

# Chemical Engineering 612

## *Reactor Design and Analysis*

### Lecture 24 Licensing



# Spiritual Thought

“The Savior invites us to use His power to be as *salt, leaven,* and *light.*”

Susan H. Porter



# Licensing Paths

- Current
  - 10 CFR.50
  - 10 CFR.52
- Pending
  - 10 CFR.53
  - LMP (Southern Company/NEI)



# Licensing modernization Project (LMP)

- Southern Company + NEI
- Risk Informed and Performance Based
- Reactor Technology-Inclusive
- Complete List of LBE candidates
- Reproducible
- Identify design specific safety challenges
- Fits current regulation requirements

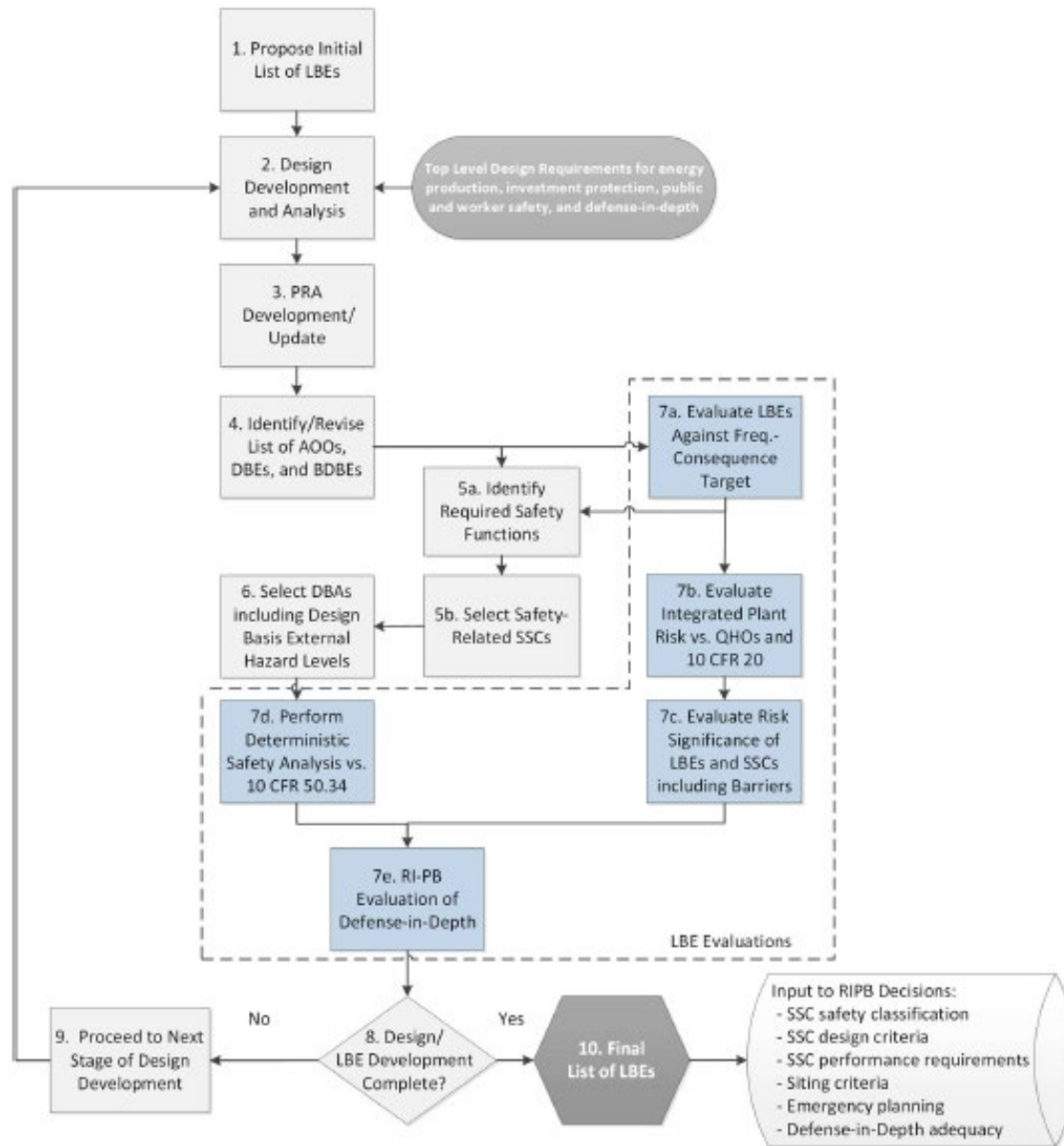


# Licensing Basis Events

- Complete set of events setting foundation for safety case of a reactor
- Found initially using Process Hazard Analysis
- Use PRA to evaluate frequency and severity of LBE consequences
- Categorize LBE's (severity vs. frequency)
- Iterate to add/modify LBE's
- Create design features to regulate consequences



