

February 21, 2001

Mr. R. P. Powers  
Senior Vice President  
Nuclear Generation Group  
American Electric Power Company  
500 Circle Drive  
Buchanan, MI 49107-1395

SUBJECT: SUMMARY OF THE FEBRUARY 15, 2001, D. C. COOK PUBLIC MEETINGS

Dear Mr. Powers:

On February 15, 2001, the Nuclear Regulatory Commission (NRC) held two public meetings at the D. C. Cook Training Center in Bridgman, Michigan. The first meeting was held to discuss the status of corrective action efforts associated with the D. C. Cook Unit 1 and 2 containment structural issues. The second meeting was focused on D. C. Cook Unit 1 and 2 operational performance and the status of long term corrective actions related to backlog reduction and sustaining engineering improvement initiatives. Formal presentations were made by the Indiana Michigan Power Company (licensee) staff. Enclosure 1 is a list of attendees for the meetings, and a copy of the slides used by the licensee is provided as Enclosure 2.

The MC 0350 public meetings between the licensee and the NRC staff are designed to provide a mechanism for the exchange of information and a update on the status of D. C. Cook performance. High-level management from the NRC and the licensee participated in the meetings.

The licensee's presentation at the first meeting on February 15, 2001, focused on the status of ongoing activities related to the analysis of containment structural issues. Specifically, Mr. M. W. Rencheck, Vice President Nuclear Engineering, and other members of your engineering staff, provided an update of actions described in Mr. Renchecks' October 15, 2000, letter to the NRC regarding the resolution of containment structural issues at D. C. Cook. The letter provided a description of actions taken or planned to address a condition in which certain internal containment structural elements potentially did not meet the design load margins as described in the plant's licensing basis. At the meeting your staff described the long term corrective action plan and provided a summary of completed and ongoing actions. Actions completed included Unit 1 flow area walkdowns and calculations, development of finite element models, and Transient Mass Distribution analysis scoping runs for reconstituted containment flow areas. During the meeting discussions were held between the NRC and your staff regarding the results of the area walkdowns and actions being taken to verify the quality of calculations performed by outside contractors. Your staff stated that no significant deficiencies were identified during the walkdowns and that Performance Assurance and third party structural experts have conducted reviews of contractor calculations to verify quality. Your staff briefly discussed the status of ongoing evaluations of missile shield block rebar thickness issues that were recently identified during verification reviews of design information. Your staff then presented a summary of actions in progress including the identification of potential modifications, potential license amendments, and conduct of a finite element analysis for the

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reactor cavity crane wall and missile blocks. In closing, Mr. Rencheck summarized that significant progress had been achieved and that most preliminary refined analysis results are demonstrating conformance with the design basis. In addition, Mr. Rencheck stated that his staff is conservatively reconfirming inputs for bounding evaluations and refined analysis, and his staff is evaluating NRC staff questions regarding assumptions utilized in past evaluations. Mr. Rencheck stated that the analysis portion of the corrective action plan should be complete in May 2001, and that any changes to the schedule for completing the corrective action plan will be promptly communicated to the NRC staff.

The second meeting on February 15, 2001, was focused on overall performance of D. C. Cook Units 1 and 2. Your staff provided a summary of plant performance since the restart of Unit 1 in December 2000, and provided information regarding site goals and priorities for 2001. Your Plant Manager provided a synopsis of Unit 1 restart activities, stating that the restart was performed in a controlled and deliberate manner and that challenges were successfully addressed. The Plant Manager then discussed recent plant performance, including staff performance, in response to control rod drive problems on Unit 2 in January 2001, and Unit 1 reactor protection system problems in February 2001. Your Site Vice President stated that overall staff response to the problems was good; in particular, engineering and maintenance personnel provided good support in troubleshooting and evaluating the issues in a timely manner. The Site Vice President did note that communications with the NRC staff regarding these technical issues could have been more timely and that further improvements can be made in this area. In addition, in response to NRC staff questions, your staff discussed the status of human performance improvement initiatives. Your staff stated that the priorities for the site in 2001 are safe operation, successful completion of the Unit 2 refueling outage, reducing the backlog of corrective action items, and improving the effectiveness of first line supervisors.

The Director of Nuclear Engineering and Regulatory Affairs then presented a summary of the sites transition to the revised reactor oversight program. He stated that all Unit 1 and 2 performance indicators are green with the exception of those requiring additional data, and that all performance indicators will be reported by April 2003. The Plant Manager then led a discussion of initiatives planned or in progress to reduce the maintenance and corrective action backlog. Your staff described plans to prioritize and execute maintenance activities so that the backlog can be reduced in a timely manner without negatively impacting preventive and emergent corrective maintenance activities. Your staff then presented a summary of preparations being taken to support the next refueling outage, and discussions were held between your staff and the NRC staff regarding outage related licensing issues.

R. Powers

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Your Site Vice President concluded the meeting by stating that safety remains the number one priority and that actions are being initiated to focus staff efforts on ensuring that D. C. Cook will achieve top quartile performance.

Sincerely,

*/RA/*

Geoffrey Grant  
Division of Reactor Projects

Enclosures: 1. List of Meeting Attendees  
2. Licensee's Slide Presentation

Docket Nos. 50-315; 50-316  
License Nos. DPR-58; DPR-74

cc w/encl: A. C. Bakken III, Site Vice President  
J. Pollock, Plant Manager  
M. Rencheck, Vice President, Nuclear Engineering  
R. Whale, Michigan Public Service Commission  
Michigan Department of Environmental Quality  
Emergency Management Division  
MI Department of State Police  
D. Lochbaum, Union of Concerned Scientists

DOCUMENT NAME: G:\0350 Public Meetings\DCC 02-15-01tech&pubmin.wpd

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|--------|------------|---|----------|---|----------|---|----------|--|--|--|
| OFFICE | RIII       | E | RIII     | E | RIII     | E | RIII     |  |  |  |
| NAME   | Passeh/trn |   | Veget    |   | Bajwa    |   | Grant    |  |  |  |
| DATE   | 02/ 21/01  |   | 02/20/01 |   | 02/21/01 |   | 02/21/01 |  |  |  |

OFFICIAL RECORD COPY

R. Powers

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ADAMS Distribution:

RRB1

DFT

JFS2 (Project Mgr.)

J. Caldwell, RIII

G. Grant, RIII

B. Clayton, RIII

SRI D. C. Cook

C. Ariano (hard copy)

DRP

DRSIII

PLB1

JRK1

BAH3

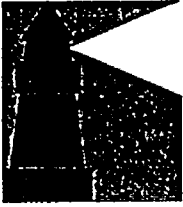
**D. C. Cook Nuclear Plant  
February 15, 2001 NRC 0350 Restart Panel Meeting  
Operational Performance**

| <b>Name</b>                 | <b>Organization</b>        |
|-----------------------------|----------------------------|
| <b>Geoffrey Grant</b>       | <b>NRC</b>                 |
| <b>Anton Vegel</b>          | <b>NRC</b>                 |
| <b>Bruce Bartlett</b>       | <b>NRC</b>                 |
| <b>Kevin Coyne</b>          | <b>NRC</b>                 |
| <b>Singh Bajwa</b>          | <b>NRC</b>                 |
| <b>John Stang</b>           | <b>NRC</b>                 |
| <b>Ron Gaston</b>           | <b>AEP</b>                 |
| <b>Scot Greenlee</b>        | <b>AEP</b>                 |
| <b>Mike Rencheck</b>        | <b>AEP</b>                 |
| <b>Joe Pollock</b>          | <b>AEP</b>                 |
| <b>Tom Noonan</b>           | <b>AEP</b>                 |
| <b>Stan Farlow</b>          | <b>AEP</b>                 |
| <b>James Nodeau</b>         | <b>AEP</b>                 |
| <b>Tom Bergman</b>          | <b>NRC</b>                 |
| <b>Matt Galbraith</b>       | <b>SB Tribune</b>          |
| <b>David Mayne</b>          | <b>AEP</b>                 |
| <b>M. Russell</b>           | <b>Berrien Co. Sheriff</b> |
| <b>David Chandler</b>       | <b>Berrien Co. Sheriff</b> |
| <b>David F. Kunsemiller</b> | <b>AEP</b>                 |
| <b>Michael L. Horvath</b>   | <b>AEP</b>                 |
| <b>David W. Jenkins</b>     | <b>AEP</b>                 |
| <b>Perry D. Robinson</b>    | <b>Foley &amp; Lardner</b> |
| <b>Robert K. Temple</b>     | <b>Foley &amp; Lardner</b> |
| <b>Robert Godley</b>        | <b>AEP</b>                 |

**D. C. Cook Nuclear Plant  
February 15, 2001 NRC 0350 Technical Meeting  
Containment Structures Meeting**

|                        |                            |
|------------------------|----------------------------|
| <b>Ron Smith</b>       | <b>AEP</b>                 |
| <b>Joe Wateus</b>      | <b>AEP</b>                 |
| <b>Tom Bergman</b>     | <b>NRC</b>                 |
| <b>J. A. Gavula</b>    | <b>NRC</b>                 |
| <b>Steven West</b>     | <b>NRC</b>                 |
| <b>Nilesh Chokshi</b>  | <b>NRC</b>                 |
| <b>John Stang</b>      | <b>NRC</b>                 |
| <b>Kevin Coyne</b>     | <b>NRC</b>                 |
| <b>Brenda Kovarik</b>  | <b>AEP</b>                 |
| <b>Bob Temple</b>      | <b>Foley &amp; Lardner</b> |
| <b>Raman Pichumani</b> | <b>NRR</b>                 |
| <b>S. Singh Bajwa</b>  | <b>NRR</b>                 |
| <b>Geoffrey Grant</b>  | <b>NRC</b>                 |
| <b>Anton Vogel</b>     | <b>NRC</b>                 |
| <b>Bruce Bartlett</b>  | <b>NRC</b>                 |
| <b>Bill Schalk</b>     | <b>AEP</b>                 |
| <b>Matt Galbraith</b>  | <b>SB Tribune</b>          |
| <b>Ron Gaston</b>      | <b>AEP</b>                 |
| <b>Scot Greenlee</b>   | <b>AEP</b>                 |
| <b>Chris Bakken</b>    | <b>AEP</b>                 |
| <b>Mike Rencheck</b>   | <b>AEP</b>                 |

