American Electric Power

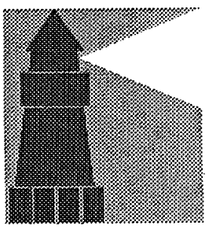
Meeting with

Nuclear Regulatory Commission

Resolution of Containment Structural Issues

D. C. Cook

June 11, 2001



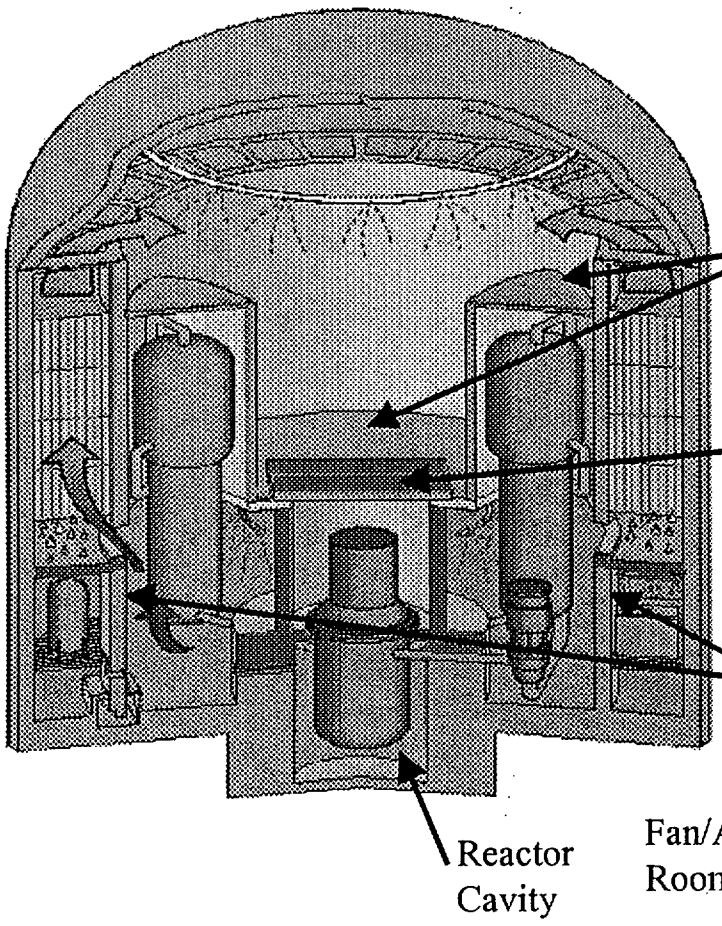
Agenda

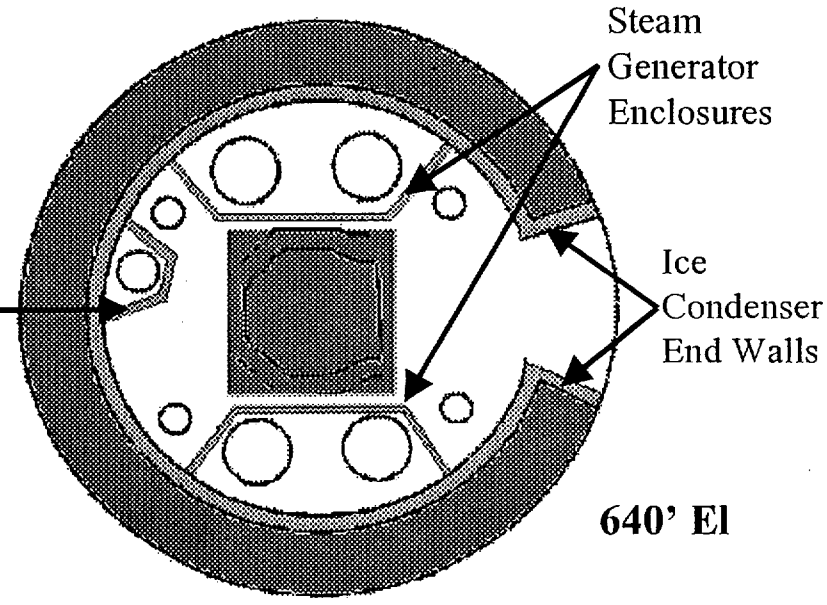
➢ Introduction	Mike Rencheck
➢ Background	Scot Greenlee
➢ Project Status Project Results Remaining Activities	Ron Smith
➢ Conclusion	Mike Rencheck

