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STALL,J.A. Florida Power & Light Co.
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SUBJECT: Forwards "St Lucie Plant Status Meeting for Units 1 & 2."

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CATEGORY 1 DOCUMENT

Florida Power & Light Company, 6501 South Ocean Drive, Jensen Beach, FL 34957

June 19, 1997

L-97-164
10 CFR 50.4

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

RE: St. Lucie Units 1 and 2
Docket Nos. 50-335 and 50-389
Management Review Meeting - June 1997

During a November 1995 meeting with the NRC, Florida Power and Light Company (FPL) reviewed the progress made in completing activities outlined in the St. Lucie Plan to Improve Operational Performance. FPL stated that meetings to review performance would be held monthly. In the November meeting, FPL committed to provide the monthly review materials to the NRC.

Enclosed is a copy of the indicators issued in June 1997 for St. Lucie Plant. The indicators were discussed at the June 13, 1997, FPL management review meeting at St. Lucie.

We look forward to NRC presence and feedback at these monthly meetings. If you have any questions on this material, please contact us.

Very truly yours,

J. Scarola for JAS

J. A. Stall
Vice President
St. Lucie Plant

JAS/spt

Enclosure

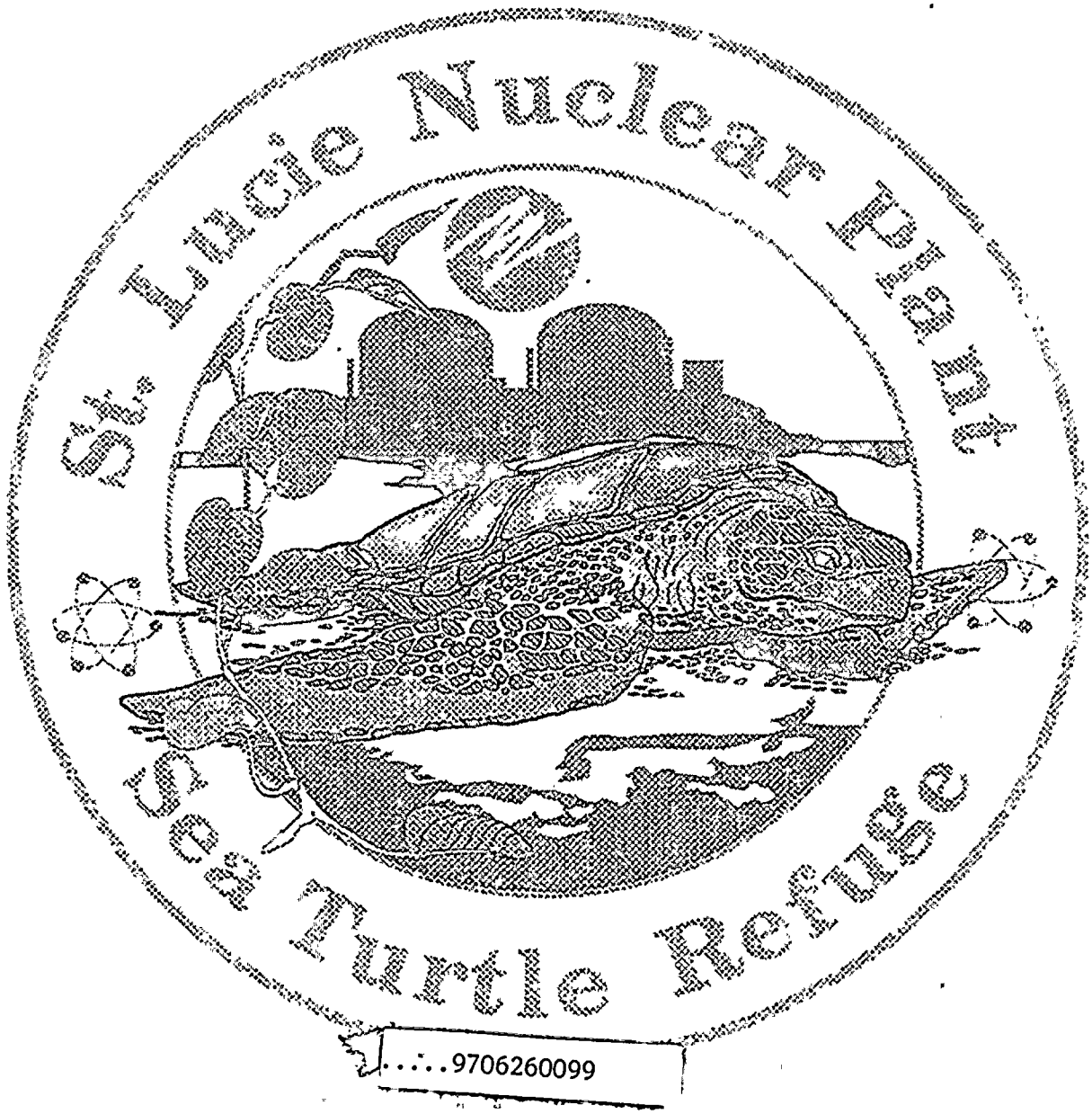
cc: Regional Administrator, USNRC, Region II
Senior Resident Inspector, USNRC, St. Lucie Plant



