NRC FORM 658
(9-1999)

U.S. NUCLEAR REGULATORY COMMISSION

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Do not include proprietary materials.

DATE OF MEETING
11/13/2000

The attached document(s), which was/were handed out in this meeting, is/are to be placed in the public domain as soon as possible. The minutes of the meeting will be issued in the near future. Following are administrative details regarding this meeting:

Docket Number(s)	**50-390, 50-327, 328, 50-413, 414, 50-369, 370, 50-315, 316**
Plant/Facility Name	**Watts Bar 1, Sequoyah 1 &2, Catawba 1&2, McGuire 1&2, D. C. Coo**
TAC Number(s) (if available)	
Reference Meeting Notice	**Meeting on Ice Concenser Containment Tech Spec Issues**
Purpose of Meeting (copy from meeting notice)	**Meeting with Ice Condenser Mini-Group on methods to verify weight of ice in ice condenser containment plants.**

NAME OF PERSON WHO ISSUED MEETING NOTICE	TITLE
Robert E. Martin	**Senior Project Manager**

OFFICE
Nuclear Reactor Regulation

DIVISION
Division of Licensing Project Management

BRANCH
PD II-2

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Docket File/Central File
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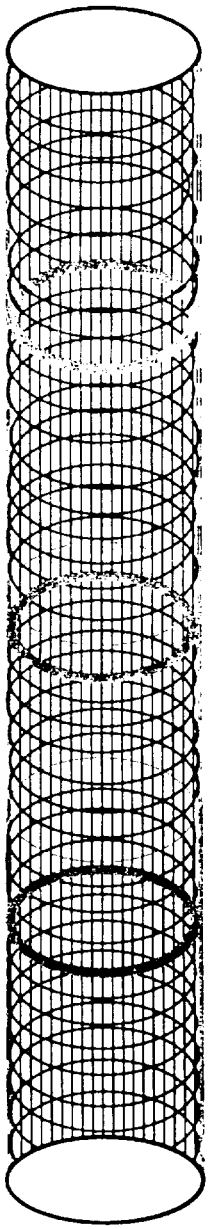
DF01

