

# CATEGORY 2

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50-316 Donald C. Cook Nuclear Power Plant, Unit 2, Indiana M 05000316  
AUTH. NAME                      AUTHOR AFFILIATION  
BURGESS, B.L.                    Region 3 (Post 820201)  
RECIP. NAME                      RECIPIENT AFFILIATION  
SAMPSON, J.                      American Electric Power Co., Inc.

*See Meeting  
Summaries*

SUBJECT: Submits summary of 980709 meeting w/util re progress toward resolving issues necessary for startup. Summary version of restart master schedule & list of attendees encl.

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TITLE: Summary of Significant Meeting with Licensee (Part 50)

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UNITED STATES  
NUCLEAR REGULATORY COMMISSION

REGION III  
801 WARRENVILLE ROAD  
LISLE, ILLINOIS 60532-4351

*Public*

July 15, 1998

Mr. John Sampson  
Site Vice President  
Nuclear Generation Group  
American Electric Power Company  
500 Circle Drive  
Buchanan, MI 49107-1395

SUBJECT: SUMMARY OF THE JULY 9, 1998, PUBLIC MEETING TO DISCUSS D. C. COOK  
RESTART ACTIVITIES

Dear Mr. Sampson:

This letter refers to a meeting held between the NRC and Donald C. Cook plant staff to discuss your progress toward resolving those issues necessary for plant startup conducted on July 9, 1998. This meeting was open to public observation. The meeting started with a presentation of the restart plan master schedule. You indicated that changes may be necessary to the master schedule as lower tier schedules are finalized or as additional information is received from restart plant activities. The NRC requested a complete set of schedules when available. A summary version of the restart plan master schedule is contained in Enclosure 2 to this letter.

During the meeting, your staff discussed the status of the startup plan and reiterated that the discovery phase or Phase 1 of the restart plan is complete. This phase involved system readiness reviews of 21 safety systems and programmatic and functional assessments of selected areas, including corrective action, design, design change impact, operations, and maintenance. The results of functional and area assessments continue to be reviewed by the Restart Oversight Committee for determination of plant restart items.

The status of Phase 2 of the restart plan was discussed. Phase 2 consists of the actual work activities needed for plant restart. To date, approximately 447 items have been assessed as restart issues, with additional items expected from the completion of the functional and programmatic assessments. During the meeting, a new aspect of the restart plan was introduced as Phase 3. Phase 3 involves a compilation of all of the documentation generated by the completion of activities performed to close a restart issue. Your staff indicated that restart closure packages will be contained in a central file location that will provide access for inspection and review activities. Phase 4 has now been designated for those activities that comprise actual plant startup.

//  
//

D. C. Cook licensing and engineering personnel also discussed those activities requiring NRC licensing or review prior to plant restart. To date, only two items involved Technical Specification amendments. These amendments involved wording changes to the specification for the hydrogen recombiners and the reinstatement of the specifications for the boric acid concentration reduction initiative. Both amendments have been submitted for NRC review. Other issues discussed that may involve Technical Specification amendments include diesel generator cable routing, containment spray pump vibration, containment sump pH, and reanalysis of containment post accident conditions, including hydrogen analysis by Westinghouse.

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I-401*

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9807220151 980715  
PDR ADOCK 05000315  
P PDR

J. Sampson

-2-

A status of ice condenser work was also presented and the issues associated with the independent review of the containment spray system were also discussed. Your staff indicated that the use of operability evaluations performed in accordance with Generic Letter 91-18 or the completion of a 10 CFR 50.59 safety evaluation may be needed. The NRC requested and you committed to provide the NRC with documentation for any operability or safety evaluations completed prior to plant startup.

Enclosure 1 is a list of meeting attendees. Enclosure 2 contains the handout provided to the NRC during the meeting.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosures will be placed in the NRC Public Document Room.

Sincerely,



Bruce L. Burgess, Chief  
Reactor Projects Branch 6

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

Enclosures: 1. Meeting Attendees  
2. Meeting Handout

cc w/encs: Don Hafer, Acting Chief  
Nuclear Engineer  
Douglas Cooper, Plant Manager  
Richard Whale, Michigan Public  
Service Commission  
Michigan Department of  
Environmental Quality  
Emergency Management  
Division, MI Department  
of State Police  
David A. Lochbaum, Union  
of Concerned Scientists

J. Sampson

-2-

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Original signed by

Bruce L. Burgess, Chief  
Reactor Projects Branch 6

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Service Commission  
Michigan Department of  
Environmental Quality  
Emergency Management  
Division, MI Department  
of State Police  
David A. Lochbaum, Union  
of Concerned Scientists

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NAME	Burgess/ml		Bellamy/bjw				
DATE	7/15/98		7/15/98				

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\* Per E-Mail on 7/15/98

J. Sampson

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GREENS

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COOK NUCLEAR PLANT  
RESTART MEETING ATTENDANCE LIST  
JUNE 9, 1998

NRC

James Caldwell  
Ron Bellamy  
Bruce Burgess  
Bruce Bartlett  
Brian Fuller

PUBLIC

Joseph Gallo (Gallo and Ross)  
Dan Salter (HGP)  
Gene Poletto (DES)

AEP

John Sampson  
Doug Cooper  
Steve Brewer  
Don Hafer  
Paul Barrett  
John Boesch  
Ken Baker  
Dave Powell  
Paul Schoepf  
Phil Gora  
Mark Ackerman  
Mark Kelly  
Jeremy Euto  
Tom Kratt  
Bill Schalk  
Jeb Kingseed  
Gary Weber  
Roger Rickman  
Bo Smith  
Denny Willemin  
Kathy McLaughlin  
Mark Mitch  
Gary Proulx  
Joel Gebbie  
Dan Boston  
Mike Finissi  
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Gordon Allen  
Jim Tyler  
John Schrader  
Byron Bradley