260008

A001

# St. Lucie Plant Status Meeting






## June 13, 1997

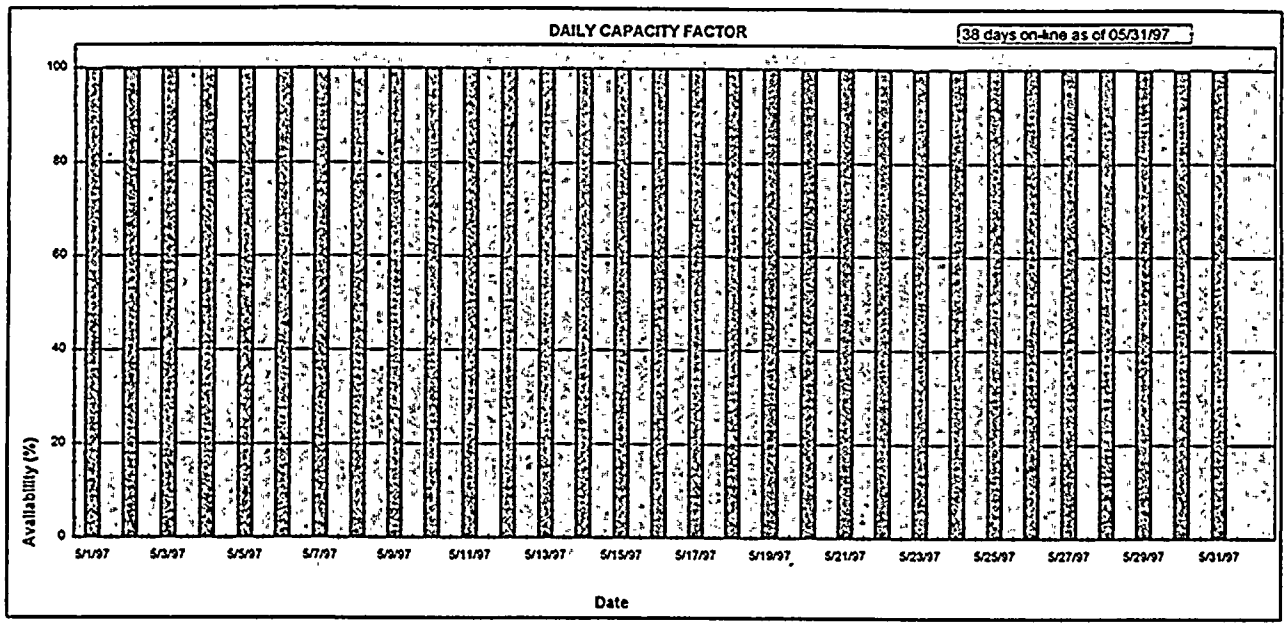
# St. Lucie Status Meeting Agenda

| | |
|---|---|
| Operating Report | H. Johnson |
| Work Control | C. Wood |
| Operations | H. Johnson |
| Maintenance | J. Marchese |
| Engineering | C. Bible |
| Services | D. Fadden |
| Materials Management | G. Boissy |
| Business Systems | R. Heroux |
| Steam Generator Replacement Project | R. Daley |
| Licensing | E. Weinkam |
| Quality Assurance | W. Bladow |