**Enclosure 1**



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**American Electric Power**

**Meeting with**

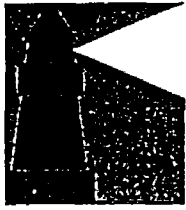
**Nuclear Regulatory Commission**

**Update on Containment Structures**

**D. C. Cook**  
**February 15, 2001**







# Agenda for Update on Containment Structures

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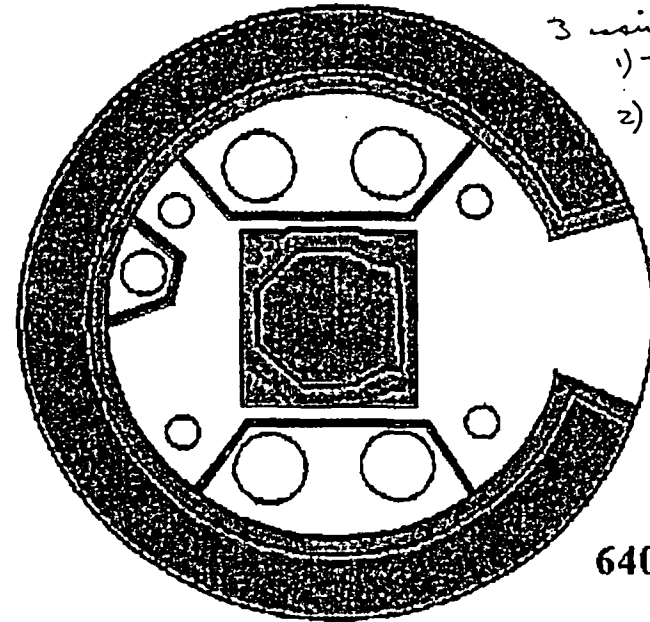
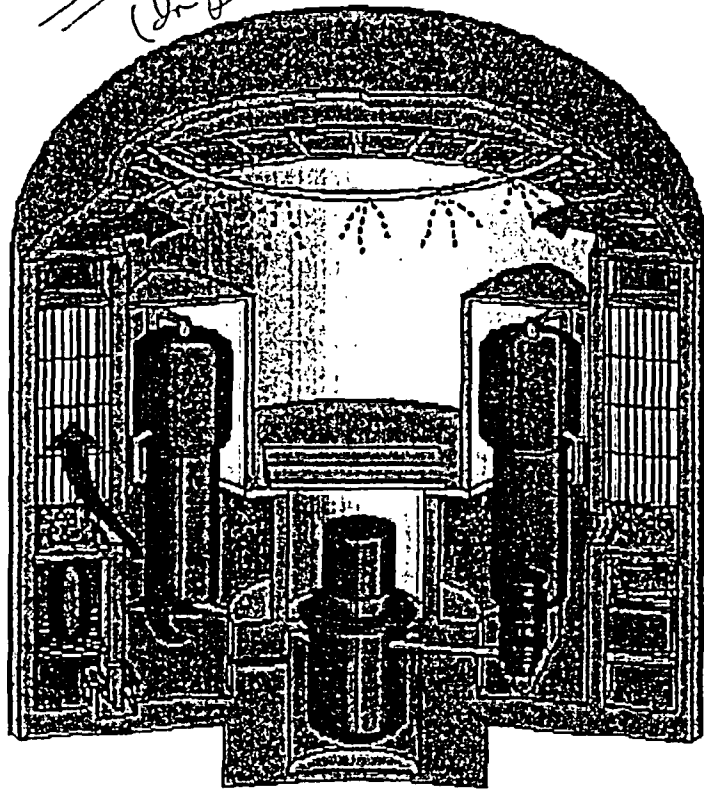
- Introduction Mike Rencheck *- made intro*  
*(Progress to date →*
- Background Scot Greenlee  
*→ rechecking → checking → looked at 0350 → factoring this info <sup>(+)</sup> and <sup>(-)</sup> impact*
- Accomplishments & Project Direction Ron Smith  
Updated Project Schedule
- Conclusion Mike Rencheck





# Background: ODE Results

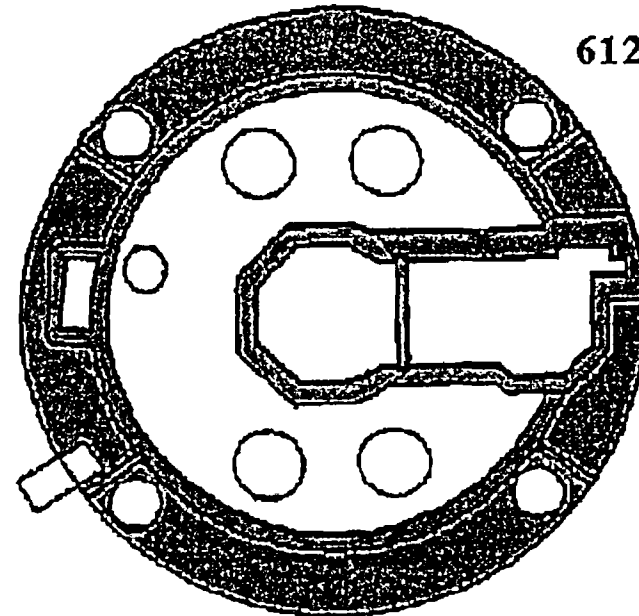
U-2  
(In June, 2000)



OP Goals

- 3 issues →
- 1) TMD
- 2) Masses or def calculations
- 3) Physical deformations

640' EI



612' EI

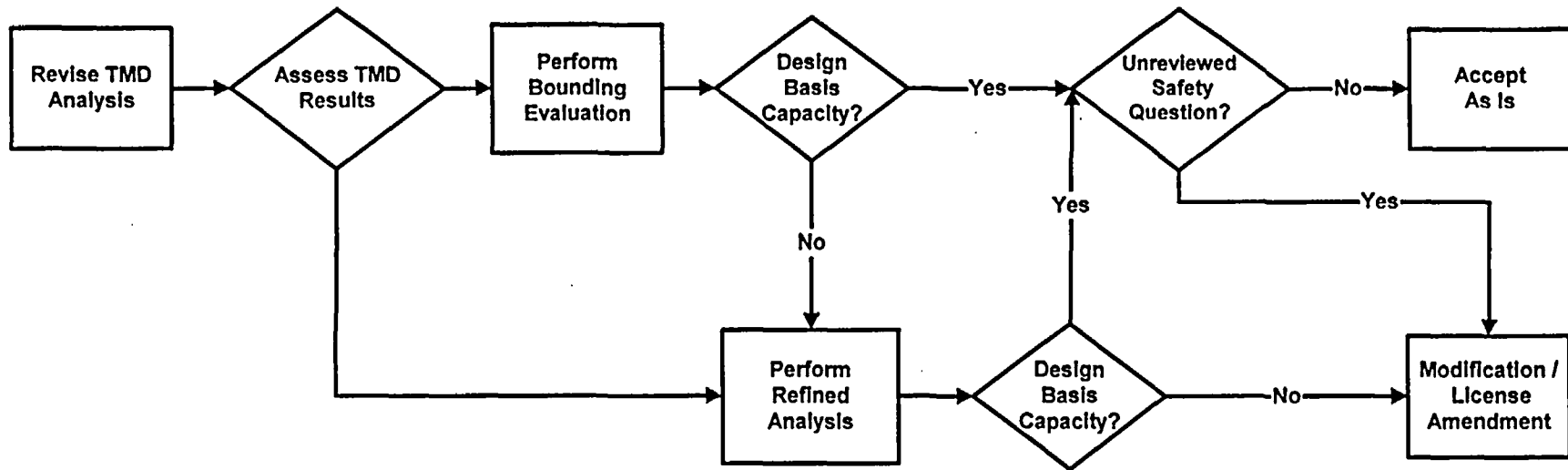
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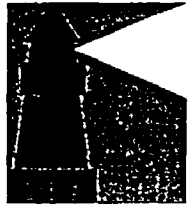
- Design Basis Capacity (1.5)
- Operable Capacity (>1.0)



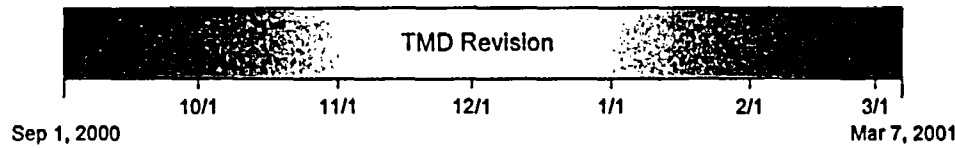


# Background: Long-term Corrective Action Plan

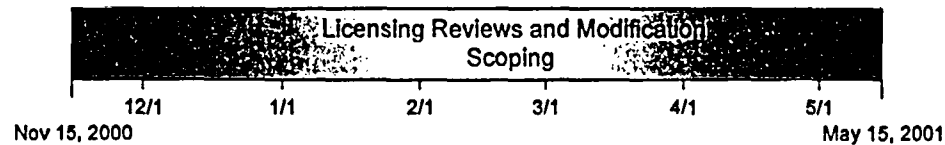
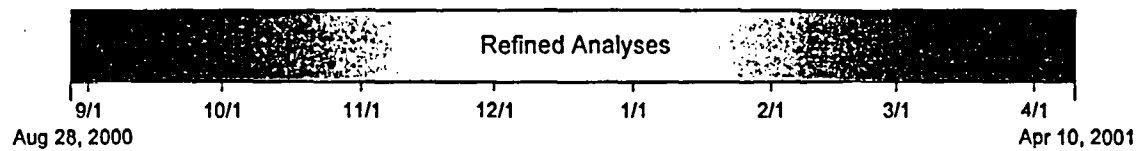
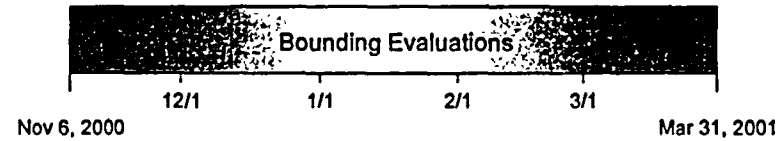