Ice Condenser Technical Specification Improvement Initiative

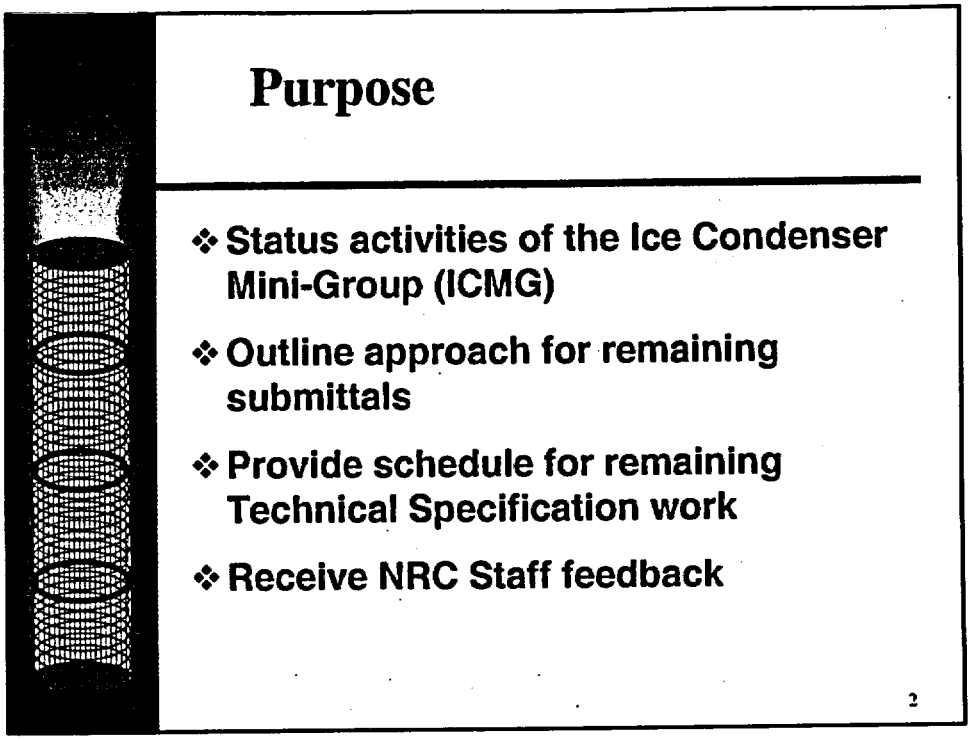


AEP - Duke - TVA

NRC Meeting

November 13, 2000

Washington, DC


Purpose
❖ Status activities of the Ice Condenser Mini-Group (ICMG)
❖ Outline approach for remaining submittals
❖ Provide schedule for remaining Technical Specification work
❖ Receive NRC Staff feedback
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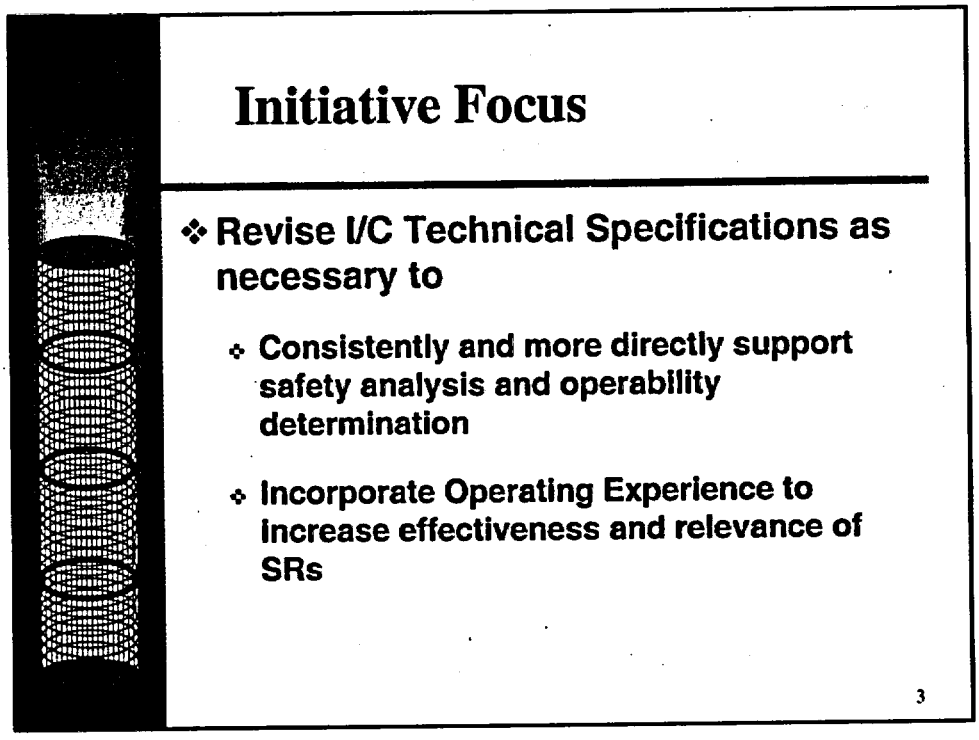
Initiative Focus
❖ Revise I/C Technical Specifications as necessary to
❖ Consistently and more directly support safety analysis and operability determination
❖ Incorporate Operating Experience to increase effectiveness and relevance of SRs
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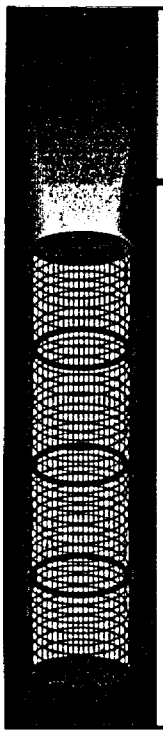

NRC Meetings

- Initial meeting February 25, 1999
- First Update August 11, 1999
- Second Update November 13, 2000
- Final Project Summary Fall 2001

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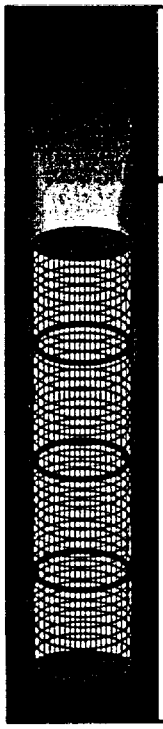

Technical Specification Issues

- Ice Weight and Distribution
- Flow Channel Inspection
- Boron and pH Sampling
- Ice Condenser Doors
- Ice Basket Structural Integrity