# OPERATING REPORT

Hugh Johnson

# Unit 1
## Equivalent Availability

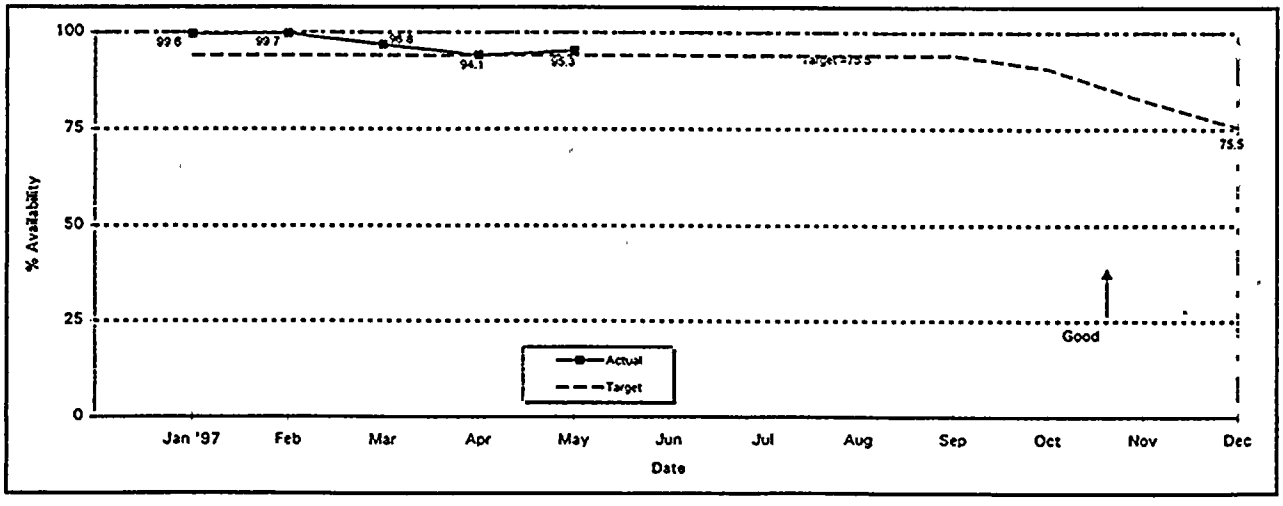



**Lost Generation**

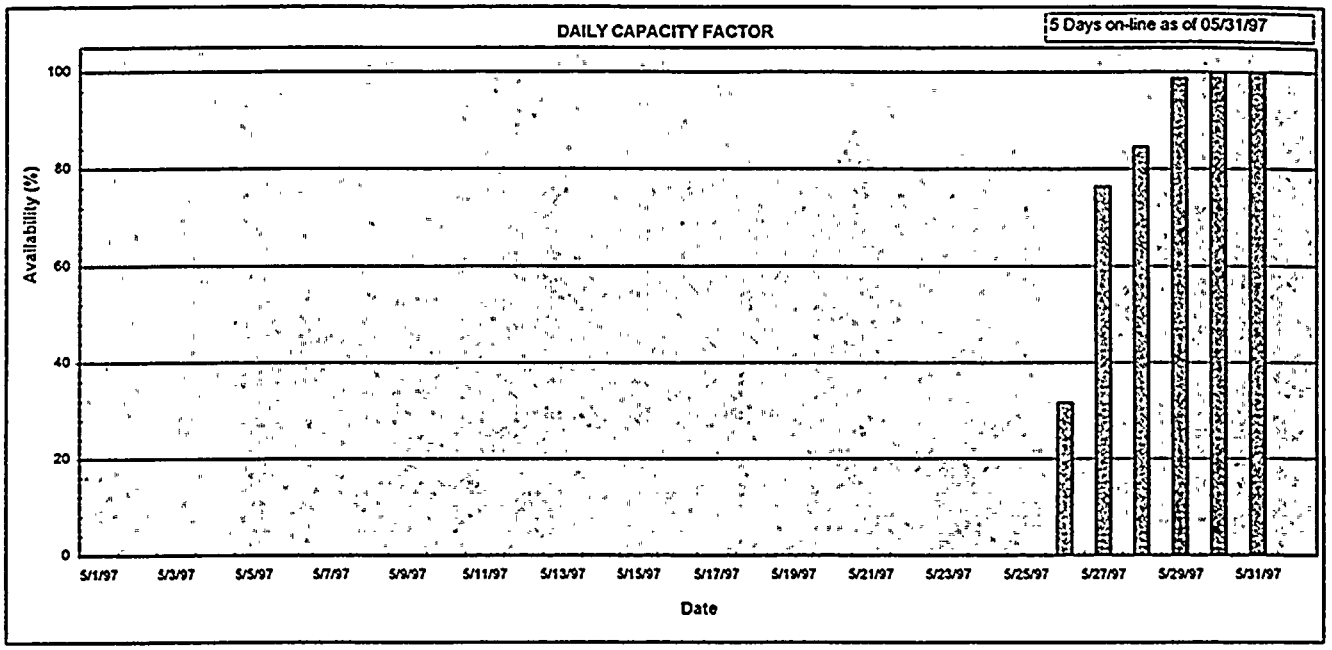
| Date | MWH Loss | Reason |
|---|---|---|