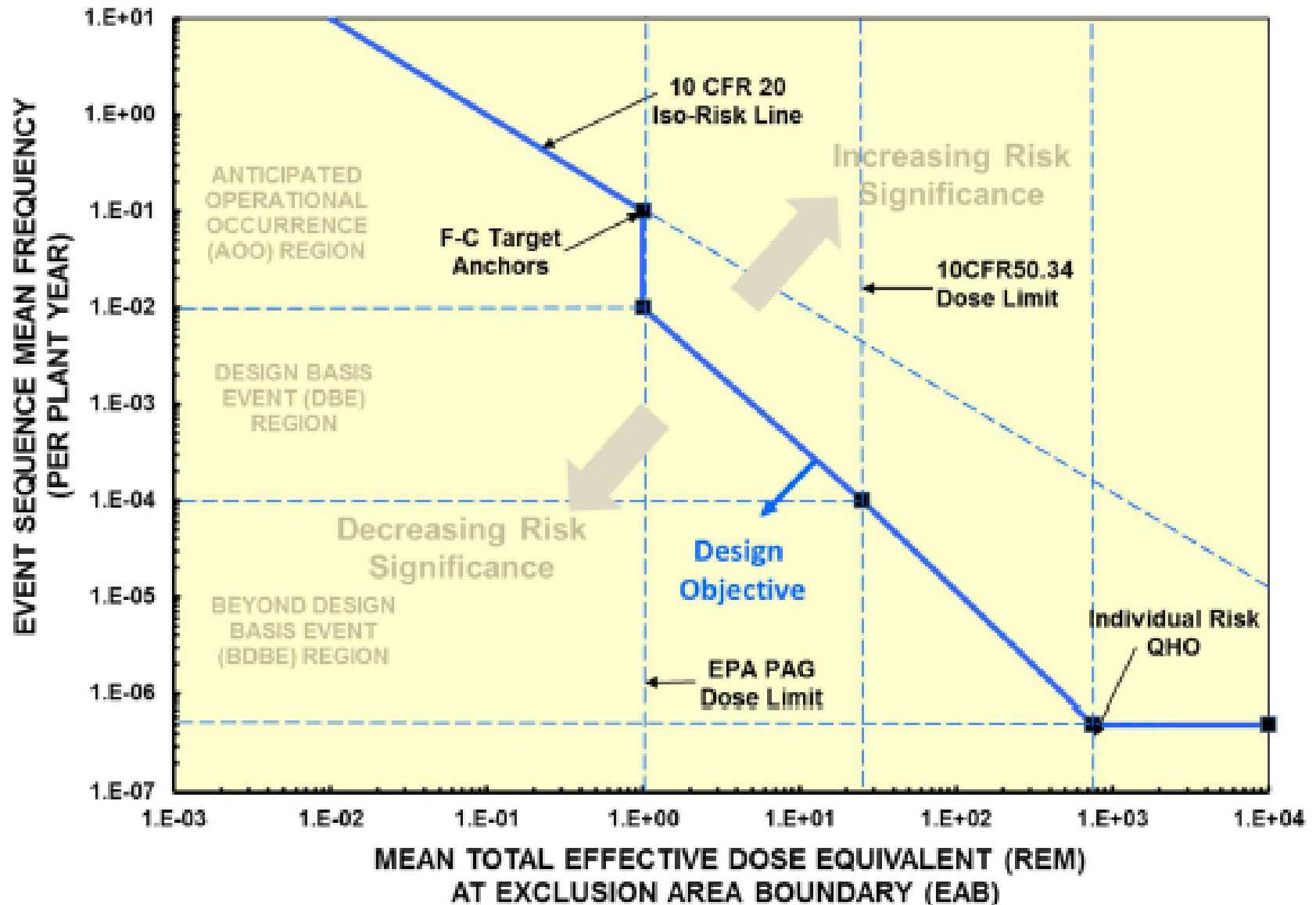
# LBE Selection Process



# Examples –LFR LBE's



# Categorization





# Final Result – Dose vs. Frequency