# Background: Original Schedule for Major Activities



*In most cases TMD analyses need full design basis.*



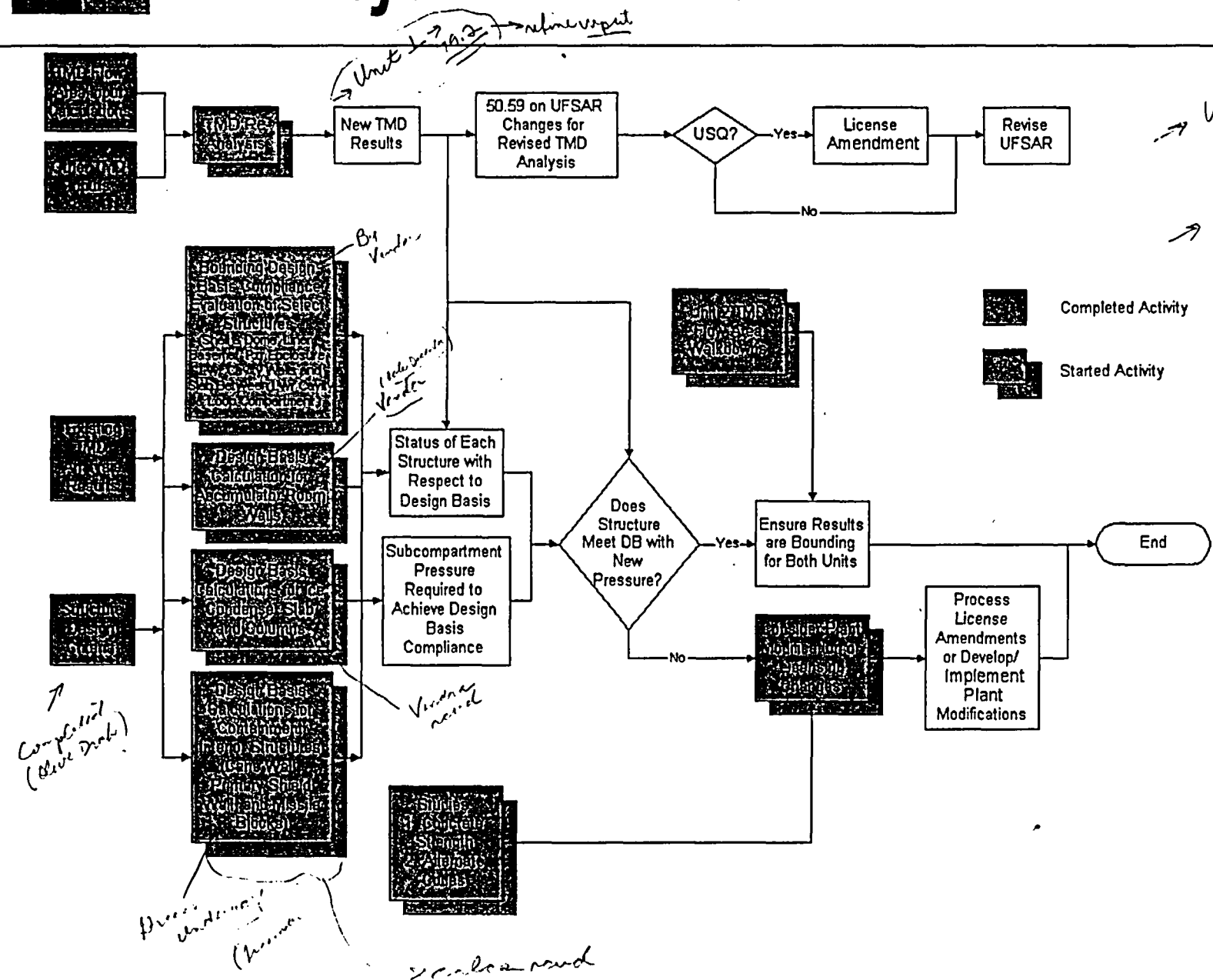
Unit 2 Validation to be performed during next Refueling Outage

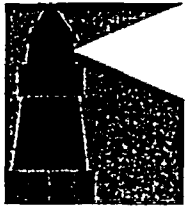




# Accomplishments and Project Direction

*- 90 days remaining  
TMD Flow Area  
→ U-1 w/d's complete.  
→ U-2 w/d's*





# Accomplishment Summary

Staff questioned  
→ schiff not design  
→ view drawings  
→ vs as-built  
→ results of w/D's  
→ approach said no  
major issues w/d's  
based on  
comparison

## ■ Actions Completed

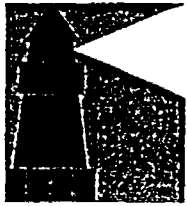
- Flow area walkdowns (Unit 1) and calculations → primary input (W) TMD
- Walkdown for Unit 2 steam generator enclosure #2 → (No anomalies)
- Finite element models (developed)
- Finite element analysis for AEP review:
  - » Fan accumulator rooms (Units 1 & 2) ←
  - » Ice condenser slab & lower support structure (Unit 1) ↓
- TMD analysis scoping runs for reconstituted containment flow areas
- Refined analysis for AEP review:
  - » Containment shell and other select structures
- TMD sensitivity runs } flow-area runs
- Validated calculations input assumptions for bounding evaluations and refined analyses

increased margin

→ 40 ksi steel of rebar  
→ calculation of  
↳ Missile Blocks  
Rx Cavity

→ staff questioned  
→ upon  
→ design review board  
→ PA design review  
- no issues  
→ Third Party review  
no small no DR.





# Accomplishment Summary (cont.)

## ■ Actions in Progress

- Identify potential modifications/license amendments
- Finite element analysis for:
  - » Reactor cavity crane wall
  - » Missile blocks

*← POT*  
*- Whip next (very det)*  
*- Drop plans + amend plans*

## ■ Refined Actions (in Progress)

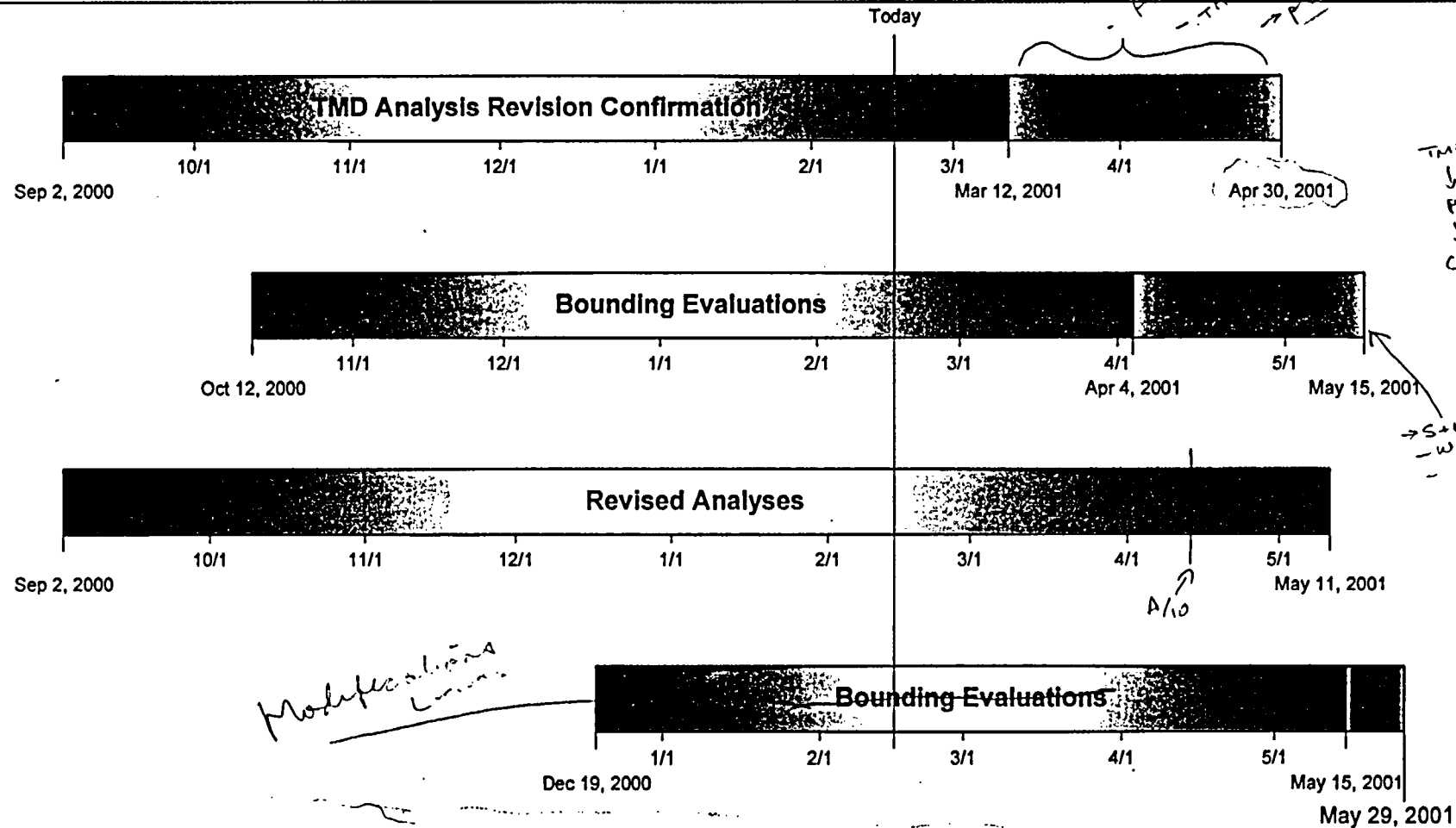
- TMD results:
  - » Refine break flow & area assumptions
- Address analysis comments:
  - » Evaluate certain input assumptions
- Forced outage:
  - » Complete additional planning and scheduling

*} ↑ mobilization of activities was (made)*  
*• specific → concrete + rebar strength impact*  
*each comment received*  
*• addition to work*  
*} U-2 → focus Rx Cavity*  
*→ SAZ.*





# Updated Projected Schedule for Major Activities



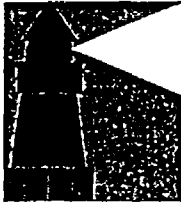
Unit 2 Validation to be performed during next Refueling Outage



Added Scope







# Conclusion

*→ reviewing  
Get 15, 2000  
C/A plans  
→ doing them in parallel.*

## ■ Significant Progress Achieved

## ■ Refined Analyses Results are Positive

- Most demonstrating conformance with Design Basis
- Conservatively reconfirmed inputs for bounding evaluations and refined analyses
- Iterative process used to further refine where needed