Based on a Maximum Dependable Capacity of 839 MW

EQUIVALENT AVAILABILITY FACTOR - UNIT 1



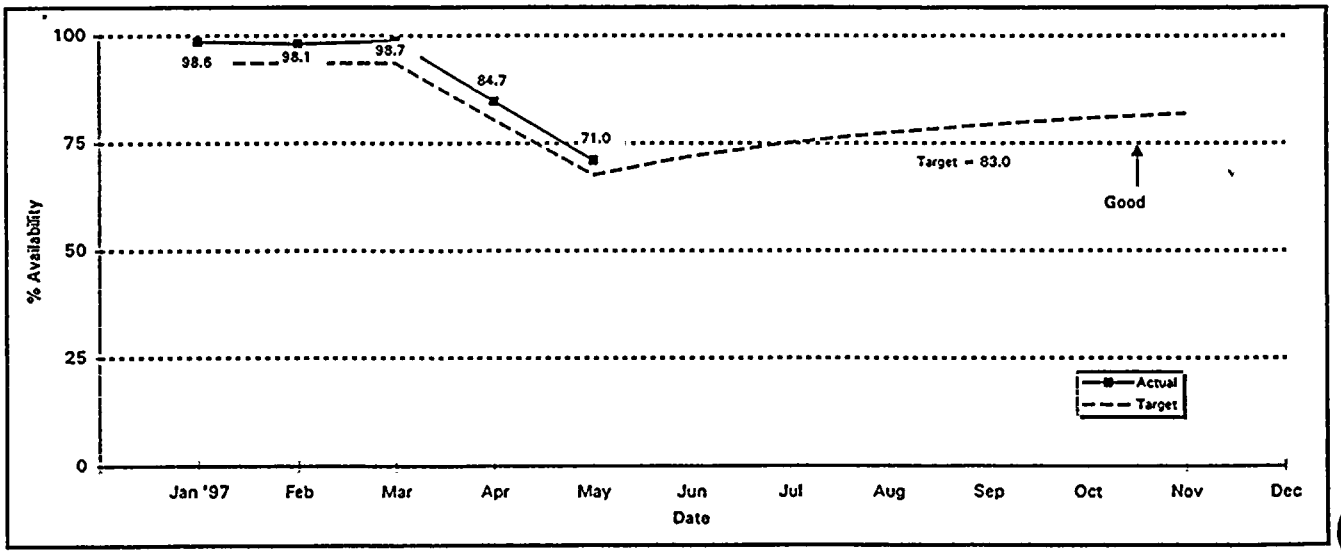
# Unit 2
## Equivalent Availability



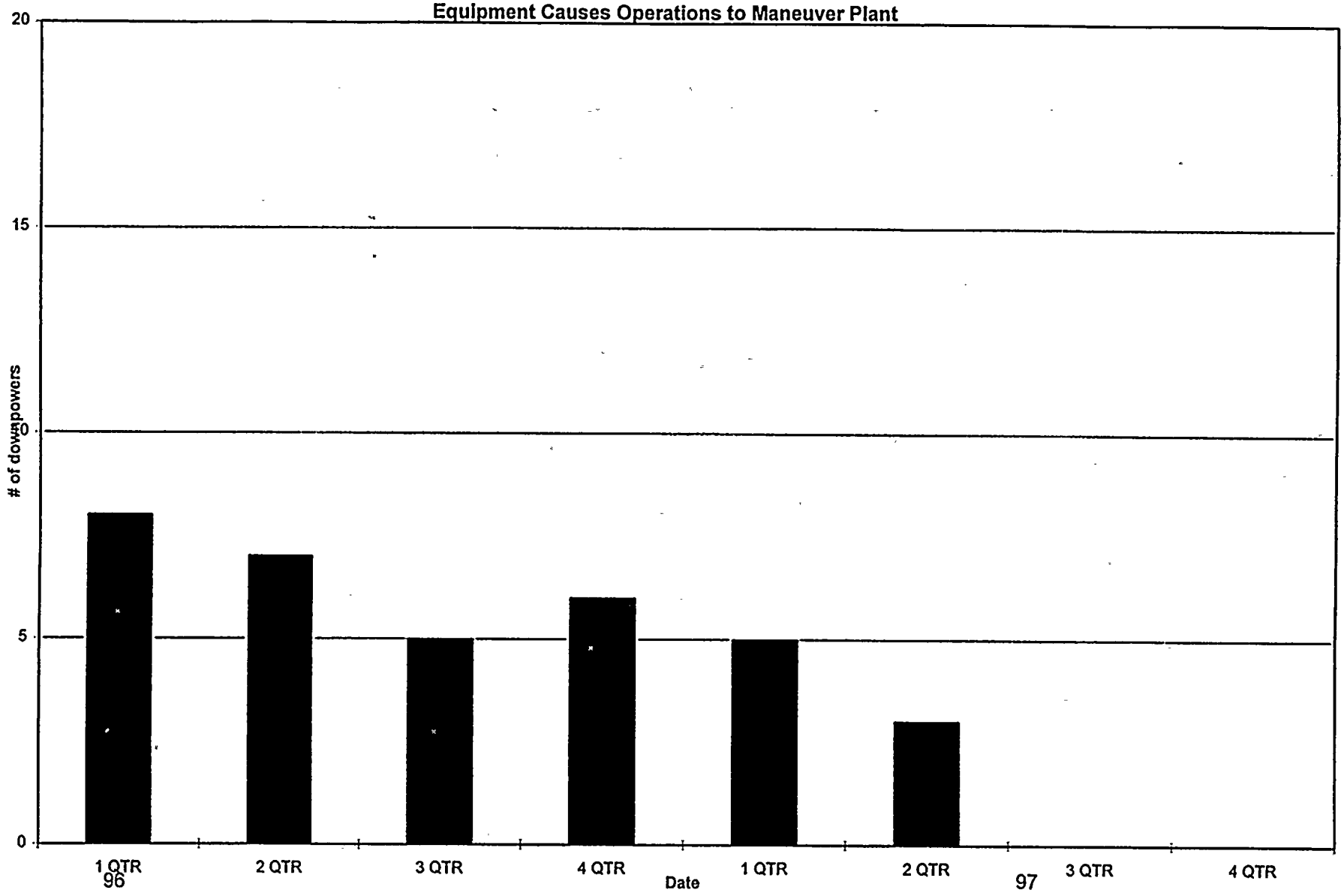

**Lost Generation**

| Date | MWH Loss | Reason |
|---|---|---|
| 5/1-26/97 | -526407 | Refueling Outage |
| 5/27-28/97 | -8247 | Power Ascension Testing |