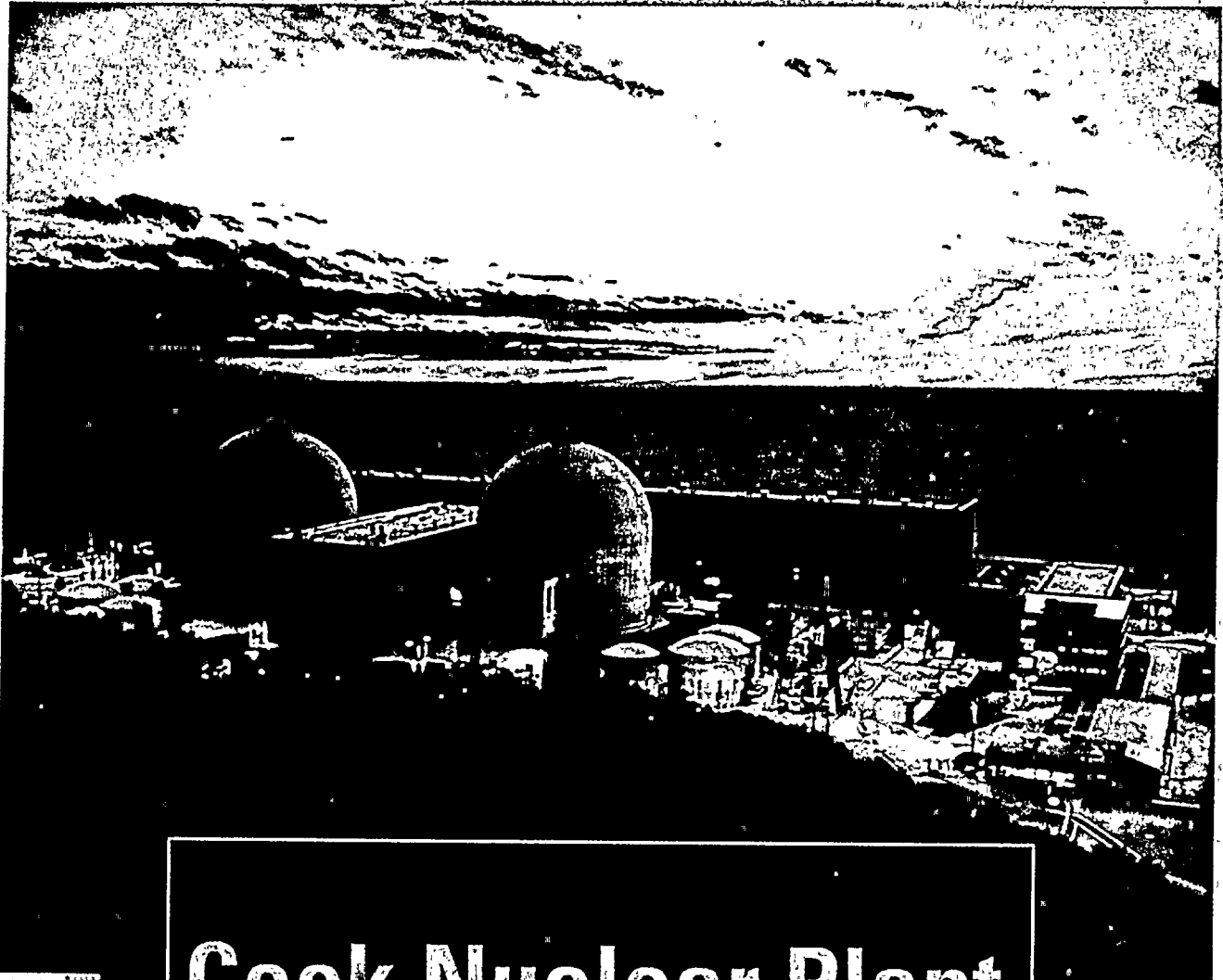
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Bob Heathcote  
Jay Kovarik  
David Walker  
Brent Auer  
David Bublick  
Bart Benjamin  
Darryl Lynch  
Tim Schlimpert  
Bob Smith  
Guy Tollas  
Doug Burris  
Doug Mason  
Jack Rutkowski  
Wayne Walschof  
Terry Postlewait  
Steve DeLong  
Frank Pisarsky  
Scott Kelley  
Dave Kosonovich  
Richard Strasser  
Thomas Craven  
Rod Simms  
Mickey Bellville  
Keith Steinmetz  
Gordon Arent  
Tom Quaka





Maintenance Rule Risk Significant System (sorted by risk significance)	Also SERB System
ESW	X
CCW	X
RPS & ESFAS (counts as 2)	X
RHR	X
EDG/EDGS	X
OFFSITE POWER	<i>Not reviewed</i>
AFW	X
CTS	X
CONTROL AIR & PLANT AIR (counts as 2)	X
250 VDC	X
ACCUMULATORS	X
SI	X
RCS PRESSURE RELIEF	X
CHARGING	X
4 kV	X
NESW	X
120 VAC	x (also CRIDs)
MAIN STEAM	X
600 VAC	X
<i>Not reviewed</i>	AIR Recirc / Hydrogen Skimmers
<i>Not reviewed</i>	Containment
<i>Not reviewed</i>	Ice Condenser



# Cook Nuclear Plant Nuclear Generation Group

Restart Meeting

July 9, 1998



*AEP: America's Energy Partner*

# PRESENTATIONS

- Restart plan status (P. Gora)
- NRC submittals (M. Kelly)
- Ice condenser status (P. Schoepf)
- Containment spray status (D. Powell)
- Programmatic assessment
  - calculations (K. Baker)
- Functional area assessments
  - production engineering (K. Baker)
  - maintenance (J. Boesch)