*(Looking at NRC comments  
using 3RD party + PA: F/u)*

*• Will continue to try to do U-2 w/D's as much as possible.*

## ■ We are Taking the Time to Do it Right

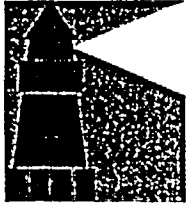
*(Will complete this work)*

*↓  
look at  
cell options  
- reviewing  
- modifications  
- review  
n.Mod.*

## ■ We Still Expect this Phase to be Complete in May 2001

*→ Will provide letter to  
change to  
document my Commitments.*





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# **American Electric Power**

**Meeting with**

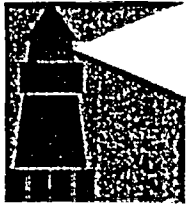
## **Nuclear Regulatory Commission**

**Update on Containment Structures**

**D. C. Cook**

**February 15, 2001**

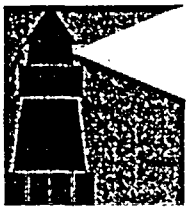




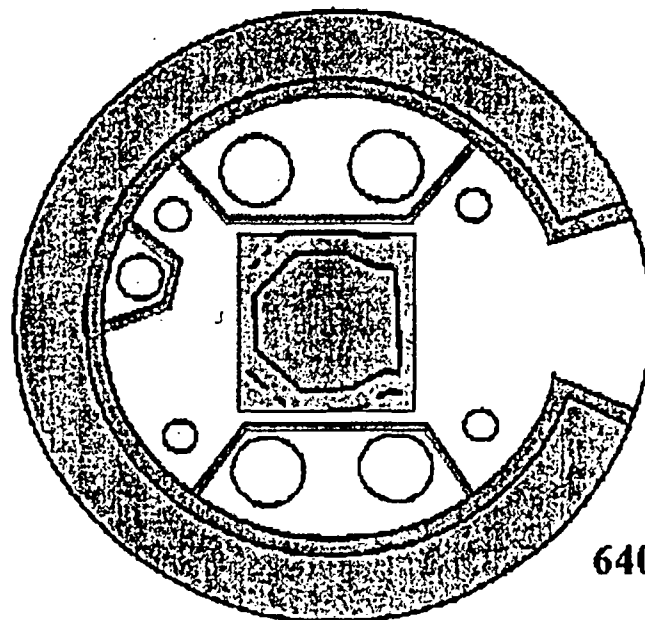
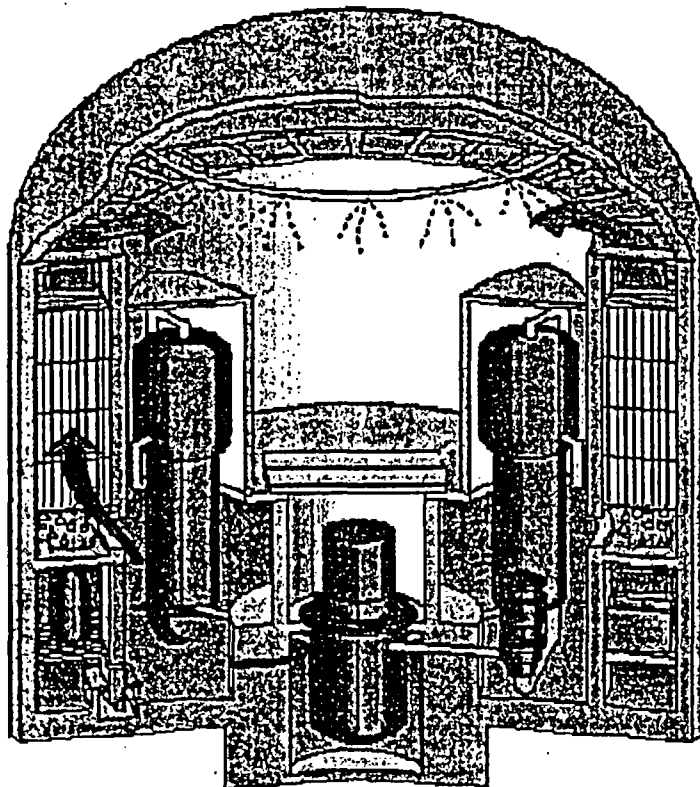
# *Agenda for Update on Containment Structures*

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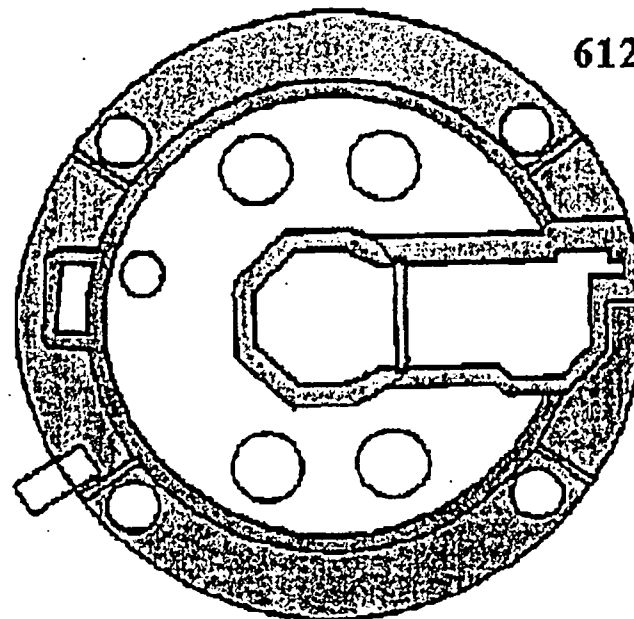
- |   |               |
|---|---------------|
| ■ Introduction  | Mike Rencheck |
| ■ Background  | Scot Greenlee |
| ■ Accomplishments & Project Direction<br>Updated Project Schedule | Ron Smith     |
| ■ Conclusion  | Mike Rencheck |



# Background: ODE Results



640' EI

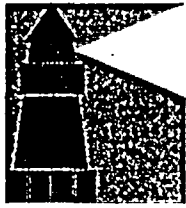


612' EI

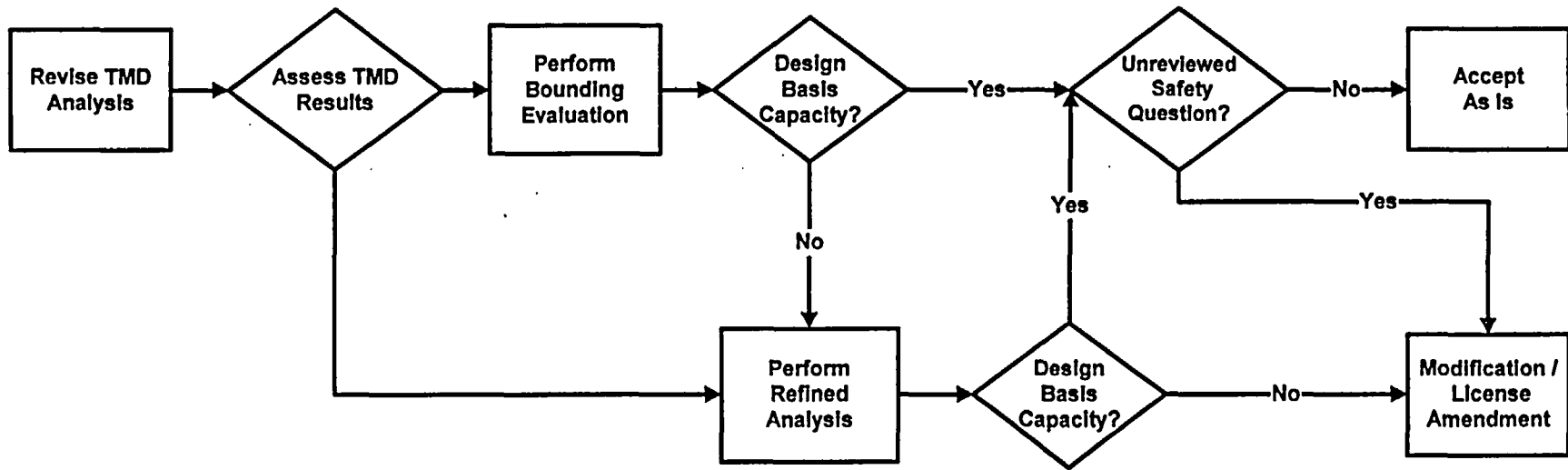
## Operability Determination Evaluation (ODE) Results

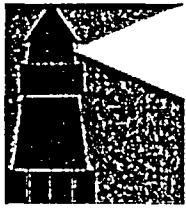
 Design Basis Capacity

 Operable Capacity

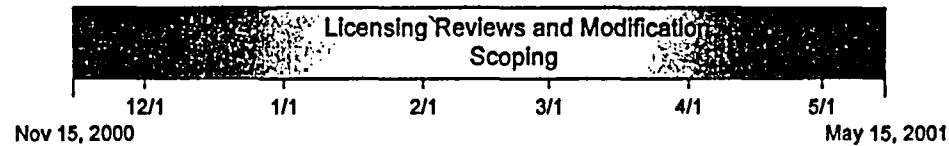
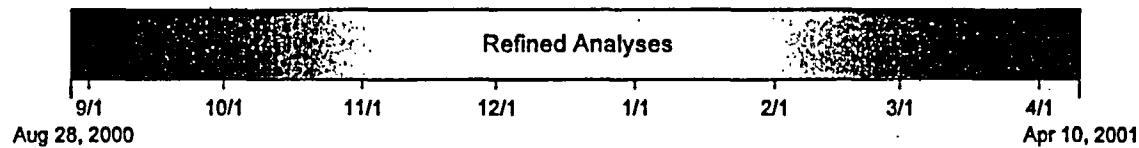
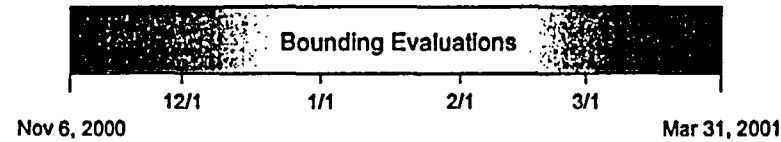
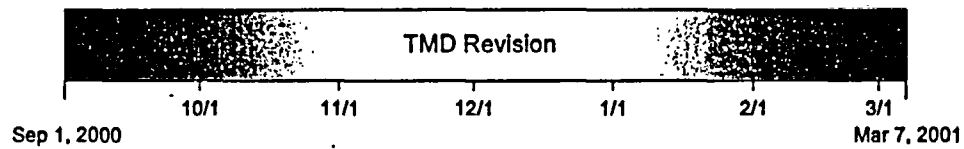