Based on a Maximum Dependable Capacity of 839 MW

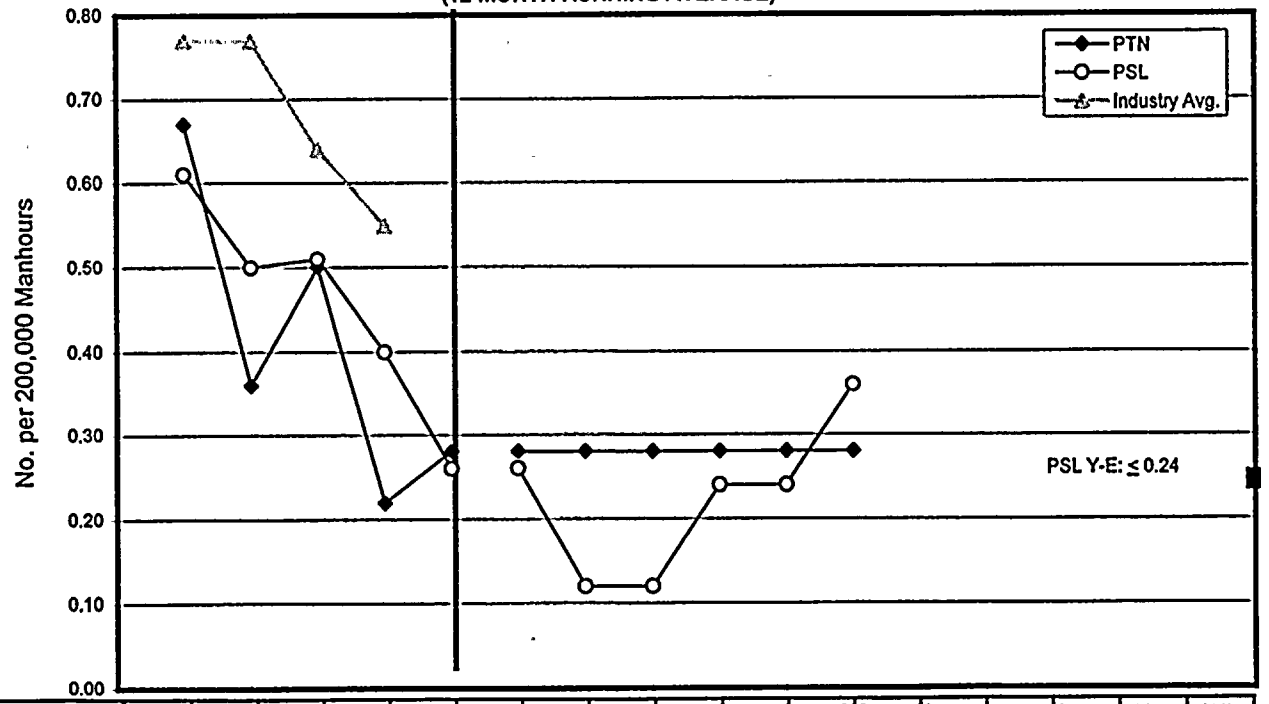


# ST. LUCIE PLANT



# INDUSTRIAL SAFETY ACCIDENT RATE

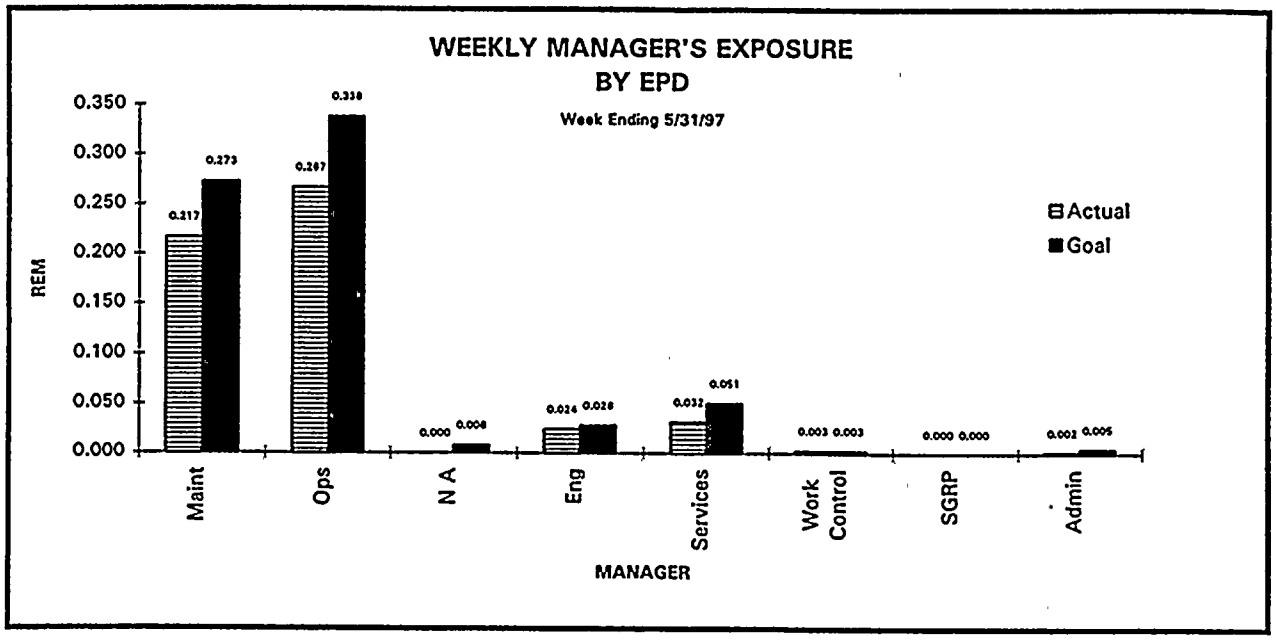
(12-MONTH RUNNING AVERAGE)