- Other I/C-Related TSs

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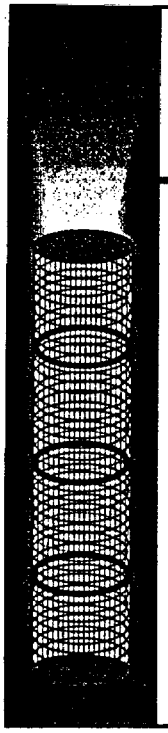

Project Status

- Ice Weight and Distribution (previously TSTF-335)
  - ICMG submitted proposed TSTF to NEI on 5/4/99
  - ICMG "lead plant" amendment proposal submitted by Sequoyah to NRC on 6/24/99
  - NRC rejected ICMG / TVA proposed TSTF and amendment on 12/9/99
  - ICMG / TVA withdrew amendment proposal on 6/9/2000

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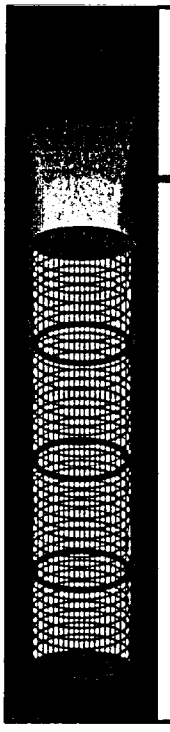

Ice Weight / Distribution
Current State

- Surveillance Requirement (SR) focused on as-left conditions of each basket
- Ice replenishment is determined based on historical and as-found data to achieve proper as-left condition
- Ice Bed operating characteristics challenge the provisions of the SR
  - Unliftable (stuck) baskets is the predominant challenge

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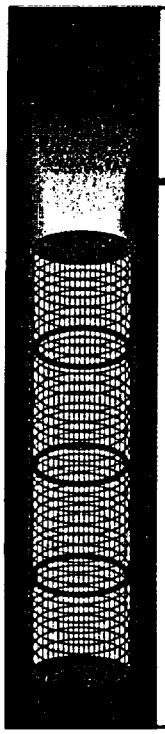

Ice Weight / Distribution
Proposed Future State

- SR becomes as-found validation of operability for ice bed
  - Sampling plan is designed to effectively address unliftable baskets
- Ice Management plan dictates outage ice replenishment activities