# Background: Long-term Corrective Action Plan



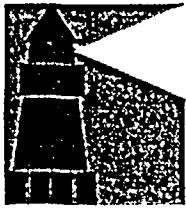


# Background: Original Schedule for Major Activities

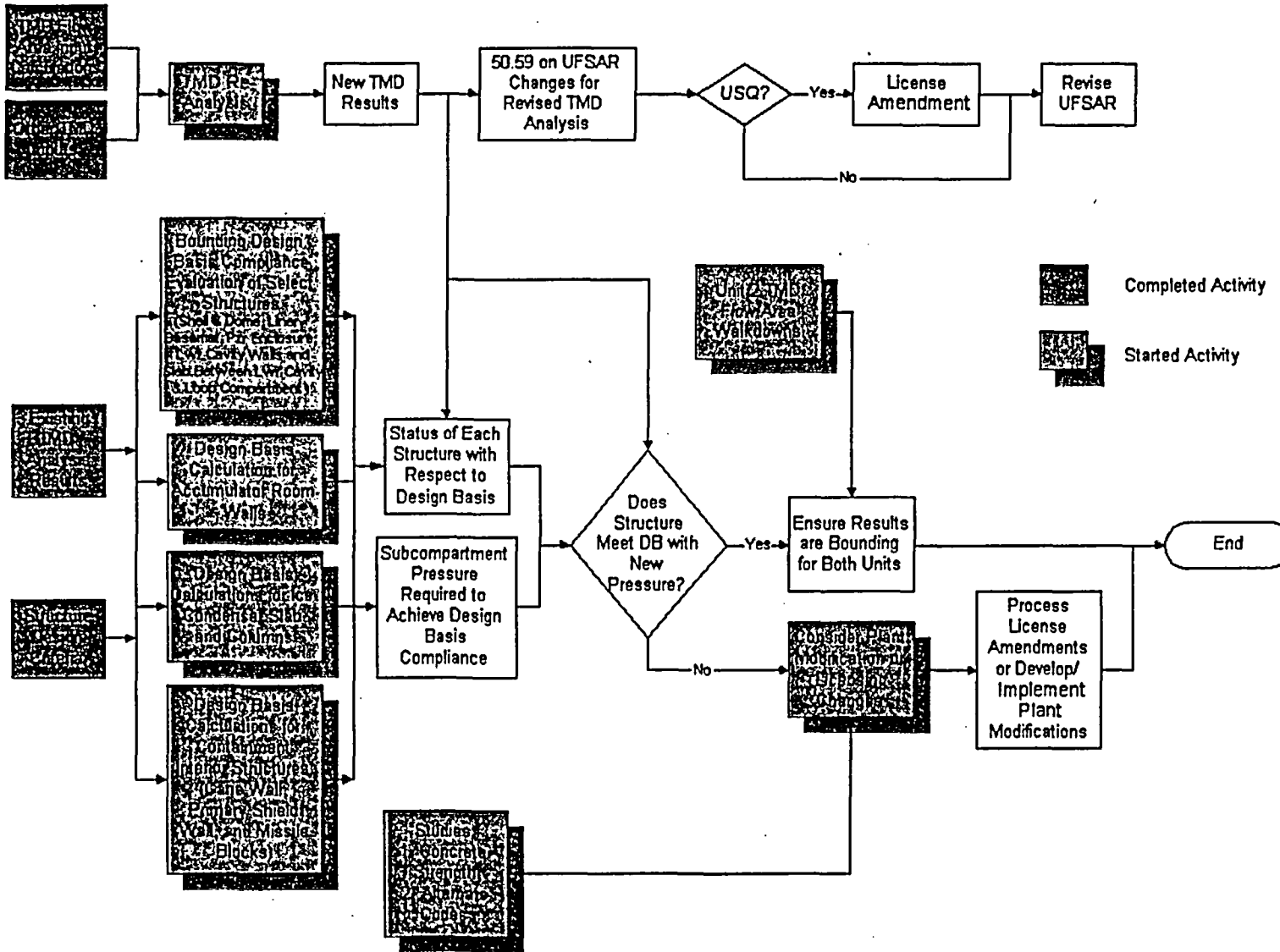


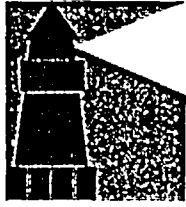
Unit 2 Validation to be performed during next Refueling Outage





# Accomplishments and Project Direction





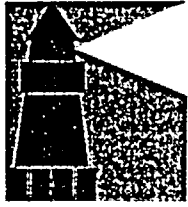
# *Accomplishment Summary*

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## ■ **Actions Completed**

- **Flow area walkdowns (Unit 1) and calculations**
- **Walkdown for Unit 2 steam generator enclosure #2**
- **Finite element models (developed)**
- **Finite element analysis for AEP review:**
  - » **Fan accumulator rooms (Units 1 & 2)**
  - » **Ice condenser slab & lower support structure (Unit 1)**
- **TMD analysis scoping runs for reconstituted containment flow areas**
- **Refined analysis for AEP review:**
  - » **Containment shell and other select structures**
- **TMD sensitivity runs**
- **Validated calculations input assumptions for bounding evaluations and refined analyses**





# *Accomplishment Summary (cont.)*

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## ■ **Actions in Progress**

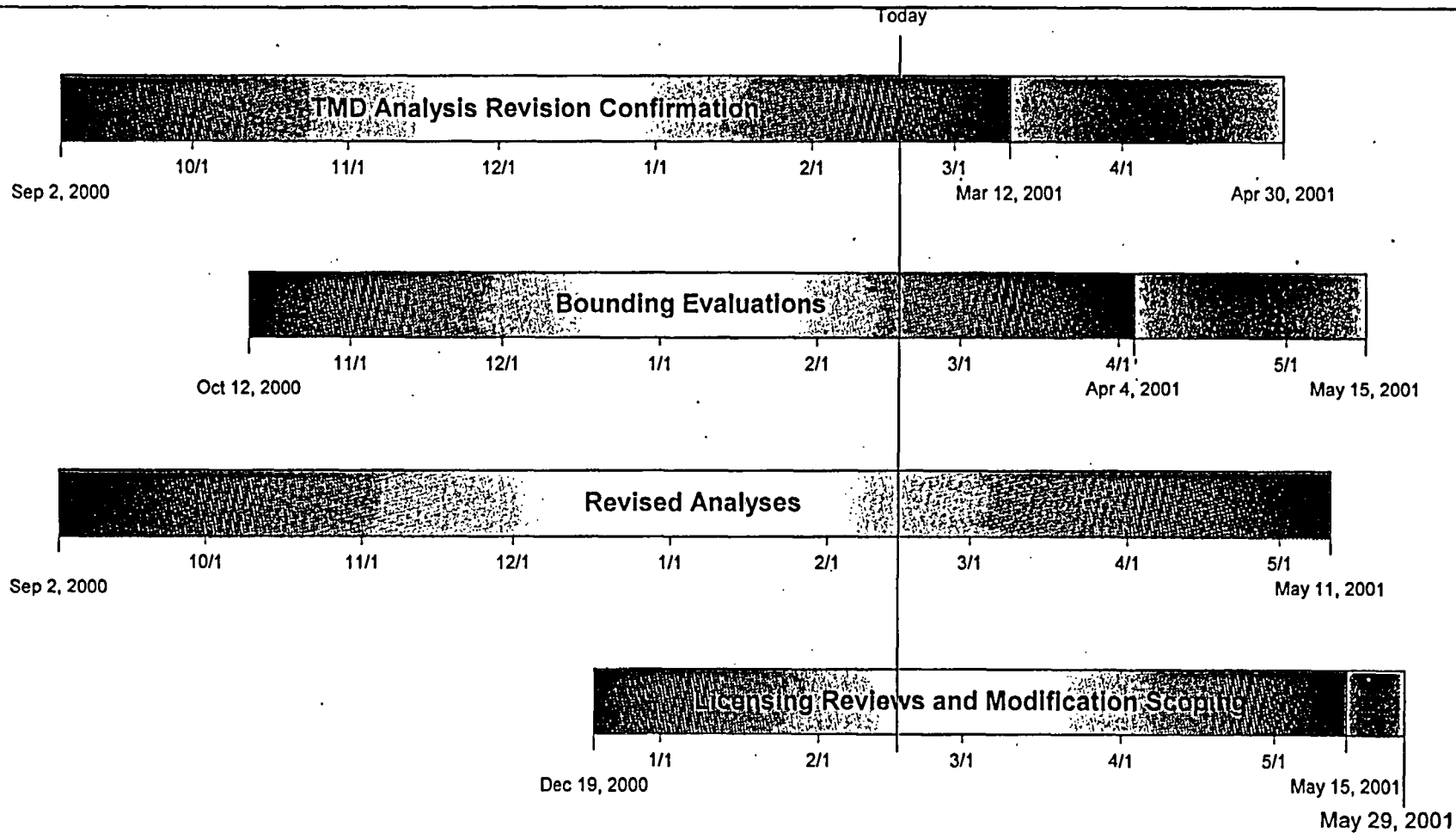
- Identify potential modifications/license amendments
- Finite element analysis for:
  - » Reactor cavity crane wall
  - » Missile blocks

## ■ **Refined Actions (in Progress)**

- TMD results:
  - » Refine break flow & area assumptions
- Address analysis comments:
  - » Evaluate certain input assumptions
- Forced outage:
  - » Complete additional planning and scheduling