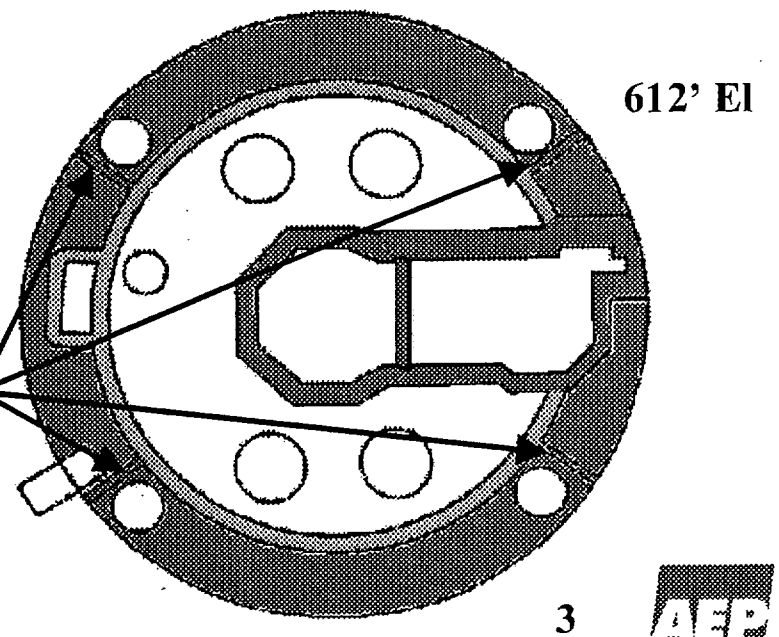
Background

Containment Structures

Structures at Restart



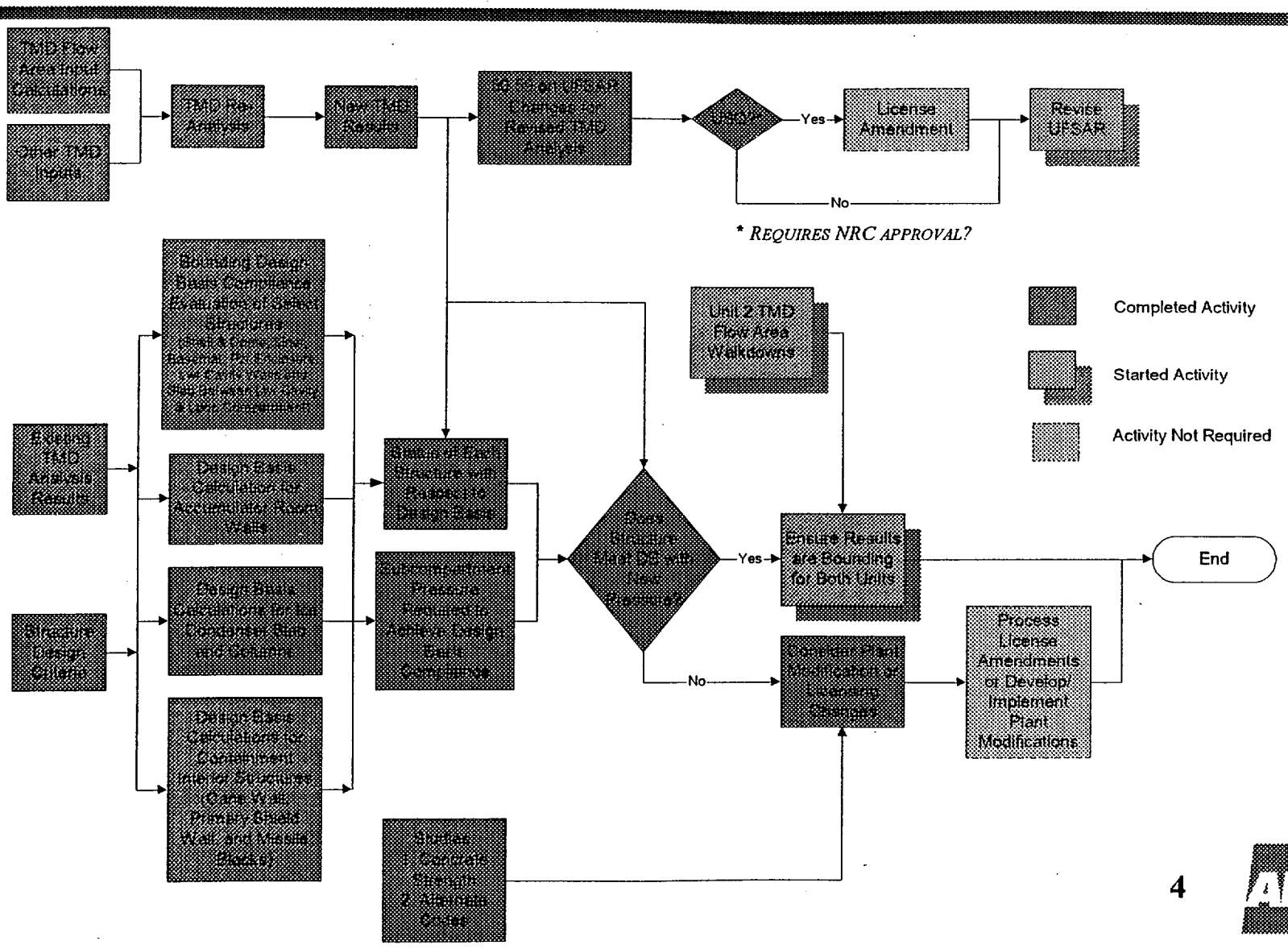




