2

**2000s**  
 River Bend  
 Watts Bar  
 Braidwood 1, 2  
 Susquehanna 1, 2  
 Hope Creek  
 Harris  
 Duane Arnold  
 Quad Cities 1, 2  
 STP 1, 2  
 Clinton  
 Davis Besse  
 Palo Verde 1,2, 3  
 Perry  
 Robinson  
 Indian Point 2, 3  
 Crystal River 3  
 River Bend  
 Hatch 1&2  
 DC Cook  
 Diablo Canyon 1  
 Byron 1, 2  
 Salem 1, 2  
 San Onofre 2, 3  
 Beaver Valley 1, 2  
 Comanche Peak 1,2  
 Dresden 2, 3  
 Waterford 3  
 Brunswick 1,2  
 ANO-2  
 Sequoya 1, 2  
 La Salle 1, 2  
 Grand Gulf  
 Peach Bottom 2, 3  
 Point Beach 1, 2  
 DC Cook 1  
 Kewaunee  
 Pilgrim  
 Seabrook

SOURCE: US NRC  
 Dual Units shown only once

# The History of Uprates in the USA

## NRC-Approved Uprates - MWe by Type

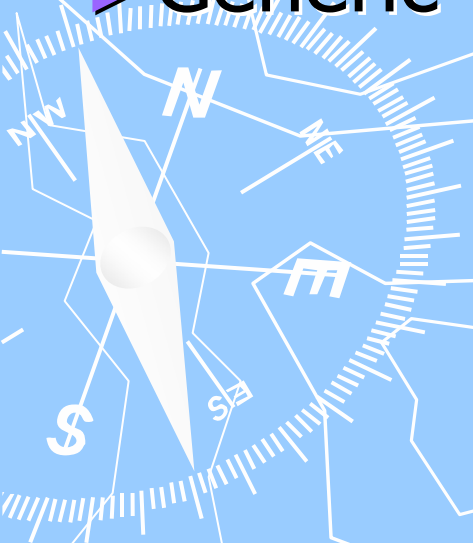


# The Process

- ▶ Measurement Uncertainty Recapture
  - RIS-2002-03
- ▶ Stretch Power Uprate
  - Precedent and OE
- ▶ Extended Power Uprate
  - RS-001
- ▶ Check the Website!

# Uprate Issues

- ▶ Overpower
- ▶ Flow induced vibration
- ▶ Steam Dryers
- ▶ Generic “hot topics”





# Factors for Success

- ▶ Previous Experience Awareness
- ▶ Engineering Quality
- ▶ Innovation
- ▶ Communications
- ▶ Focus



# Questions/Comments?