# RESTART PLAN STATUS

Phillip Gora



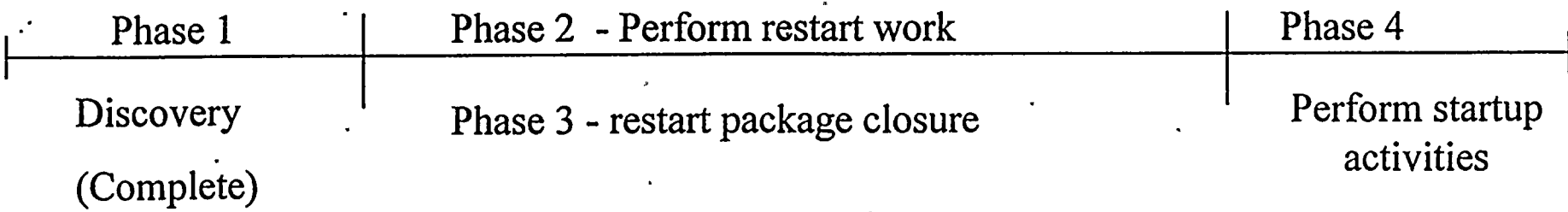
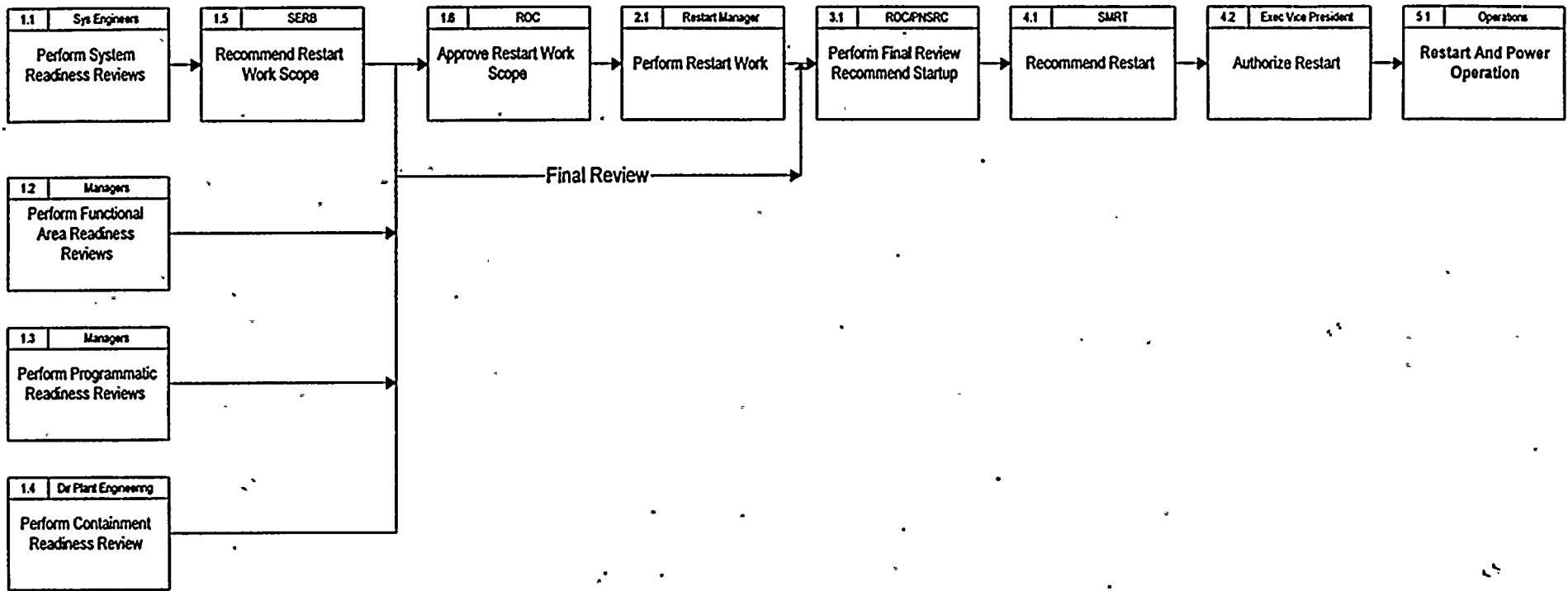
# RESTART VISION

- Develop the "right picture" for our people, programs, and plant
- Leverage the lessons learned and values acquired during restart to succeed in the future
- Instill a culture of individual accountability and teamwork for identifying and addressing problems
- Perform the corrective and preventive maintenance activities and surveillances required to effectively operate the plant through the next fuel cycle
- Develop a thorough understanding of the importance of maintaining and controlling our design and licensing basis
- Maintain a healthy workforce that is committed to the future success of Cook Nuclear Plant
- Make effective use of our financial and time resources