Operability Determination Evaluation (ODE) Results

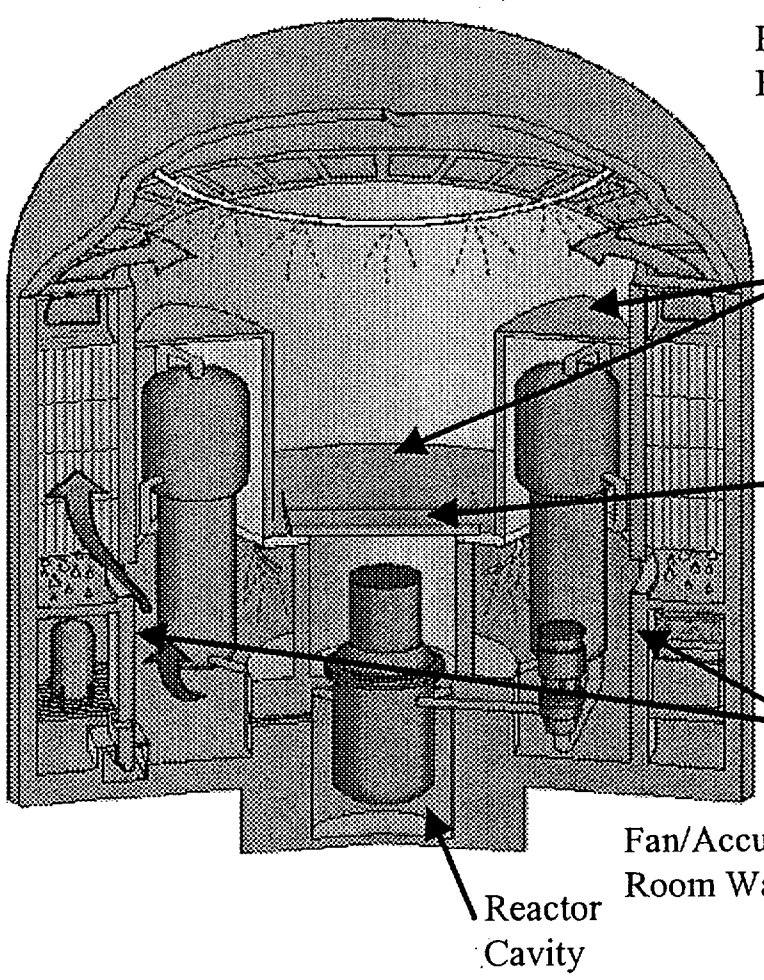
- **Design Basis Capacity**
- **Operable Capacity**