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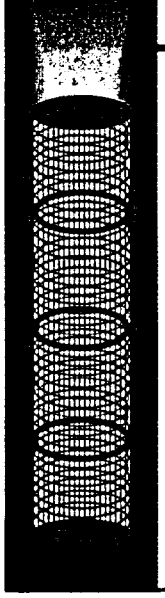

Ice Weight / Distribution
Proposed Future State (continued)

- Surveillance Requirement Scope
  - Ice bed divided into radial "zones"
  - Zones defined to segregate ice bed physical behaviors
  - Required total ice weight and distribution assured by zone/group surveillances

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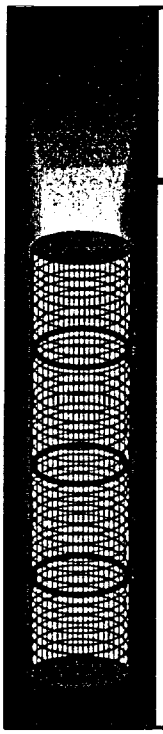

Ice Weight / Distribution

Proposed Future State (continued)

- Surveillance Requirement Basis
  - Each zone has specific sampling plan
  - Sampling plan methodology incorporates strengthened statistical practices
  - Uniform or Asymmetric ice bed configurations would be supported
  - Alternative weight determination techniques are under development

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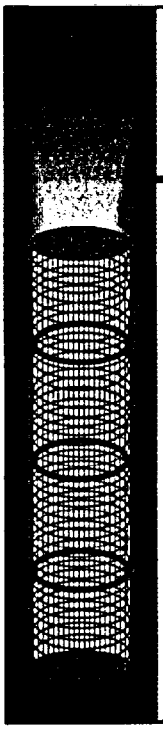

Ice Weight / Distribution

Proposed Future State (continued)

- Ice Management Plan Scope
  - Projection based
    - Base-lined by historical sublimation rates
      - Evaluating relevance / application of ICMG consolidated data to individual ice beds
    - Validated by recent, accurate weight data
    - Verified by visual inspection for confirmation of ice bed conditions (i.e., no anomalies)
  - Accurately projects beginning of fuel cycle ice bed sublimation allowance

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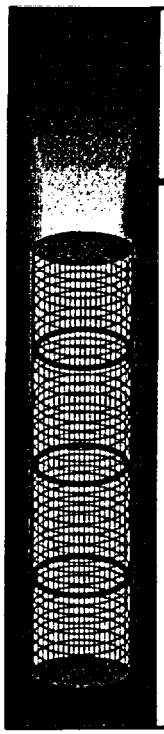

Ice Weight / Distribution
Proposed Future State (continued)

- Ice Management Plan Scope (cont'd)
  - ICEMAN™
    - ICE Condenser MANagement system designed by Duke Energy Corporation and written by Framatome Technologies
    - Provides for scheduling and managing ice basket replenishment activities
    - Provides database management for ice weight data and ice basket configurations

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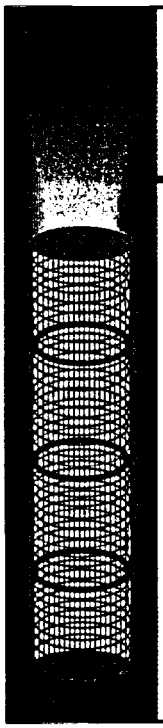

Ice Weight / Distribution
Proposed Future State (continued)

- Licensing Basis Framework
  - Surveillance Requirement
    - Contains as-found ice weight and distribution operability requirement
    - SR Bases describes Sampling Plan
    - Sampling plan supported by Topical Report
      - Includes acceptable statistical practices
      - Includes validated alternate weighing techniques

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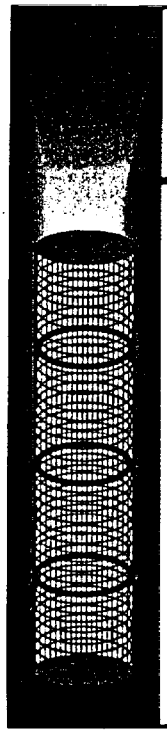

Ice Weight / Distribution
Proposed Future State (continued)

- **Licensing Basis Framework** (cont'd)
  - **Ice Management Plan**
    - **Contains commitments for dictating ice basket replenishment activities**
    - **Contained in licensee controlled document (e.g., UFSAR, Technical Requirements Manual)**
      - **Utilizes software (*ICEMAN™*) qualified per Licensee's Quality Assurance Program (10 CFR 50 Appendix B)**

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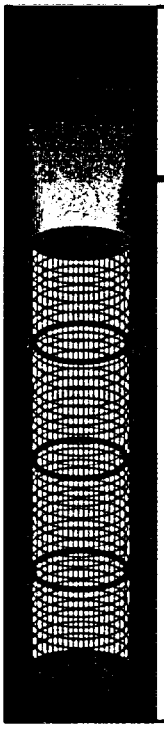

Ice Weight / Distribution
Proposed Future State (continued)

- **Continued ICMG progress will benefit from early NRC staff feedback**
  - **Questions ???**
  - **Comment !!!**

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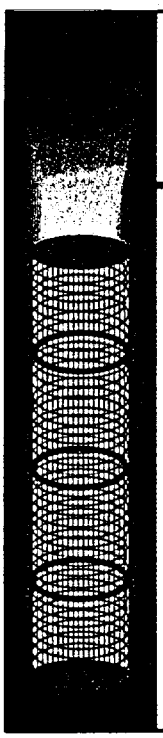

Project Status (continued)