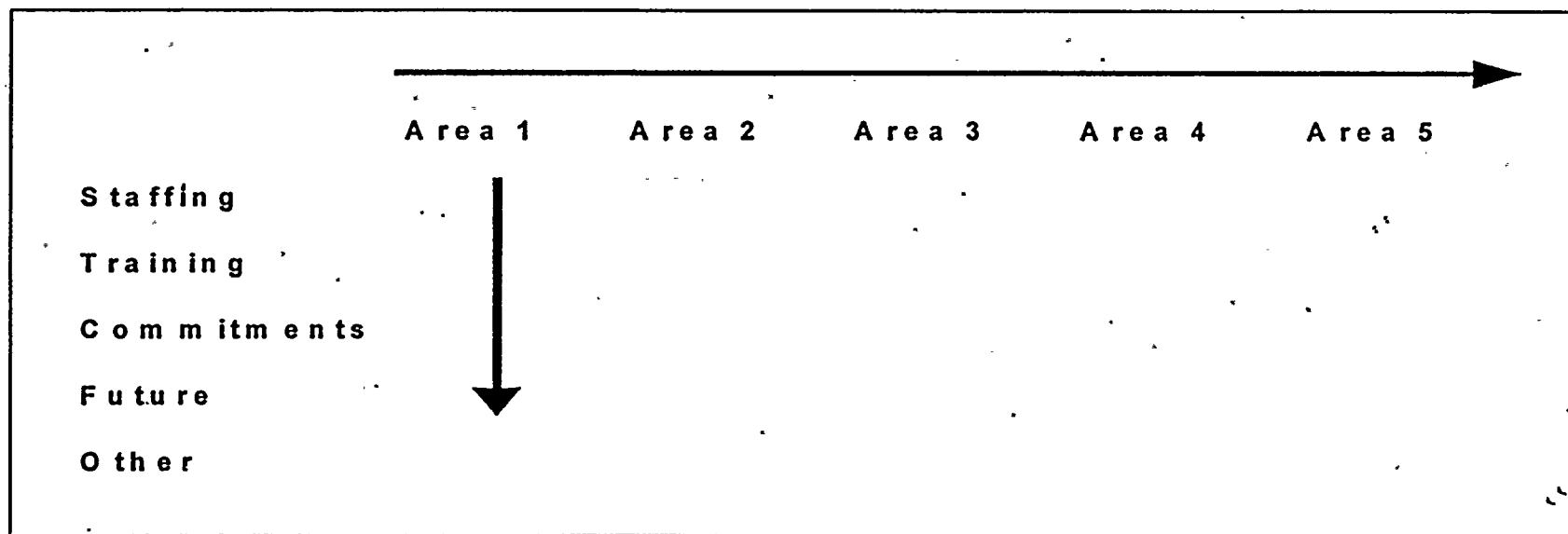


# RESTART PROCESS



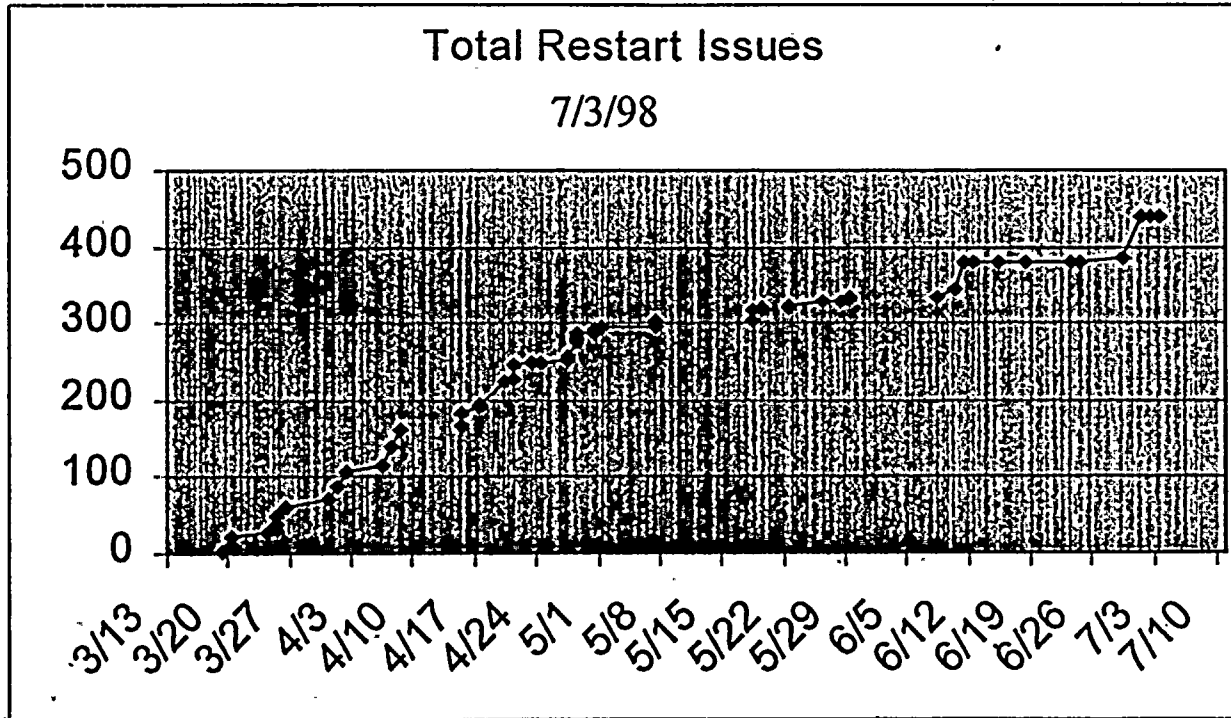
# PHASE 1 - DISCOVERY

## TYPICAL FUNCTIONAL AREA ASSESSMENT





# PHASE 2 - RESTART WORK



System and containment assessments	336
Programmatic assessments	15
Functional assessments	93
Regulatory	<u>3</u>
<b>Total restart issues</b>	<b>447</b>



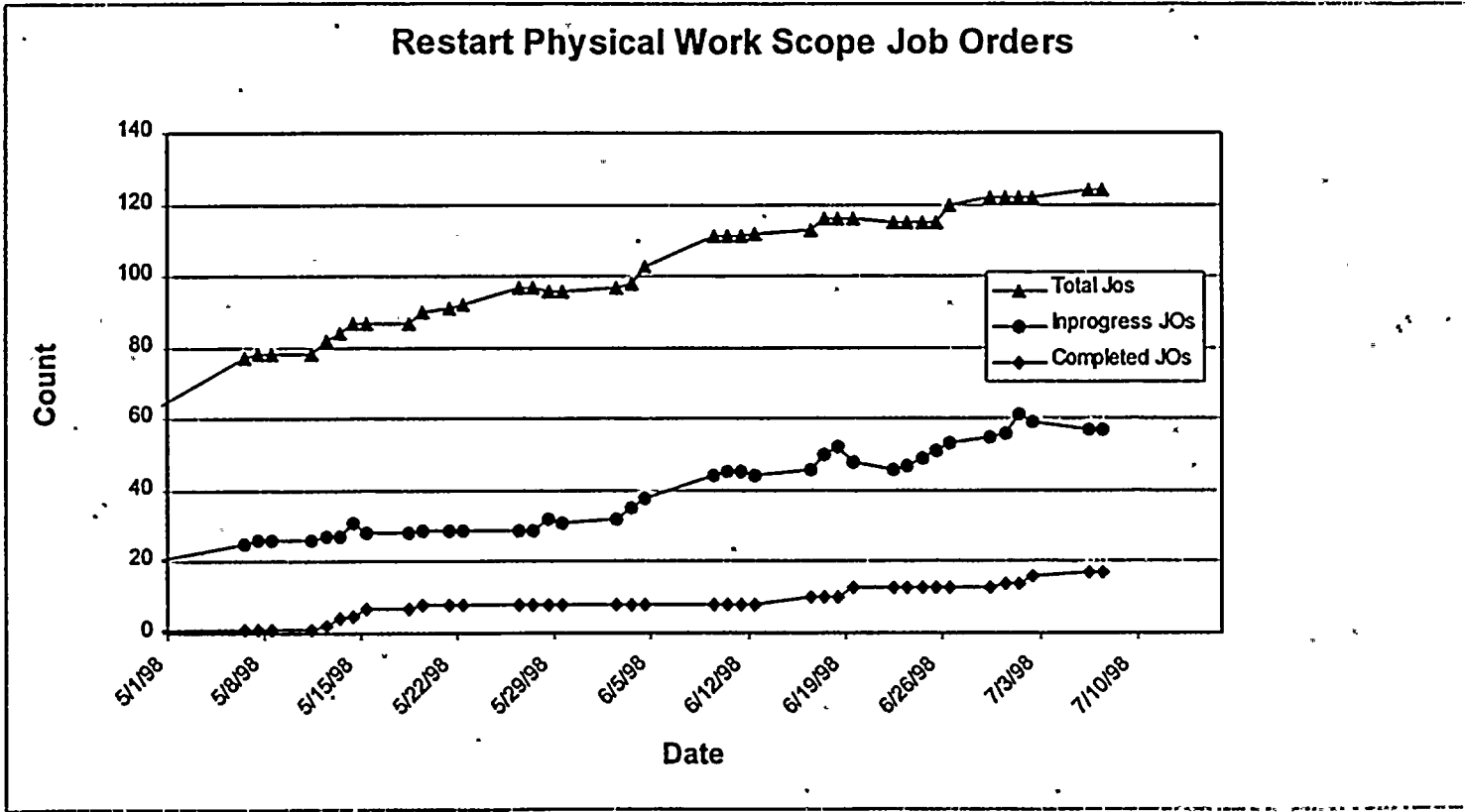
# RESTART FOCUS ITEMS

2.1	Restart Manager
Perform Restart Work	

- Ice condenser
- Containment spray
- Cable issues

2.1	Restart Manager
Perform Restart Work	

# PHASE 2 - RESTART WORK







# NRC SUBMITTALS

Mark L. Kelly  
Licensing Engineer



# NRC SUBMITTALS

- Hydrogen recombiner
  - removes the term “immediately”
  - submitted March 3, 1998
- Boric acid concentration reduction
  - reinstates previous technical specifications
  - submitted June 10, 1998



# NRC SUBMITTALS

- Surveillance interval extensions
  - steam generator eddy current testing
  - other surveillances
- Response to 2.206/50.54(f) letter
  - docketed revised submittal date
  - July 22, 1998