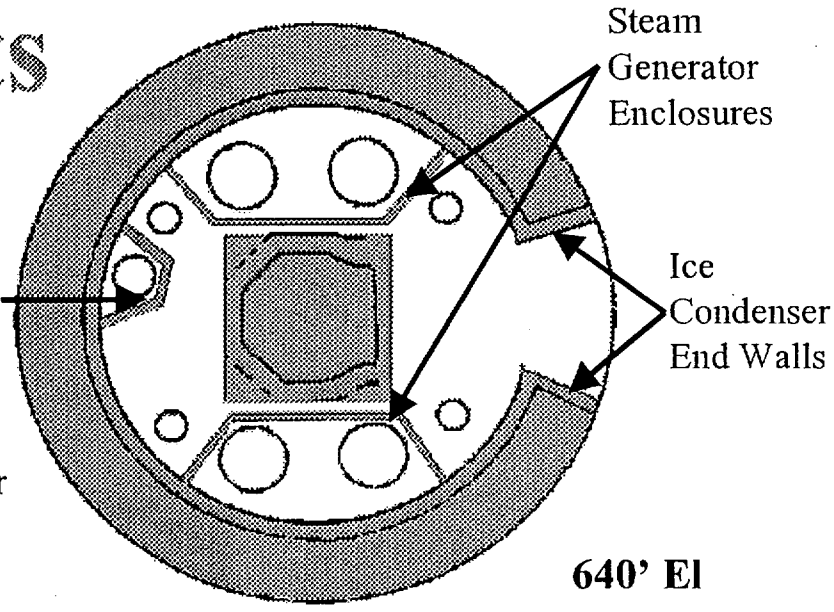
Project Status

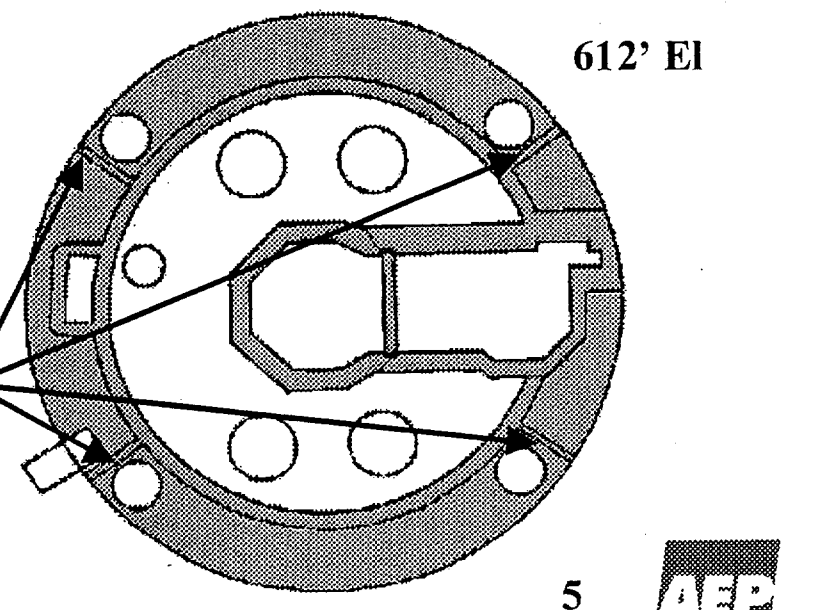


Project Results

Structures May 2001

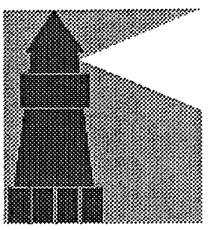






Evaluation Results

- **Design Basis Capacity**
- **Operability Capacity**



Project Results:
Historical Perspective

- 1973 -- As Originally Licensed
  - ACI-318-63/AISC-69/ASME Press. Vessel Code, 1968 ed.
  - Use of Transient Mass Distribution (TMD) model approved

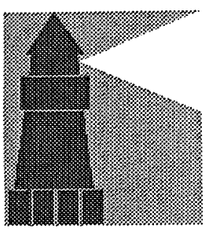
- 1989 -- As Currently Licensed
  - Same codes and TMD model apply
  - Shift from peak pressure to nodal differential pressure (psid)
  - Structural element margins unchanged

Project Results:
What Has NOT Changed

- Applicable Codes
- Subcompartment Design Stress Criteria Margins
- TMD Model

Code of Record and TMD Methodology Unchanged

AEP



Project Results:
What HAS Changed

- **TMD Inputs and Nodalization**
  - Physical characteristics refined
  - Increased nodes

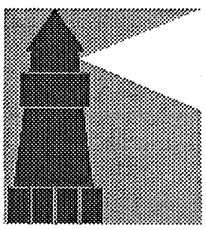
- **Concrete Strength**
  - FSAR: Minimum compressive streng
  - Now: Assume test-based 28-day comp
    - Conservative relative to test results

- **Reinforcing Steel Material Specification**
  - FSAR: Minimum yield strength of 40,000 psi (40 ksi)
    - Vast majority of containment sub-structures continue to apply standard
  - Now: Minimum Certified Material Test Report values for ice condenser end walls & missile shield (44/50 ksi)

use of Yield Line
dynamic increase factor
increased reinforcing steel
changing Design Basis
1.5
psi