# Updated Projected Schedule for Major Activities

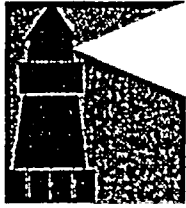


Unit 2 Validation to be performed during next Refueling Outage



Added Scope

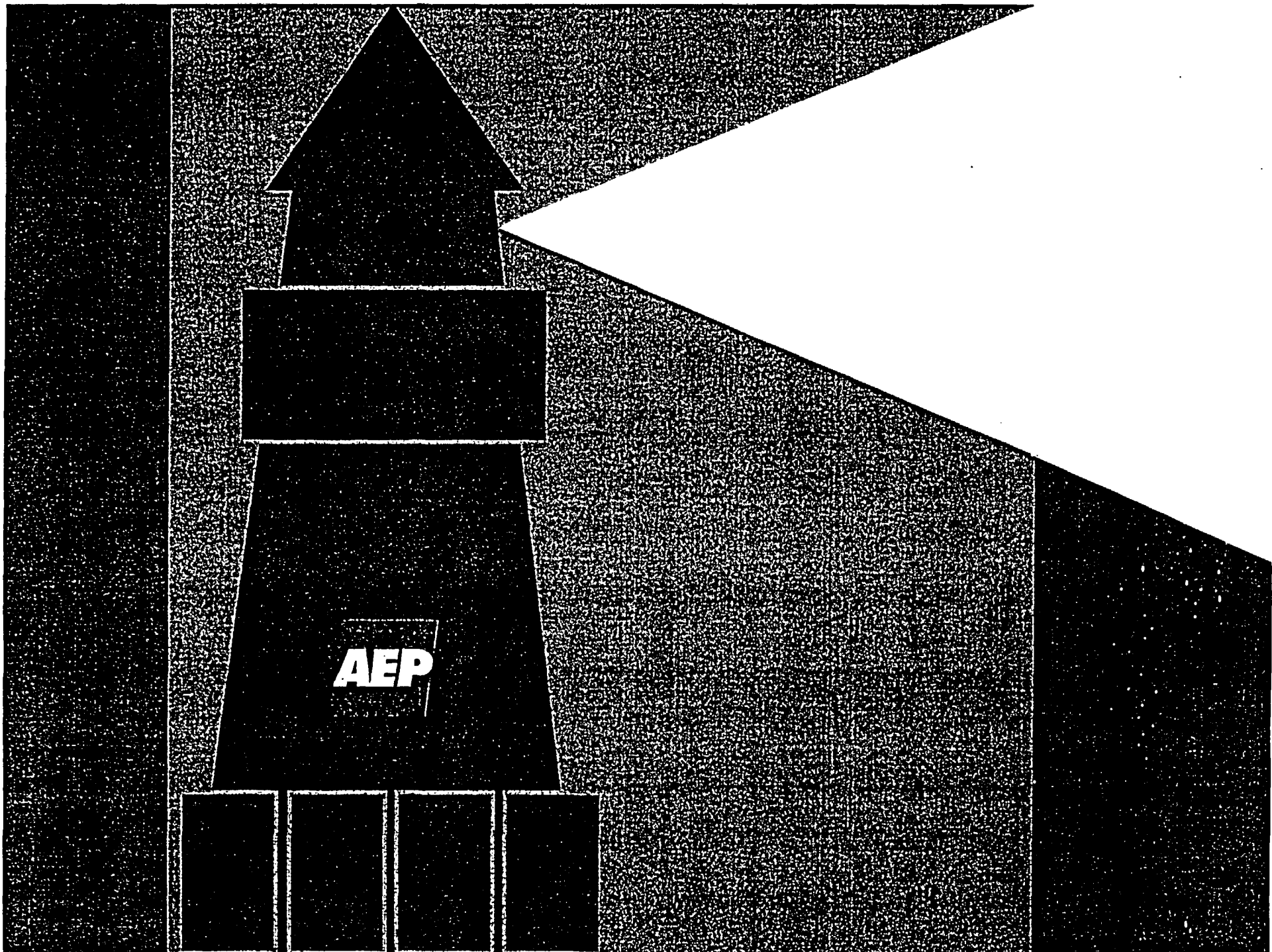


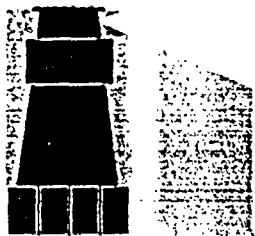


# *Conclusion*

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- **Significant Progress Achieved**
- **Refined Analyses Results are Positive**
  - **Most demonstrating conformance with Design Basis**
  - **Conservatively reconfirmed inputs for bounding evaluations and refined analyses**
  - **Iterative process used to further refine where needed**
- **We are Taking the Time to Do it Right**
- **We Still Expect this Phase to be Complete in May 2001**





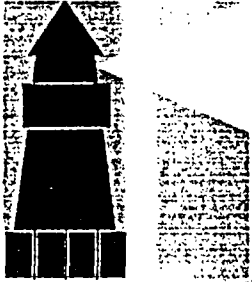
# **American Electric Power**

**Meeting with**

## **Nuclear Regulatory Commission**

**Operating D. C. Cook  
February 15, 2001**





# ***Safe Operations -- Plant Performance***

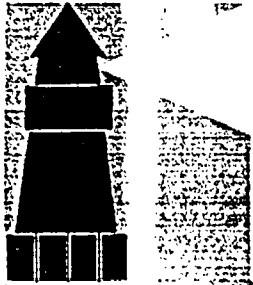
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## **■ Unit 1 Start-up**

- Safe & Deliberate**
- Challenges Successfully Addressed**
- Plant and Personnel Responded Well**

## **■ Recent Operating History**

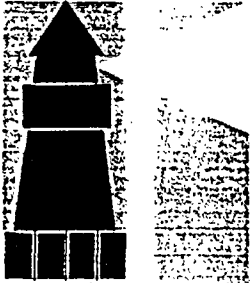
- Solid Plant Operations**
- Maintenance / Engineering Providing Good Support**



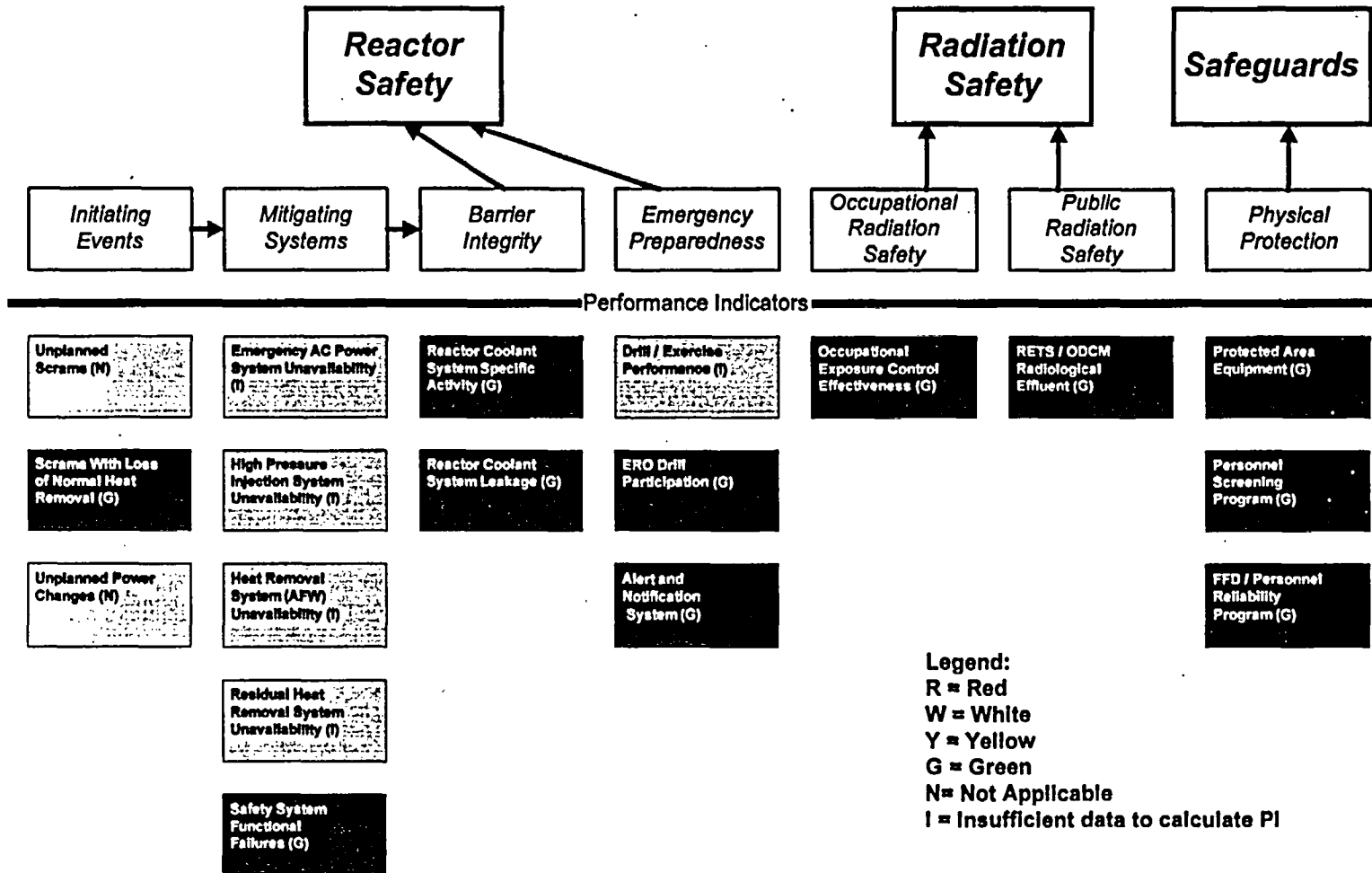
# ***Safe Operations -- Revised Reactor Oversight Program***

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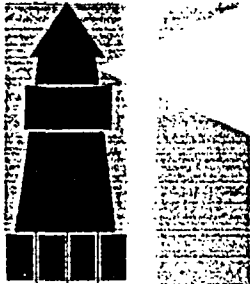
- **All Unit 1 & 2 Reported Indicators Currently Green**
- **Remaining Indicators Being Monitored for Trends**
- **All Indicators Reported by April 2003** (1<sup>st</sup> Quarter 2003 Data)