- Flow Channel Inspection (TSTF-336)
  - ICMG submitted proposed TSTF to NEI on 4/30/99
  - Watts Bar proposed amendment submitted to NRC on 7/19/99
  - NRC approved Watts Bar proposal on 7/18/2000
  - NRC approved TSTF-336, Revision 1 on 7/28/2000

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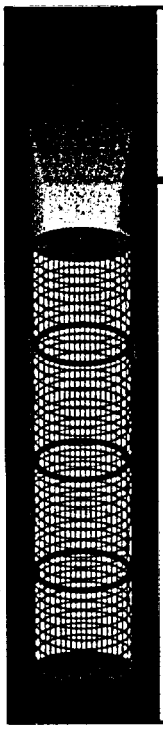

Project Status (continued)

- Boron & pH Sampling (TSTF-356)
  - ICMG submitted proposed TSTF to NEI on 7/30/99
  - Watts Bar proposed amendment submitted to NRC on 11/15/99
  - NRC approved TSTF-356, Revision 1 on 3/7/2000
  - NRC approved Watts Bar proposal on 3/21/2000

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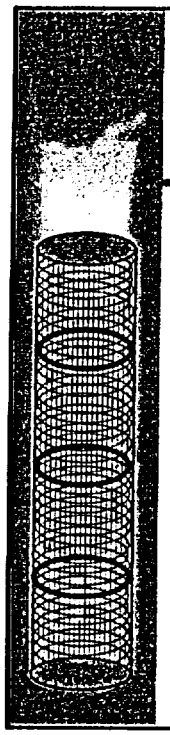

Project Status (continued)

- Ice Condenser Doors
  - ICMG determined TS is acceptable as-is; no amendment planned
  - ICMG has elected not to pursue consolidation of door functional capabilities

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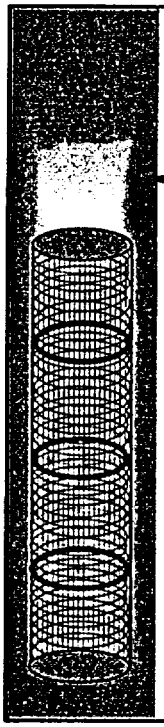

Project Status (continued)

- Ice Basket Structural Integrity
  - ICMG determined SR is acceptable as-is; no amendment planned
  - TS Bases to be changed via TSTF submittal to remove 12-foot lift requirement from Standard TS

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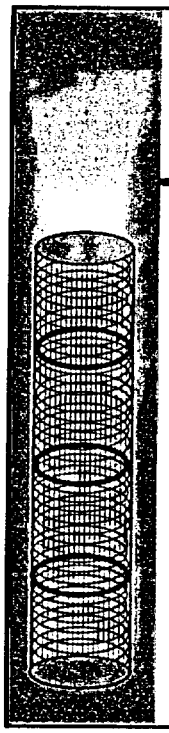

Project Status (continued)

- Other I/C-related TSs
  - ICMG reviewed remaining SRs in scope
    - Ice Bed Temperature
    - Divider Barrier Seal
    - I/C Floor Drains
  - No ICMG consistency concerns identified; no amendments planned

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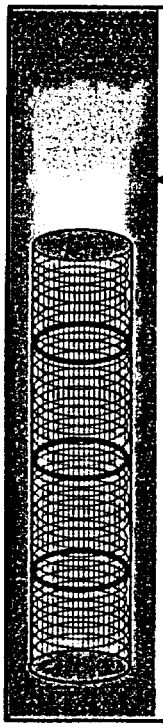

Remaining Submittals

- ICMG TSTFs to NEI
  - Ice Basket Structural Integrity Basis Change
    - Lead plant: AEP/Cook - Summer 2001
  - Ice Weight and Distribution
    - Lead plant: TVA/Sequoyah - Summer 2001

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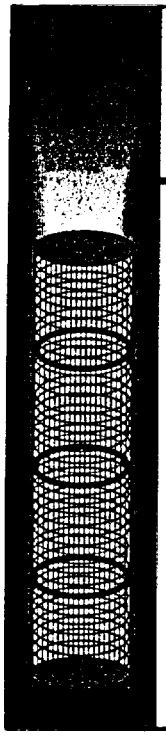

Remaining Submittals (continued)

- Submittals to adopt approved TSTFs
  - Flow Channel Inspection (TSTF-336)
    - Cook - Post Restart
    - Catawba & McGuire - Spring 2001
    - Sequoyah - Spring 2001
    - Watts Bar - Complete
  - Boron and pH Sampling (TSTF-356)
    - Cook - Post Restart
    - Catawba & McGuire - Spring 2001
    - Sequoyah - Spring 2001
    - Watts Bar - Complete

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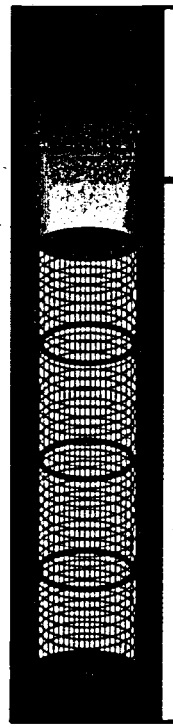

Project Termination Criteria

- All TSTFs Approved by NEI/NRC
- Each utility dockets commitment for individual submittal schedules to implement approved TSTFs
- Close-out Meeting with NRC
- EOY 2001 expected termination

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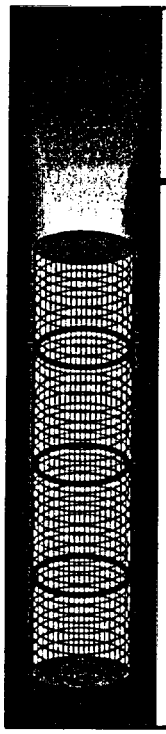