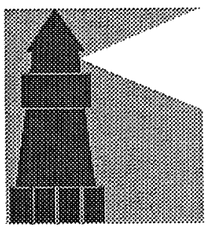
Project Results

Analyses Confirm Containment Structures Comply with Design Bases Requirements



Remaining Activities

- Close-out Project Paperwork
- Complete Third Party Reviews
- Complete Unit 2 Walkdowns

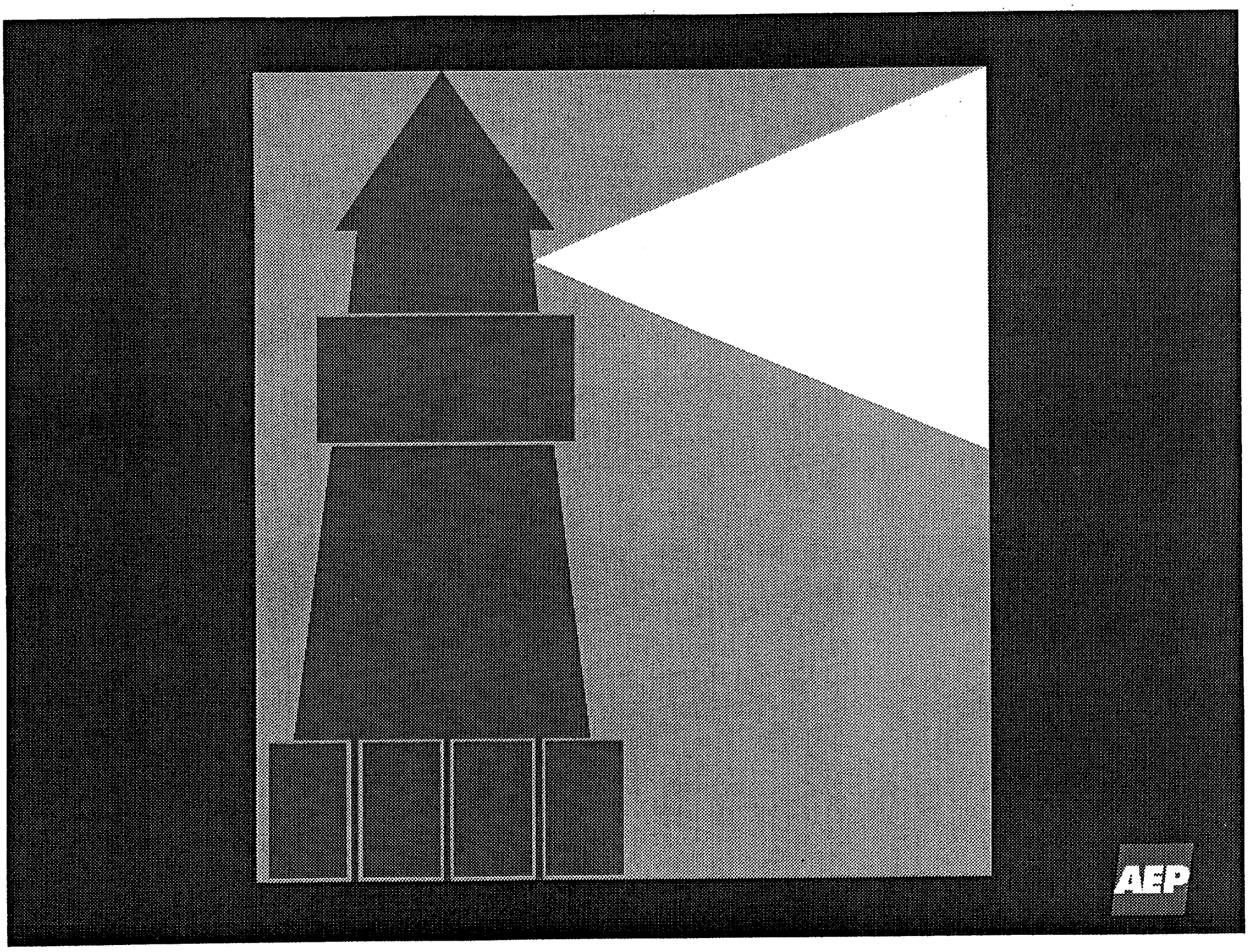


Conclusion

- Evaluation Phase of Project Complete
- Structures Have Necessary Design Margins
- Licensing Basis Changes Do Not Require Submittal
- Project Close-out Activities on Schedule

Analyses Confirmed Design Bases Compliance

AEP


AEP