# POTENTIAL SUBMITTALS

- Issues that may result in submittals
  - cable routing issues
  - containment spray pump vibration
  - sump pH
  - hydrogen analysis
  - Westinghouse safety evaluation (SECL)

*Safety Eval Check List - SD.55*

# ICE CONDENSER STATUS

Paul Schoepf

Mechanical Systems Manager

# ICE CONDENSER STATUS

- History
- Scope
- Schedule logic
- Project status



# HISTORY

## ICE CONDENSER INSPECTION

- Surveillance program
- Maintenance program
- Design basis maintenance
- Corrective action



# HISTORY

## DECISION TO THAW

- Ice weights
- Basket integrity
  - basket damage
  - coupling screws
  - hold down bar welds
- Flow passages
- Debris

# HISTORY

## BROAD CORRECTIVE ACTION

- Thaw ice condenser
  - remove debris, inspect, repair, refurbish, refill
  - baseline materiel condition
  - baseline surveillances
- Reconstitute requirements and bases and incorporate into procedures and practices



# BASKET COUPLING SCREWS

- Problem
  - missing or damaged screws
- Action
  - metallurgical evaluation
  - inspections and reinstallation
  - surveillance and maintenance techniques
  - future inspections
- Result
  - screws installed per design, acceptability confirmed



# BASKET DAMAGE

- Problem
  - dents, folds, ligaments, top rim
- Action
  - “detrimental damage” definition
    - (50.59, design change)
  - inspect, repair, and replace
  - techniques, contractor oversight, training, inspections following future maintenance
- Result
  - basket condition within approved design



# DEBRIS

- Problem
  - foreign material in ice bed
- Action
  - thaw ice condensers, remove debris
  - strict QC on ice production
  - standards, training
  - pre-fill basket inspections
  - oversight
- Result
  - ice beds free of debris



# GLYCOL HANGERS

- Problem
  - design non-conformances
- Action
  - capture as-built information
  - revisit design criteria
  - design change to redefine design criteria
  - potential hanger modifications
- Result
  - glycol support system installed per design



# HOLD DOWN BAR WELDS

- Problem
  - weld failures, latent defects
- Action
  - visual inspections
  - remove basket bottoms
  - non-destructive exams
  - inspection, repair, replacement
- Result
  - hold down bars per design

# FLOOR SLAB

- Problem
  - possibility of water in slab
- Action
  - defrosts
  - examine water content
  - drainage modification
- Result
  - floor ready for freeze



# SHOCK ABSORBERS

- Problem
  - damaged bags, foam, and mesh
- Action
  - removed bags for complete inspection
  - replacing shock absorbers with air boxes (except entrance end wall)
  - future protection, inspection
- Result
  - shock absorbers replaced with later generation design air boxes



# SCHEDULE LOGIC

- Containment preps and temporary systems
- Thaw and clean
- Inspections, refurbishments, and technical issue resolution
- Revisit surveillance basis and procedures
- Chill ice condenser and reload ice
- Final installations and as-left surveillances
- Operability



# SCHEDULE CHALLENGES

- Floor slab
- Glycol hangers
- Ice production
- Ice reload efficiency
- Repair / refurbishment production

# PROJECT STATUS

- Unit 1 ice condenser thawed
  - inspections
  - issue resolution
  - refurbishments
- Ice production and storage
- Surveillance basis research / procedures
- Preparations for unit 2 thaw

# CONTAINMENT SPRAY (CTS) ISSUES RESOLUTION PROJECT

David F. Powell

CTS Issues Resolution Project Manager



# CTS ISSUES RESOLUTION

- Problem: issues challenged CTS design basis
- Sources
  - containment spray SSFI
  - SERB walkdowns and readiness reviews
  - safety analysis upgrades
  - DBD and UFSAR review processes
  - EOP and NOP review processes





# CTS ISSUES RESOLUTION

- Action: assemble interdisciplinary project team
  - source listing of known CTS issues
  - review and prioritize
  - identify potential resolution paths and key decision points
  - identify design change or regulatory involvement required



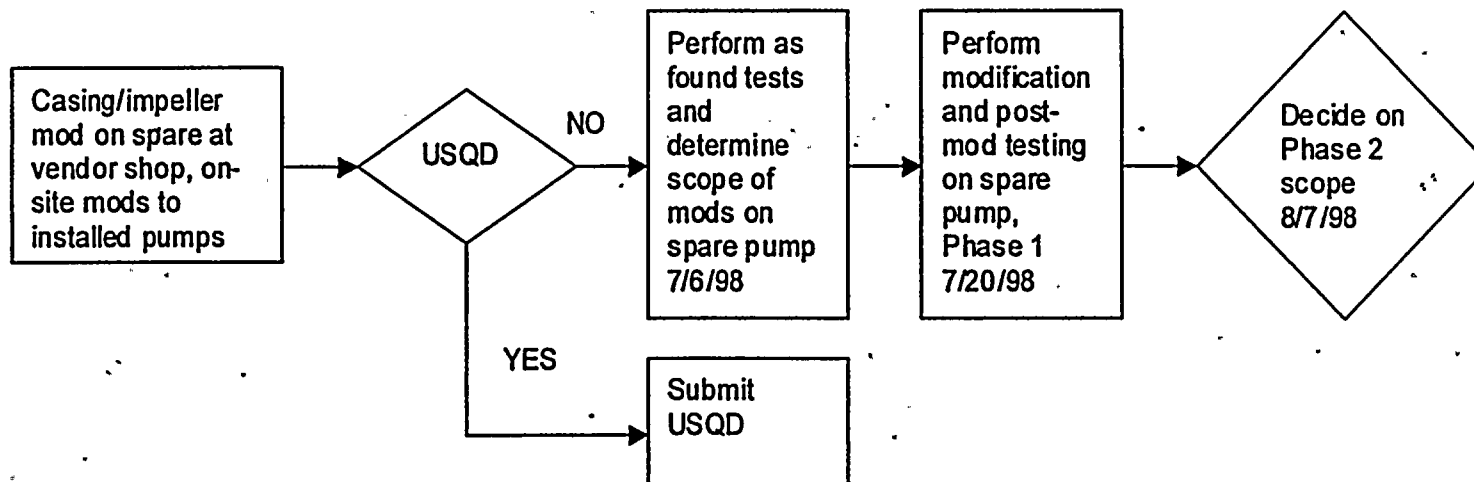
# CTS ISSUES RESOLUTION

- Status: developed decision trees for key CTS issues to aid in resolution and planning
  - project management and communication tool
  - potential long lead items for restart (e.g. design changes or NRC submittals) identified
  - first step towards project plan and schedule when resolution paths are established
- Expected Result: CTS in conformance with design basis