Conclusion

- Progress continues in obtaining consistent I/C TSs
- Project completion plans are in place
- Goal of consistent demonstration of ice condenser operability will be achieved at completion of project

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Ice Bed Weight History

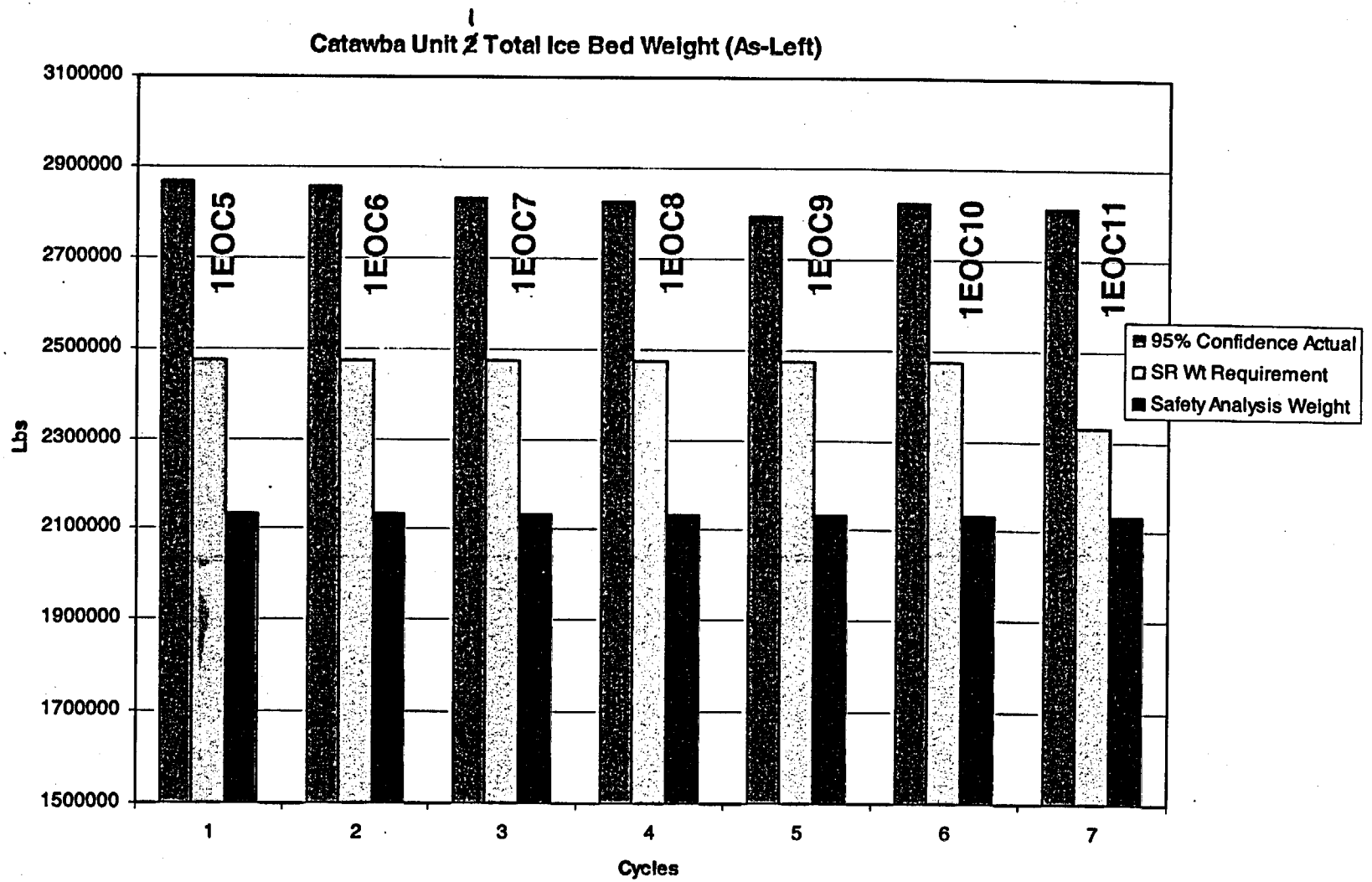
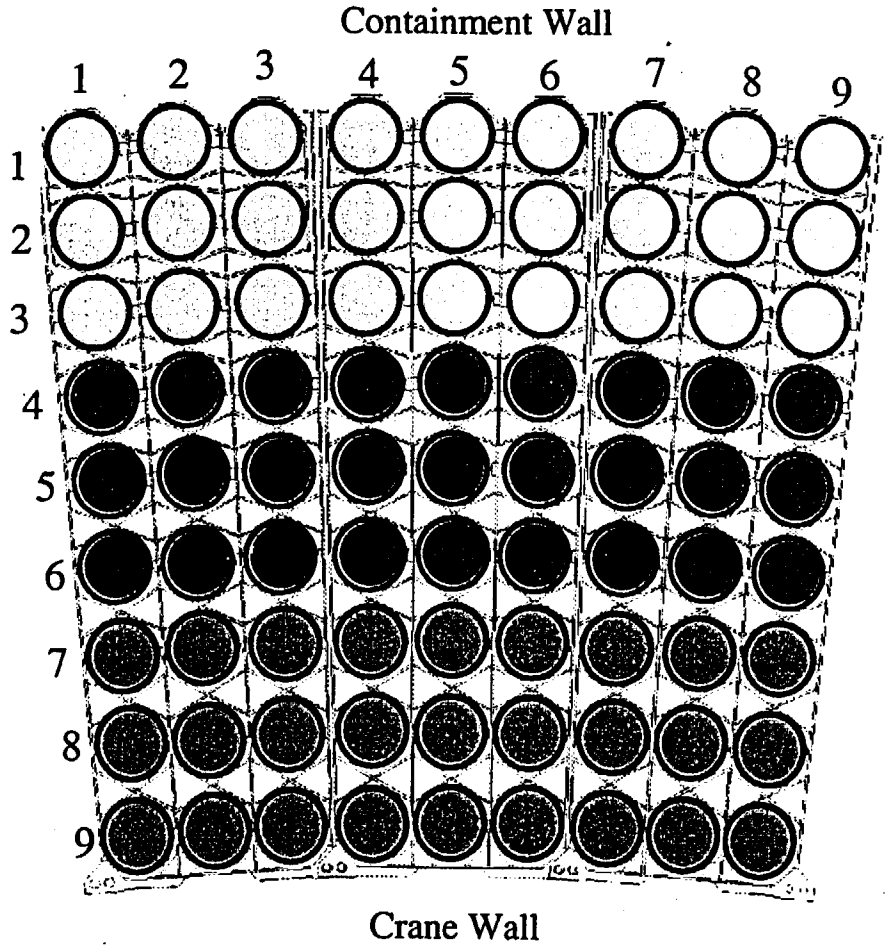