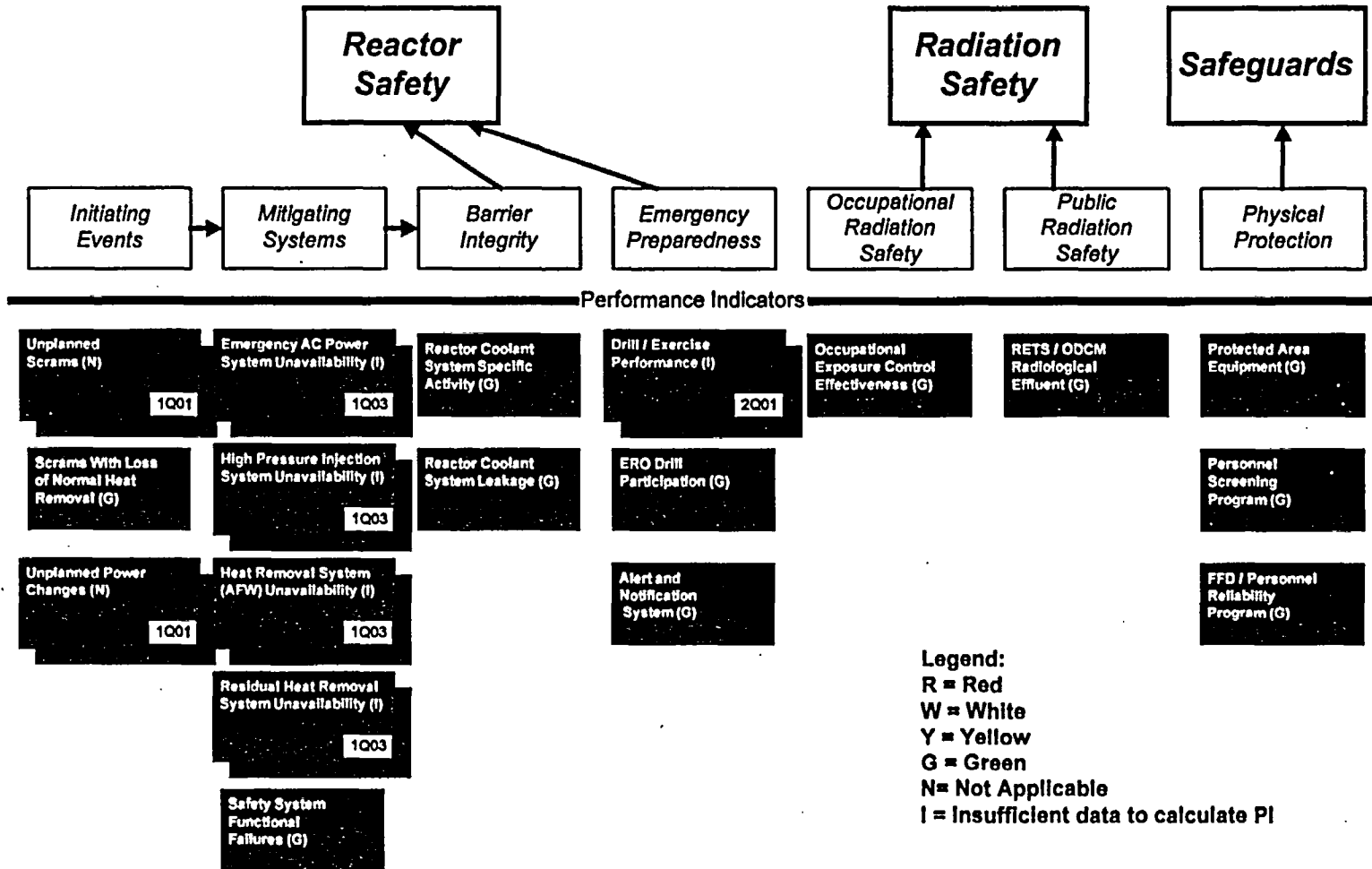
# Safe Operations -- Cook 1 4Q00 Performance

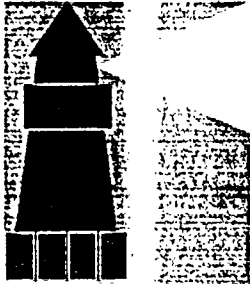




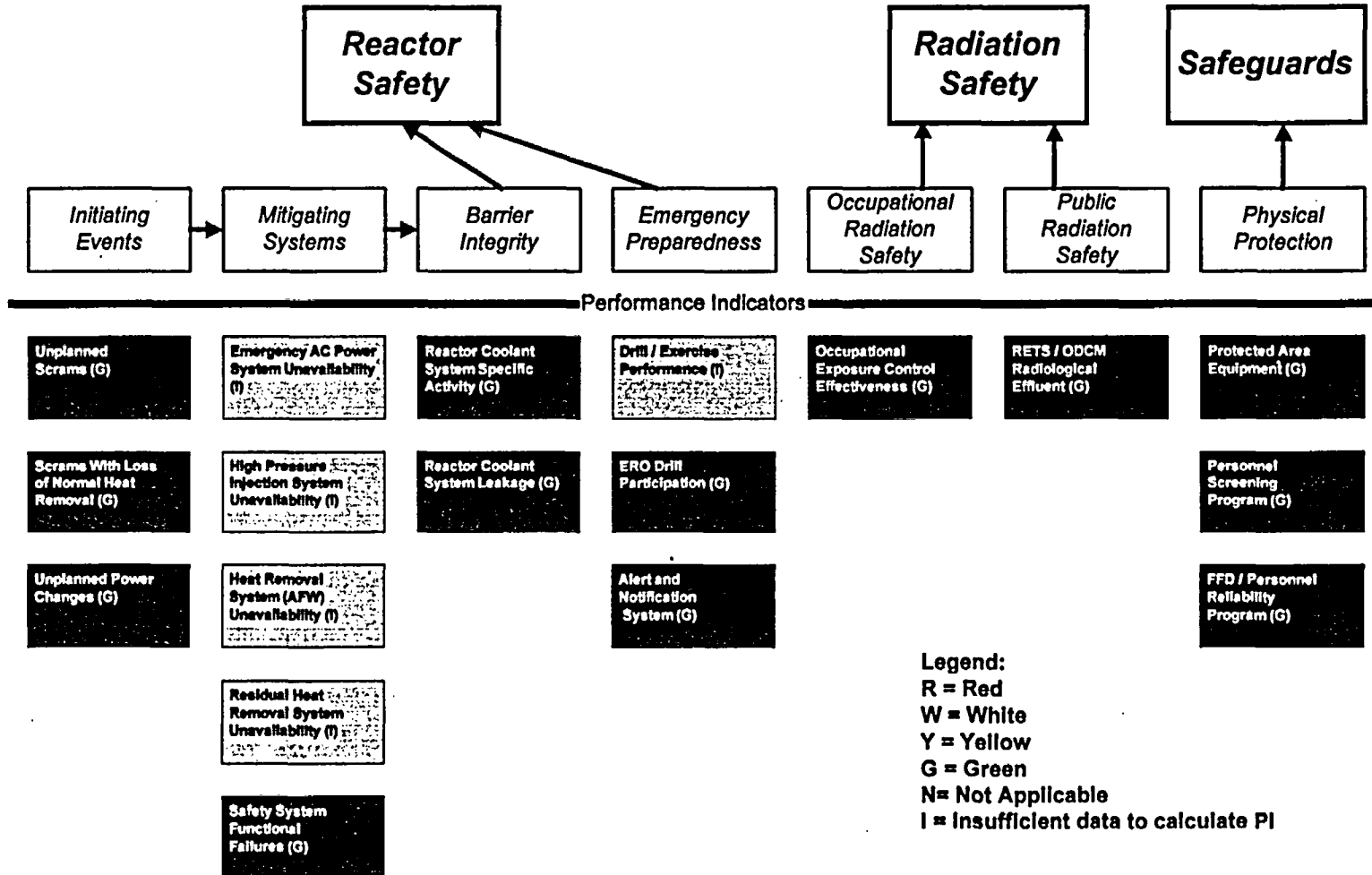


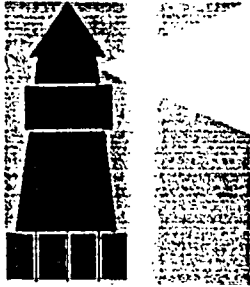
# Safe Operations -- Cook 1 Projected Performance