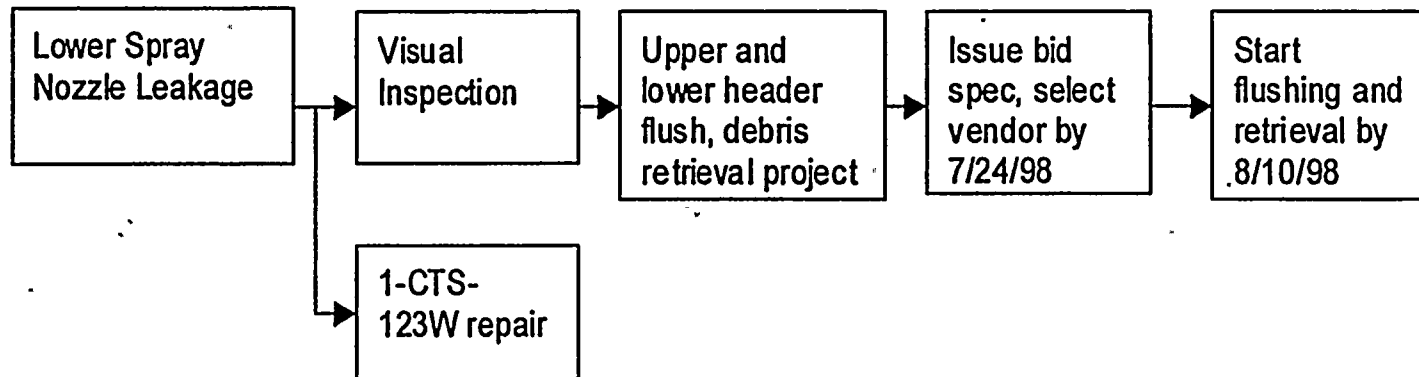
# CTS ISSUES RESOLUTION

## CTS Pump Vibration



# CTS ISSUES RESOLUTION

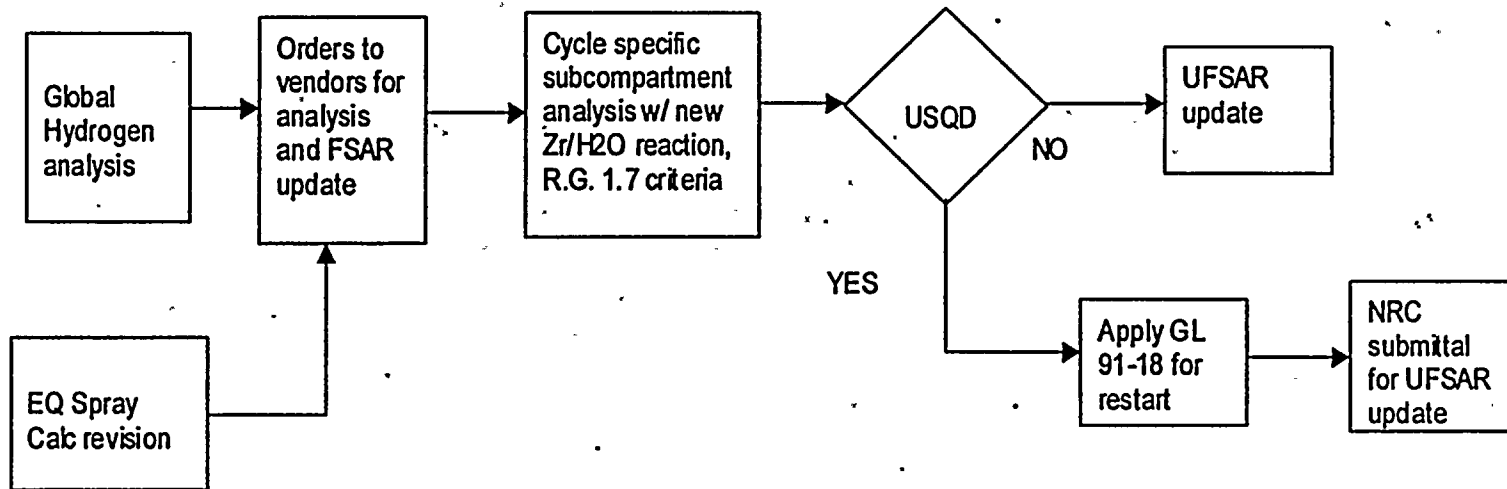
## CTS Header Debris Removal





# CTS ISSUES RESOLUTION

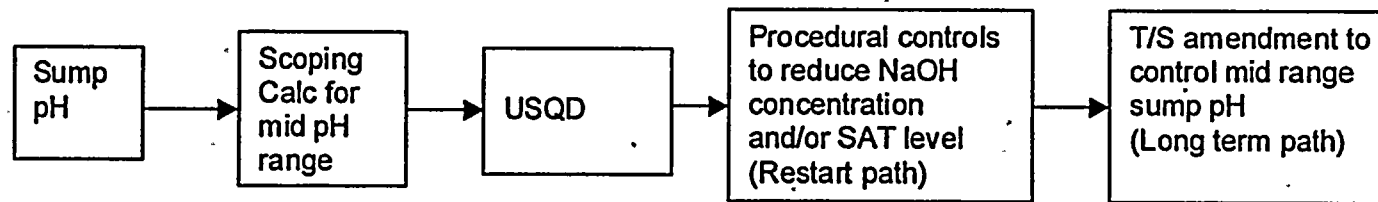
## Hydrogen Analysis Issues





# CTS ISSUES RESOLUTION

## Other Safety Analysis Issues



# CTS ISSUES RESOLUTION

- Future actions
  - establish resolution paths on each issue
  - optimize logic, advance key decision points
  - develop resource loaded project schedule
  - monitor progress, track commitments and remove obstacles