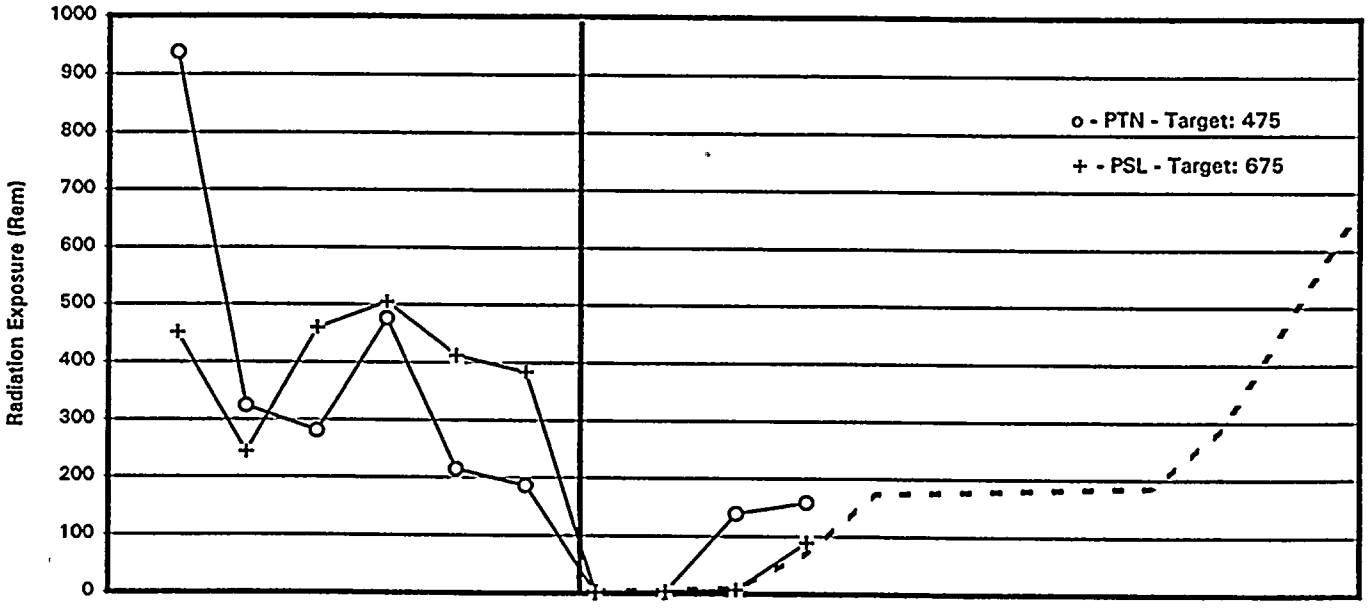

| Plant | 1992 | 1993 | 1994 | 1995 | 1996 | 1/97 | 2/97 | 3/97 | 4/97 | 5/97 | 6/97 | 7/97 | 8/97 | 9/1 | 10/97 | 11/97 | 12/97 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PTN | 0.67 | 0.36 | 0.50 | 0.22 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | | | | | | |
| PSL | 0.61 | 0.50 | 0.51 | 0.40 | 0.26 | 0.26 | 0.12 | 0.12 | 0.24 | 0.24 | 0.36 | | | | | | |
| Industry Avg. | 0.77 | 0.77 | 0.64 | 0.55 | | | | | | | | | | | | | |

Data Providers: (PTN) J. Sambito 246-7372 and (PSL) T. Moser 467-7171

# RADIATION EXPOSURE




TLD (Year-To-Date)