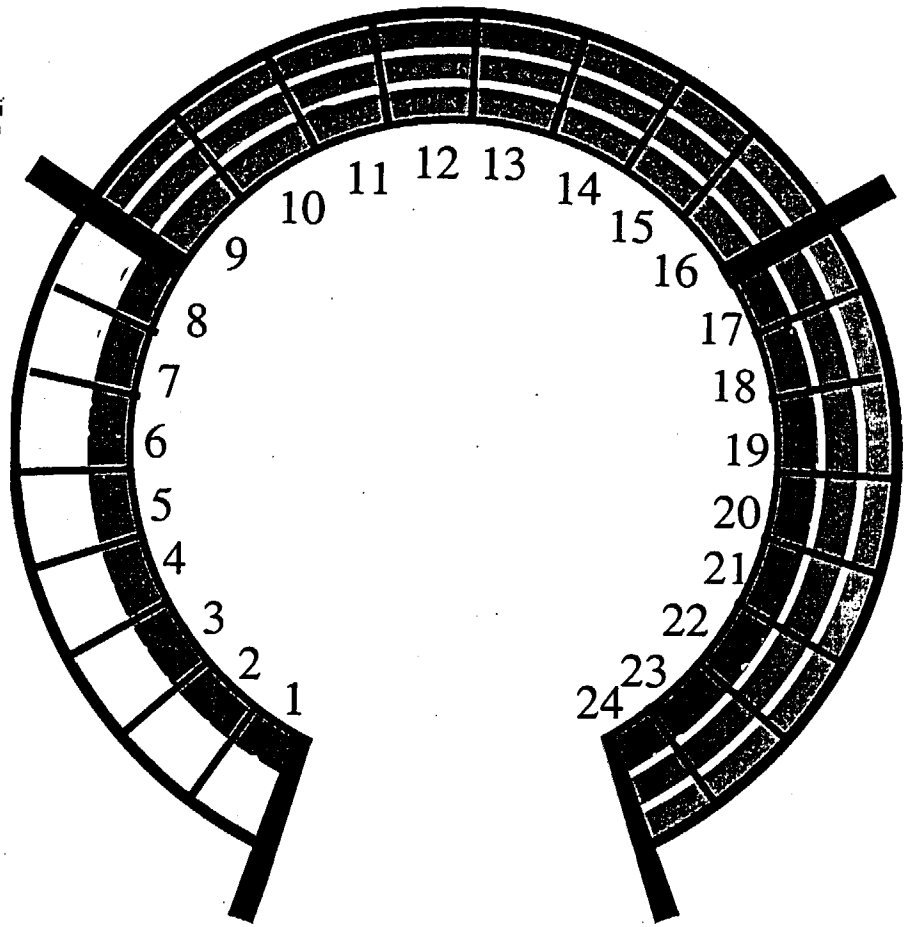
Figure - 1

RADIAL ZONES



Top View of Bay
Basket Configuration

ZONE / GROUP



Top View of Ice Bed
Bay Configuration

Figure - 2

Conceptual Ice Weight Sampling Plan Strategy

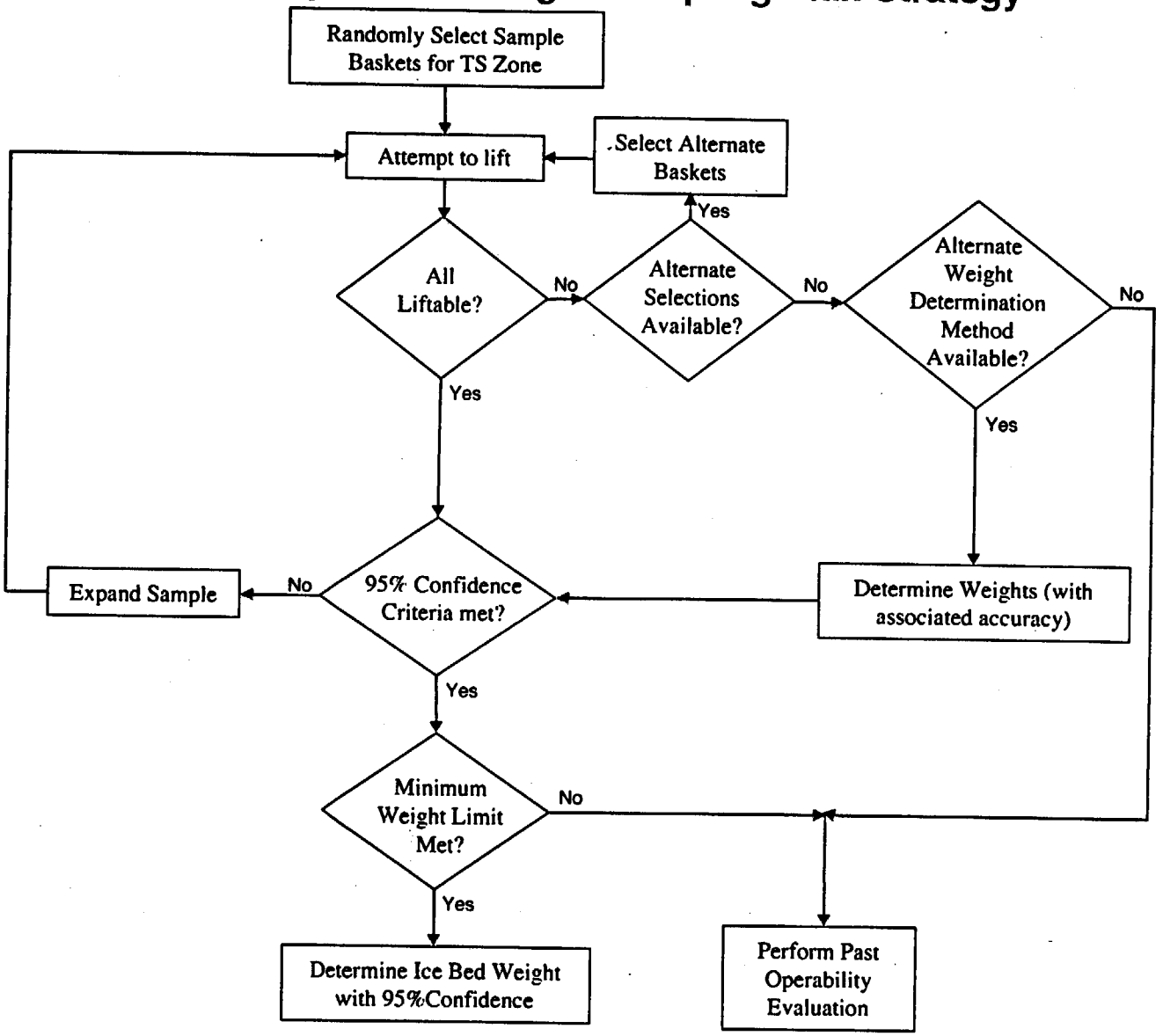


Figure - 3

Individual Basket Ice Weight Projection

McGuire Unit 2, Bay 10, Row 7, Column 6
(for example only)