# CALCULATIONS PROGRAMMATIC ASSESSMENT

Kenneth R. Baker

Director of Production Engineering



# INTRODUCTION

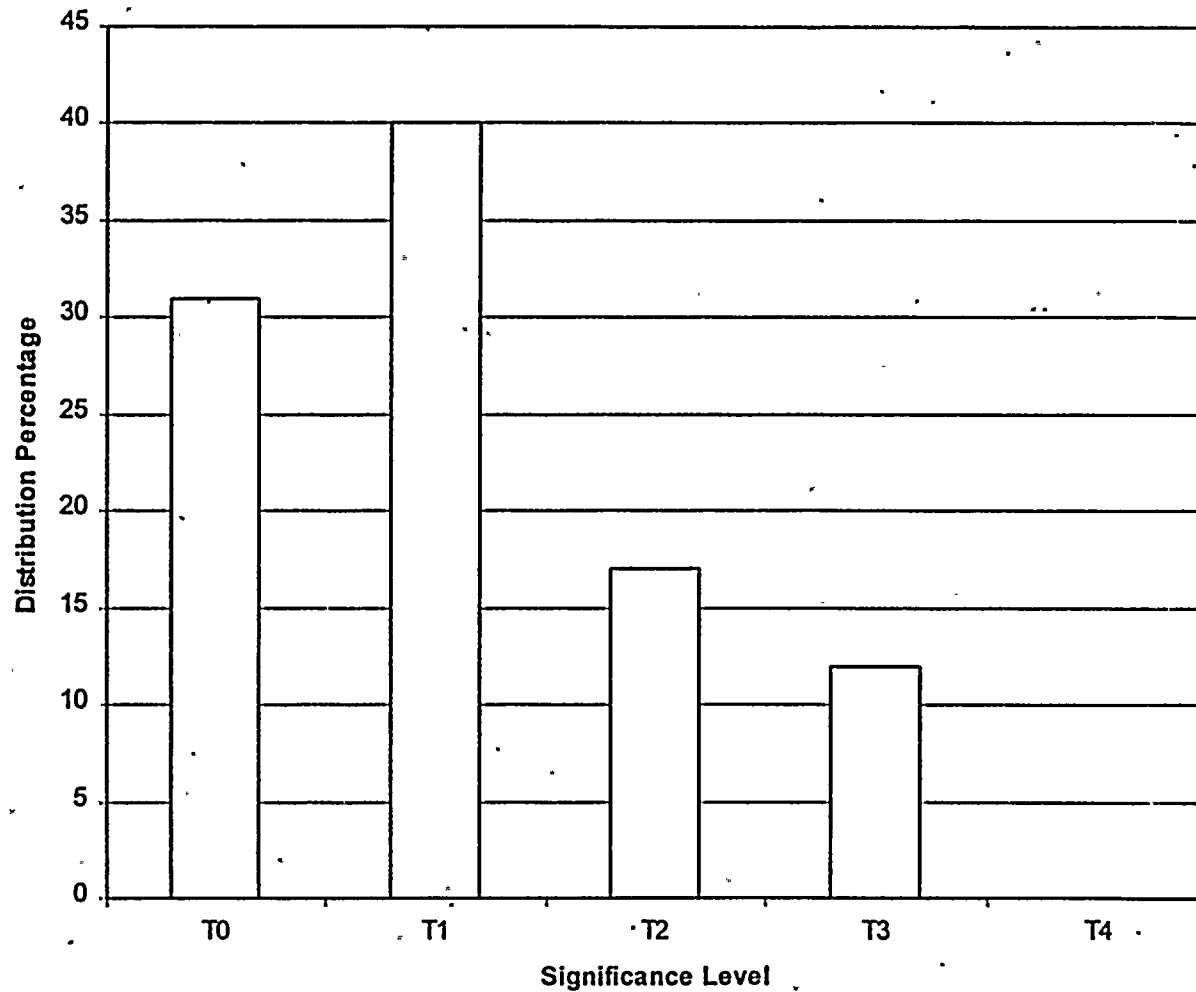
- Short term assessment item
- Establish confidence
- Interim actions
- Improvements



# OLD CALCULATIONS

- Problem
  - calculation deficiencies
- Action
  - independent review of 81 calculations
- Result
  - no inoperable conditions

# OLD CALCULATIONS



□ System Functional Calculations

## SIGNIFICANCE LEVELS

- T0 - No comment
- T1 - Negligible effect
- T2 - Minor effect
- T3 - Significant effect
- T4 - Inoperability

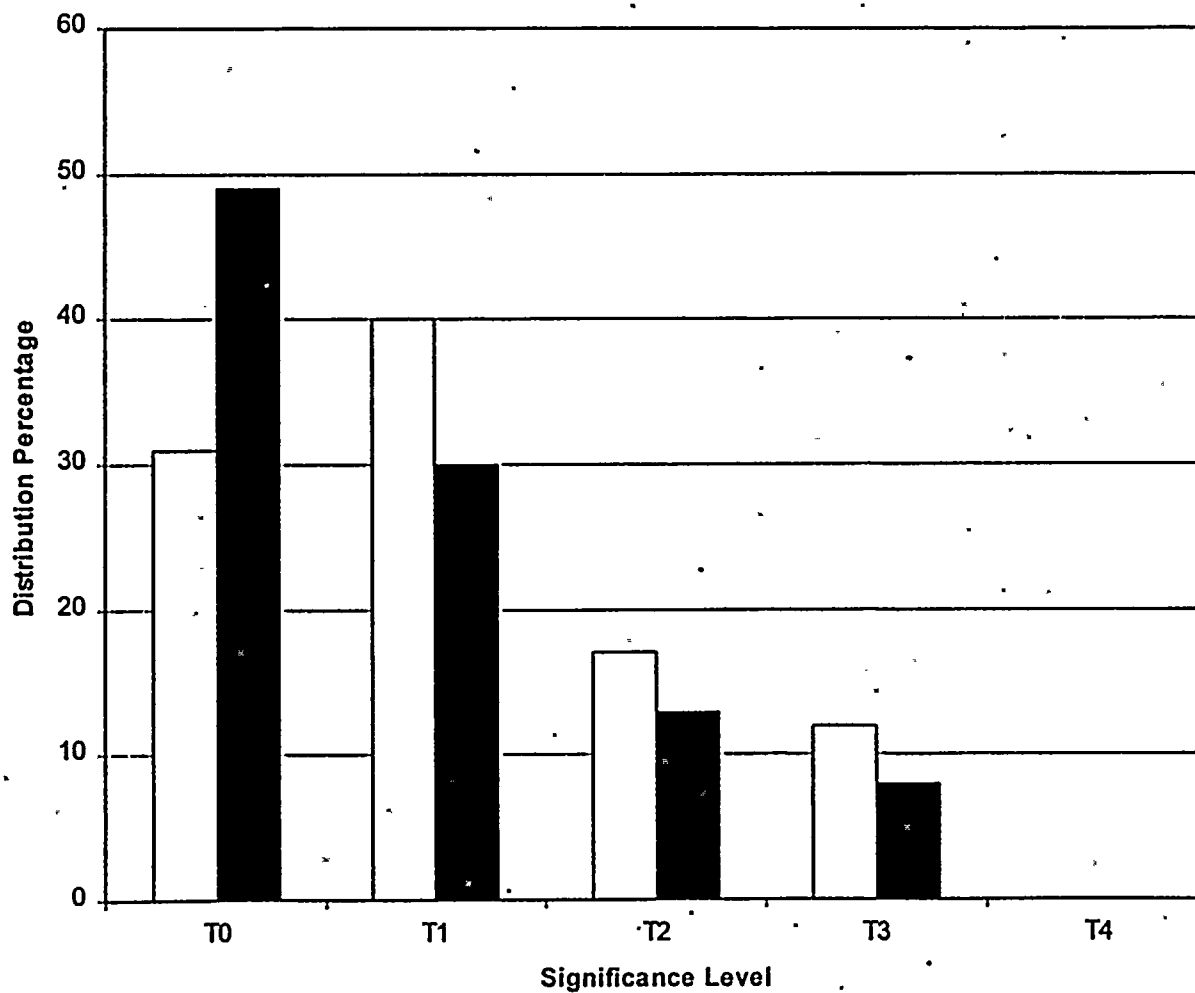


# CURRENT CALCULATIONS

- Problem
  - maintaining quality
- Action
  - focus on quality
  - peer review
  - contractor review
- Result
  - quality improved