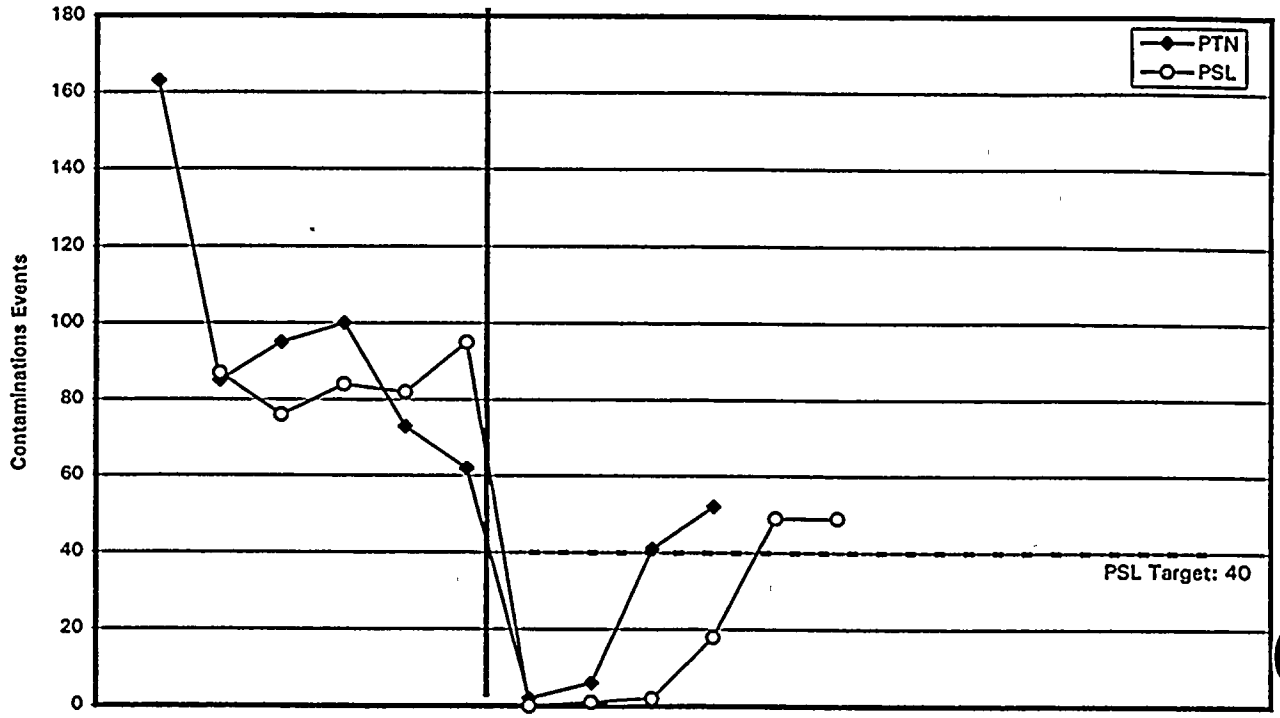



| Unit | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1/97 | 2/97 | 3/97 | 4/97 | 5/97 | 6/97 | 7/97 | 8/97 | 9/97 | 10/97 | 11/97 | 12/97 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PTN Y-T-D | 938.0 | 324.9 | 281.8 | 476.2 | 214.6 | 186.8 | 2.1 | 3.5 | 139.0 | 158.6 | | | | | | | | |
| PSL Y-T-D | 451.3 | 244.5 | 459.9 | 504.7 | 412.8 | 384.6 | 2.3 | 4.4 | 7.1 | 89.8 | | | | | | | | |

Providers: (PTN) John Lindsay 246-6548 (PSL) Hank Buchanan 467-7300

# PERSONNEL CONTAMINATION EVENTS

(Year-To-Date)




| Unit | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1/97 | 2/97 | 3/30 | 4/30 | 5/97 | 6/1 | 7/97 | 8/97 | 9/97 | 10/97 | 11/97 | 12/97 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PTN | 163 | 85 | 95 | 100 | 73 | 62 | 2 | 6 | 41 | 52 | | | | | | | | |
| PSL | | 87 | 76 | 84 | 82 | 95 | 0 | 1 | 2 | 18 | 49 | 49 | | | | | | |

Data Providers: (PTN) John Lindsay 286-6545 (PSL) Hank Buchanan 467-7300

# WORK CONTROL

Chuck Wood

# ST. LUCIE UNIT 2 1997 OUTAGE GOALS

| OUTAGE PERFORMANCE INDICATOR | ACTUALS | GOAL |
|---|---|---|
| NUCLEAR SAFETY PROBLEMS | 0 | 0 |
| PERSONNEL SAFETY - LOST TIME ACCIDENTS | 1 | 0 |
| DOCTOR CASE INJURIES | 1 | 6 |
| MEET OR BEAT THE OUTAGE - SCHEDULE DURATION | 41 | 42 |
| MEET OR BEAT THE OUTAGE - BUDGET | $27,781,000 | $32,497,216* |
| PERSONNEL EXPOSURE (ManREM) | 167 | 181 |
| PERSONNEL CONTAMINATIONS (ANY CONTAMINATION RESULTING IN A SKIN DOSE) | 4 | 10 |