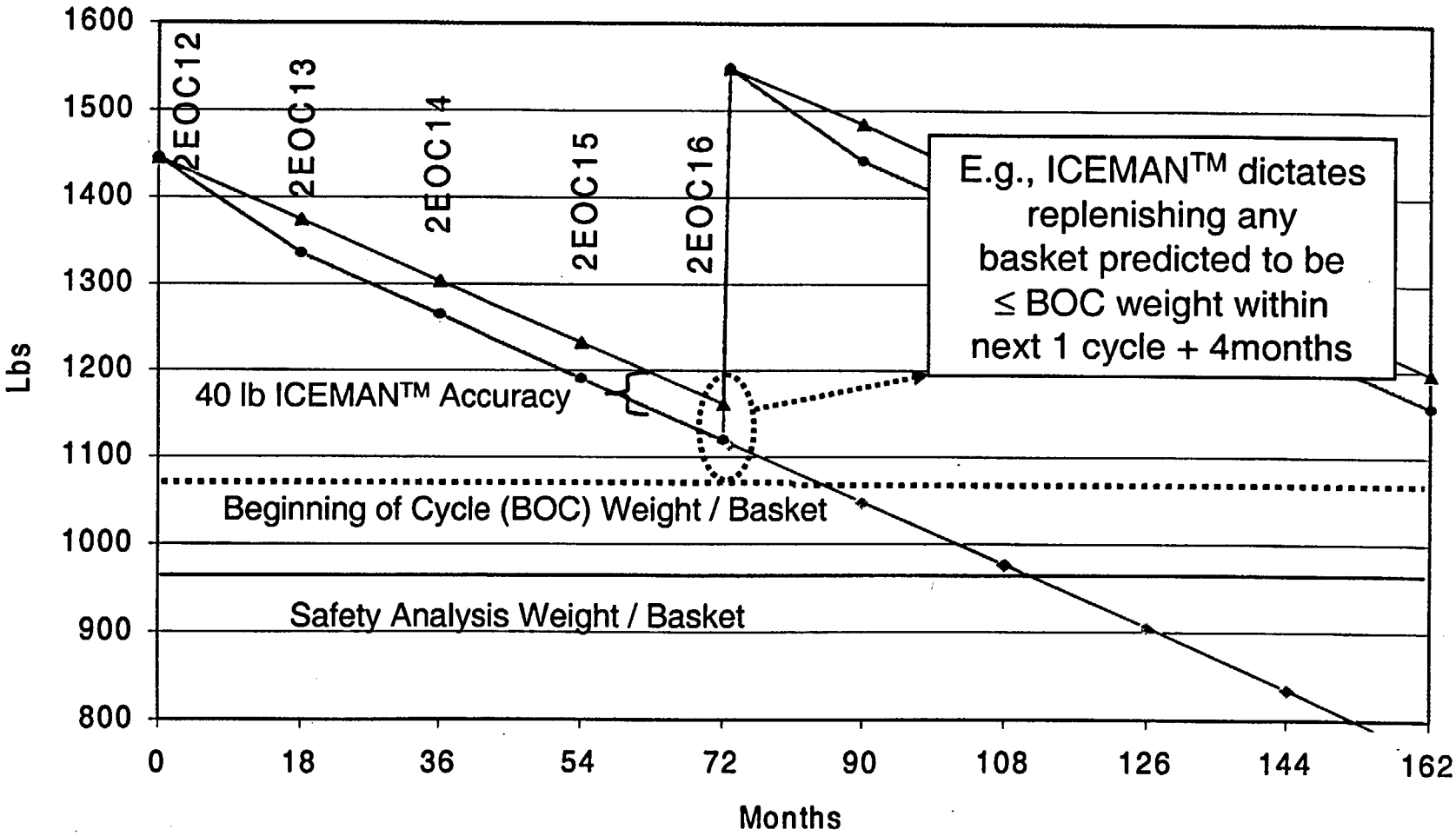


Figure - 4

Ice Bed Ice Weight Projection

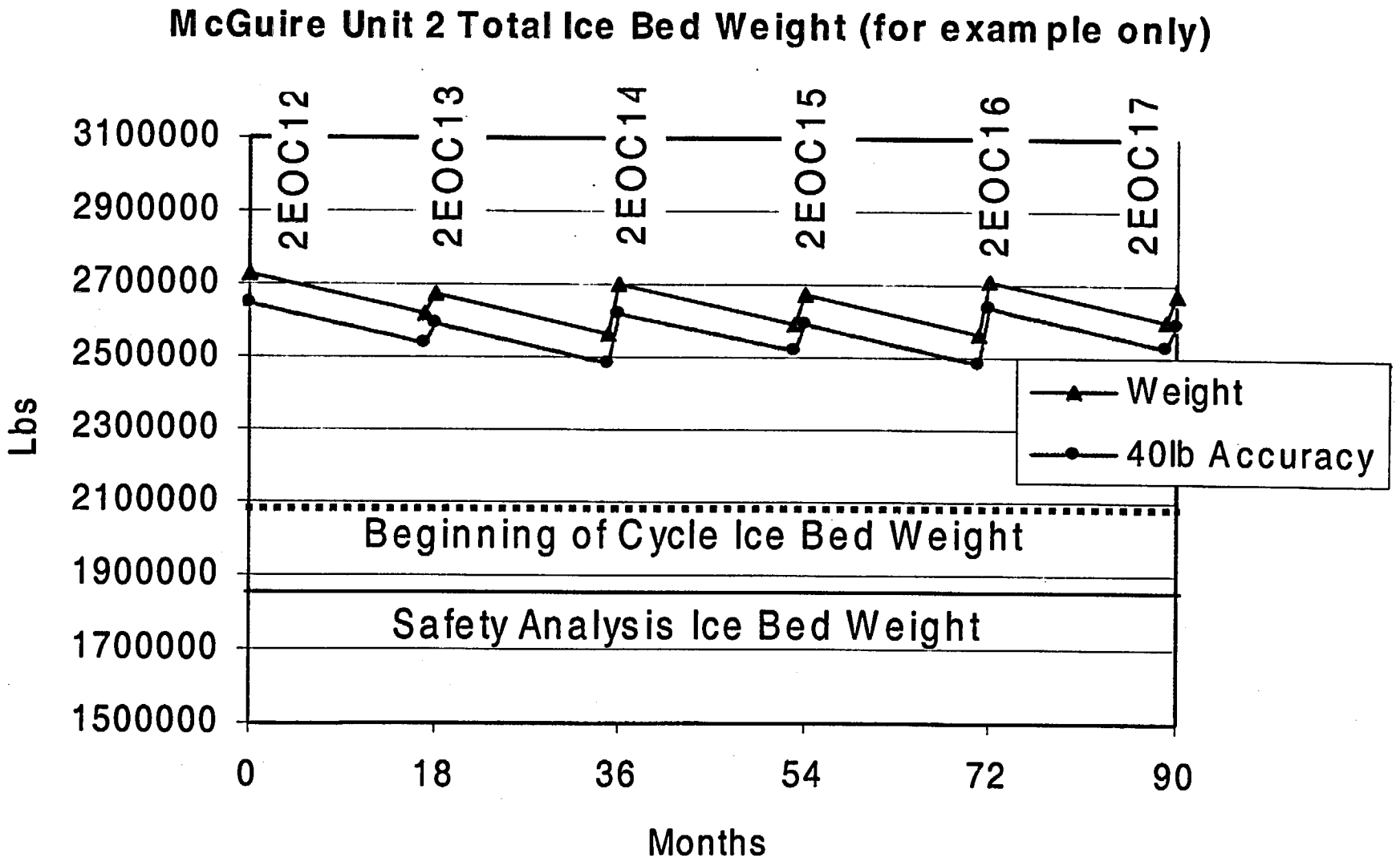


Figure - 5