# CURRENT CALCULATIONS



□ System Functional Calculations Before January 1998  
■ Calculations After January 1998

## SIGNIFICANCE LEVELS

T0 - No comment  
T1 - Negligible effect  
T2 - Minor effect  
T3 - Significant effect  
T4 - Inoperability



# FUTURE CALCULATIONS

- Problem
  - expectations and standards
  - accuracy
  - review thoroughness
  - uniformity
  - assumption validity

# ACTIONS

- Established clear program ownership
  - responsibilities
  - accountabilities
- Revising procedure
- Conducting training
  - management involvement
  - standards and expectations



# ACTIONS

- Establishing effectiveness monitoring program
- Program improvements





# EXPECTED RESULTS

- Design and licensing basis maintained
- Quality improvements
- Indicators to monitor calculations and provide feedback



# PRODUCTION ENGINEERING FUNCTIONAL AREA ASSESSMENT

Kenneth R. Baker

Director of Production Engineering

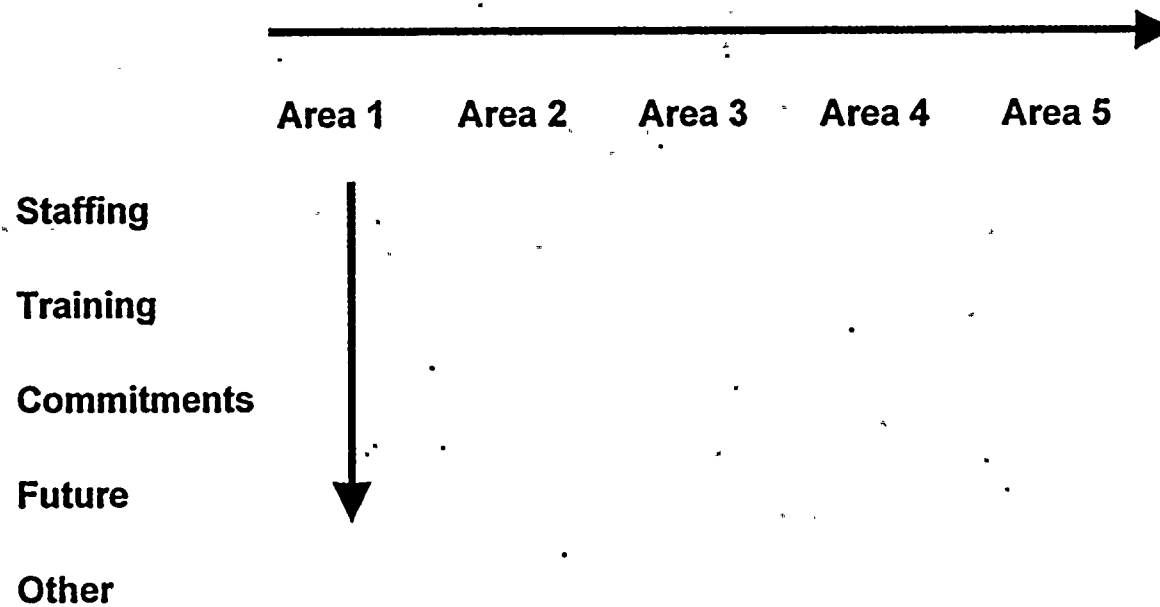


# SIX FUNCTIONAL AREAS

- Reactor engineering
- Preventive maintenance engineering
- Instrument and controls engineering
- Mechanical component engineering
- Performance test engineering
- Materials management



# FUNCTIONAL AREA ASSESSMENT







# FUNCTIONAL AREA ASSESSMENT RESULTS

Reactor Engineering



# RESTART ITEMS

(examples)

- Problem
  - time critical information
- Action
  - assess and improve process
- Result
  - design and licensing basis maintained



# RESTART ITEMS

(examples)

- Problem
  - low power physics training
- Action
  - provide familiarization training
- Result
  - event free startup



# RESTART ITEMS

(examples)

- Problem
  - flux map data transfer changes
- Action
  - practice flux map data transfer
- Result
  - efficient flux map data transfer



# RESTART ITEMS

(examples)

- Problem
  - reactivity management program document
- Action
  - formalize and roll out program
- Result
  - improved knowledge
  - event free startup
  - procedure based program

# RESTART ITEMS

(examples)

- Problem
  - startups after extended outages
- Action
  - utilize experience from other utilities
- Result
  - event free startup

# NON-RESTART ISSUES

(examples)

- Additional self assessments
- Training
  - codes used in core design and licensing
  - continuing education program



# MAINTENANCE FUNCTIONAL AREA ASSESSMENT

John Boesch

Maintenance Superintendent

# ASSESSMENT AREAS

- Conduct of maintenance
- Work control process
- Corrective action process
- Procedures
- Training

# CONDUCT OF MAINTENANCE

## AREA SUB-TOPICS

- Pre-job briefs
- Procedure use and adherence
- Logs and records
- Shift turnovers
- Control of contractors
- Staffing adequacy





# RESTART ITEM

- Problem
  - formal procedure for shift turnover
- Action
  - develop a formal procedure
  - conduct briefings
- Result
  - improved shift turnover communication

# WORK CONTROL PROCESS

## AREA SUBTOPICS

- Planning effectiveness
- Scheduling effectiveness
- Materiel condition

# NON-RESTART ITEM

- Problem
  - planning process issues
- Action
  - develop planner training program
  - track, trend, and assess performance
- Result
  - improved efficiency



# NON-RESTART ITEM

- Problem
  - scheduling process issues
- Action
  - improve the process and procedures
  - tracking and trending
- Result
  - improved effectiveness



# NON-RESTART ITEM

- Problem
  - aggregate impact of minor equipment deficiencies
- Action
  - increased effort to reduce minor deficiencies
  - training
  - tracking and trending
- Result
  - improved materiel condition