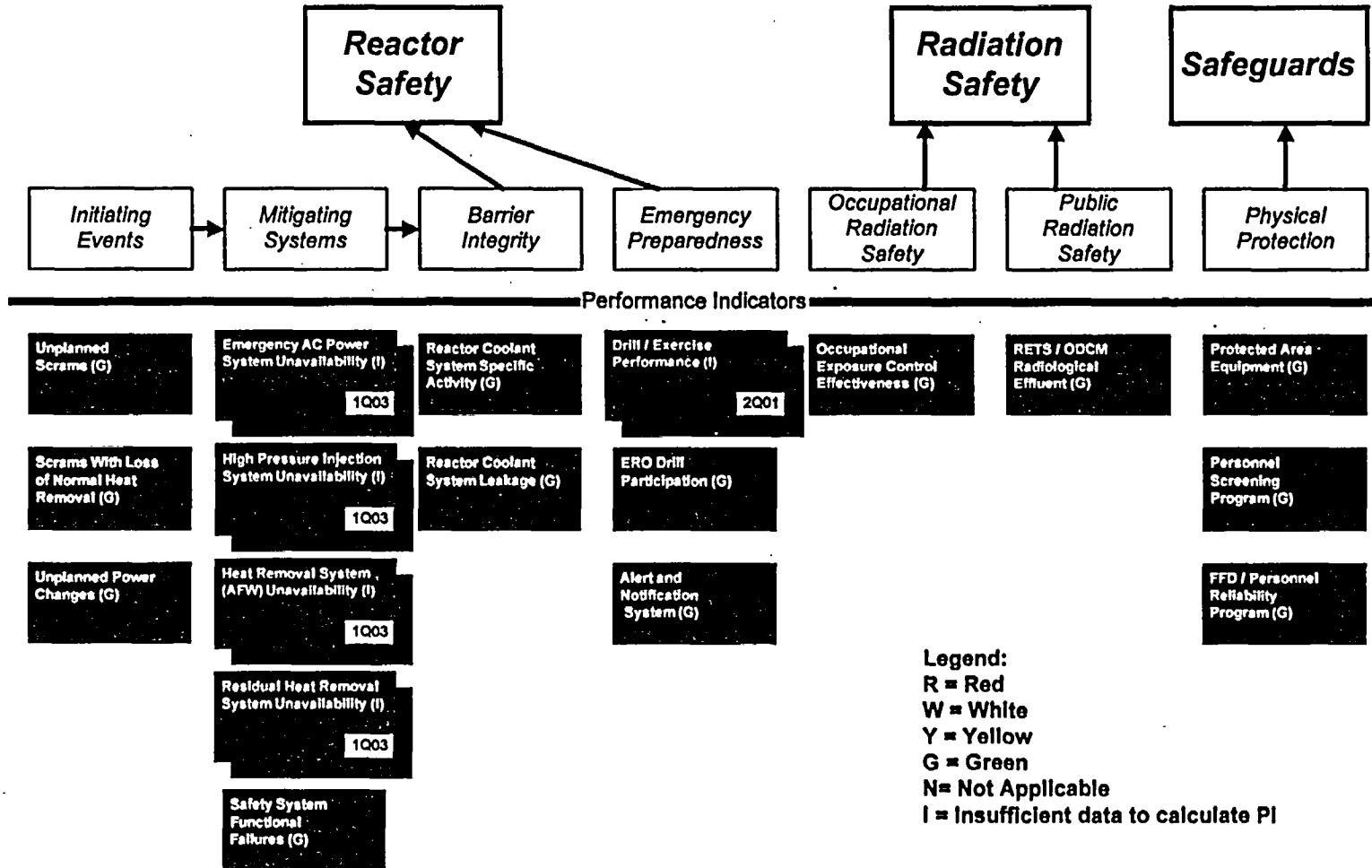


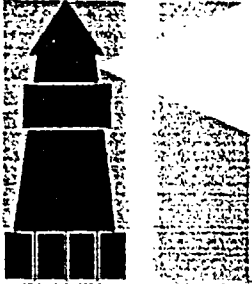
# Safe Operations -- Cook 2 4Q00 Performance





# Safe Operations -- Cook 2 Projected Performance

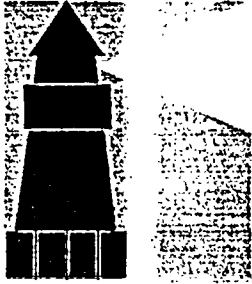




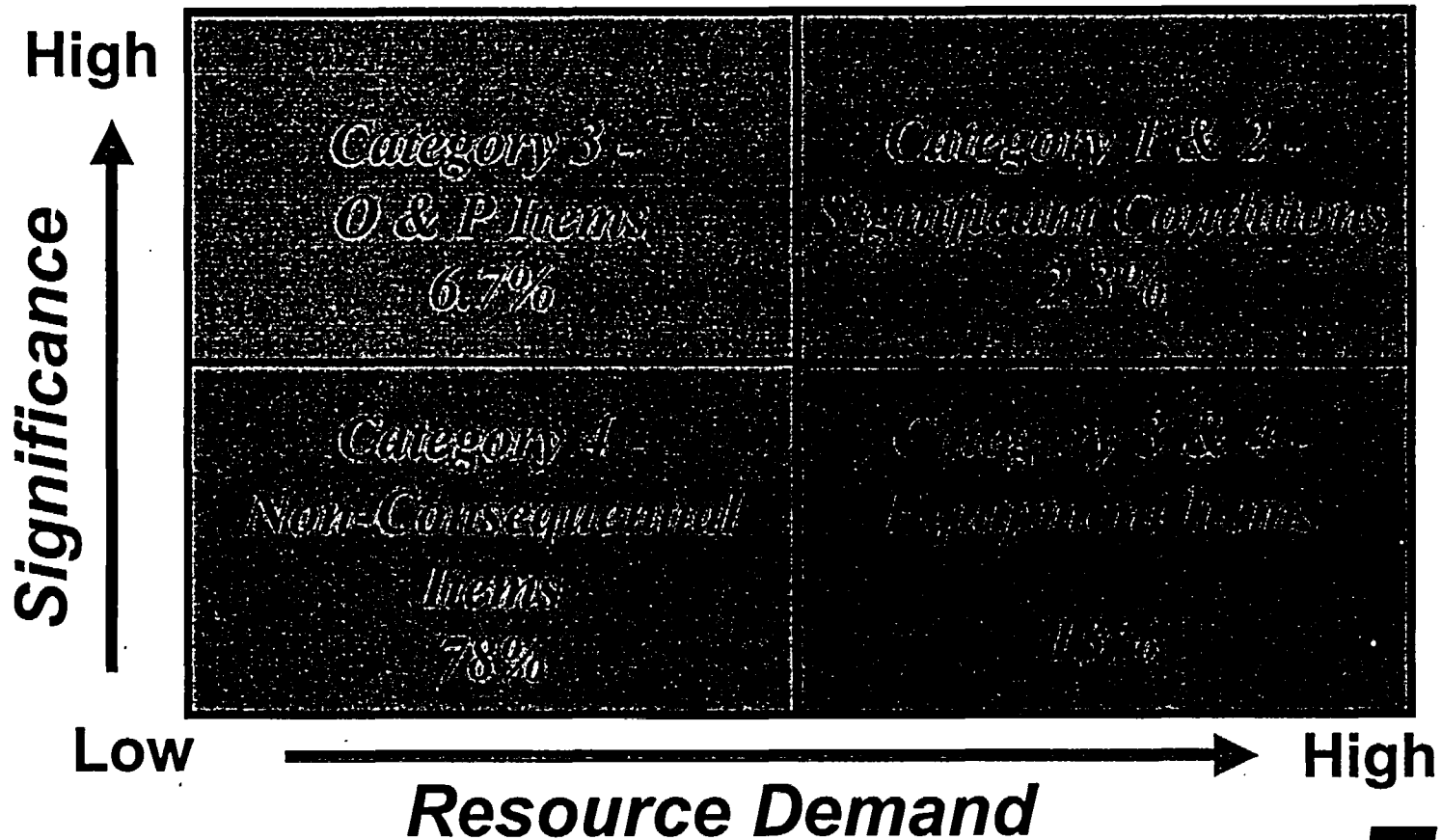
# *Clean-up (Backlogs)*

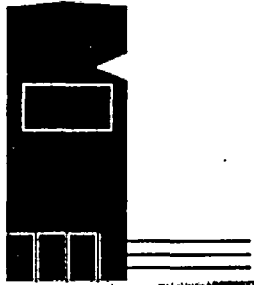
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- **Thoroughly Screened and Inspected During Restart**
- **Backlogs Fall into Three Categories:**
  - **Corrective Action Backlog**
  - **Corrective Maintenance Backlog**
  - **Modification Package Closeout Backlog**



# Clean-up (Backlogs) -- Corrective Action Backlog



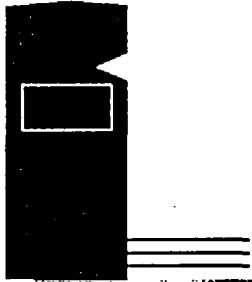


# ***Clean-up (Backlogs) -- Corrective Maintenance Backlog***

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## **■ 4800 Post-Restart Corrective Maintenance Items**

- 455 Job Orders Completed or Duplicates (Cancelled)**
- 2690 Elective Job Orders**
- 1655 Corrective Maintenance Job Orders**



# ***Clean-up (Backlogs) -- Modification Package Closeout Backlog***

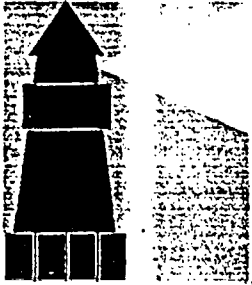
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## **■ Pre-restart Modifications**

- Thoroughly Assessed During Restart**
- Packages With Potential Safety Significance Closed Before Restart**
- Control Room Drawings Updated**
- 428 Packages Closed, ~350 Remain Open**

## **■ Restart Modifications**

- Majority of Open Items Are Drawing Updates**
- Control Room Drawings Updated**
- ~450 Packages Remain Open**

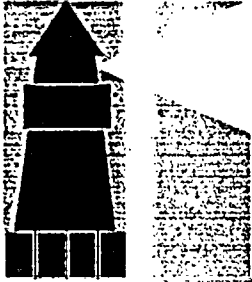


# *Unit 2 Refueling Outage*

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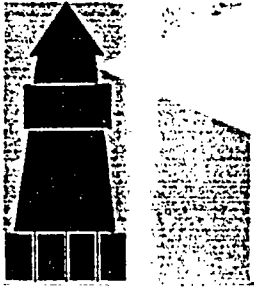
- **Operations Preparation**
- **Engineering Support**
- **Planning & Scheduling**
- **License Changes**





# Unit 2 Refueling Outage -- Outage Related Licensing Issues

| #                           | Subject   | Unit(s) | Final Inputs to Licensing | Submittal Drafted | PORC Meeting | NSDRC Meeting | NRC Submittal Date | NRC Approval/Concurrence Required By |
|-----------------------------|---|---------|---------------------------|-------------------|--------------|---------------|--------------------|--------------------------------------|
| <b>Licensing Submittals</b> |   |         |                           |                   |              |               |                    |                                      |
| 1                           | EDG & Battery Surveillance Requirements   | 2       | Complete                  | Complete          | Complete     | Complete      | Complete           | 6/1/01                               |
| 2                           | Unit 2 Surveillance Extensions  | 2       | TBD                       | TBD               | TBD          | TBD           | 4/23/01            | 7/1/01                               |
| 3                           | Reduce time for reactor to be subcritical prior to movement of fuel in the reactor vessel from 168 hrs. to 100 hrs. | 1&2     | 2/12/01                   | 3/9/01            | 3/28/01      | 4/6/01        | 4/20/01            | Prior to U2 Refueling Outage         |
| 4                           | Remove restriction to stroke crosstie valves for CCW and AFW crosstie during shutdown.                              | 1&2     | Complete                  | 4/5/01            | 4/27/01      | 5/7/01        | 5/15/01            | TBD                                  |
| 5                           | Address requirements for containment closure vs. containment integrity in Modes 5 and 6.                            | 1&2     | 2/28/01                   | 3/28/01           | 4/18/01      | 4/27/01       | 5/3/01             | Prior to U2 Refueling Outage         |



## *Wrap-up*

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- **Safety Remains Our Number 1 Priority**
- **Plants Operating Well**
- **Organization Responding Appropriately**
- **Continuing to Focus on Top Quartile Performance**