| CONTAMINATED FLOOR SPACE WITHIN 30 DAYS POST OUTAGE | 0** | 0 |
| WASTE GENERATED (CUBIC FEET) | 4440 | 6500 |
| OUTAGE RELATED SIGNIFICANT CONDITION REPORTS | 9 | 12 |

* Original "As Budgeted" Outage Dollars = $28,023,000

** as of 6/9/97

# St. Lucie Unit 2 Spring '97 Refueling Outage
## OUTAGE ACCOMPLISHMENTS

- 12 Major Design Modifications

- 25 Minor Design Modifications

- 9 Other Emergent Modifications

- Major Tasks and Projects

  Emergency Diesel Generator Inspections
  Main Generator Rotor-out Inspection
  2B Main Steam Isolation Valve Overhaul
  Main Feedwater Isolation Valve Actuator Overhaul
  Quick Loc Modification to ICI Flanges
  Feedwater Flow Venturis-Clean/Repair/LEFM Calibration

- 1685 Work Orders Originally Scheduled

  1955 Work Orders Worked
  - Preventative Maintenance Work Orders 778
  - Corrective, Projects, Support, etc. 999

# Component Maintenance Performed In SL2-10

## ELECTRICAL

| | |
|---|---|
| Breakers/Switchgear | 61 |
| Motors | 46 |
| MOV PMs | 68 |

## VALVES AND WELDING

| | |
|---|---|
| Valves Repacked | 134 |
| Valves Overhauled | 44 |
| MOV PMs | 17 |
| VOTES Tests | 21 |
| Safety Relief Valves | 42 |
| Air Operated Valves | 87 |
| Check Valves | 55 |
| Valves Replaced | 68 |

## ROTATING EQUIPMENT

| | |
|---|---|
| Pumps (O/H or Replaced) | 47 |
| Fans (O/H or Replaced) | 24 |

## SL2-10 Scheduled vs. Actual Duration

| | Scheduled | Actual |
|---|---|---|
| RCS Cooldown (NOP/NOT to Mode 4) | 9 | 10 |
| RCS Drain Down and Reactor Disassembly | 100 | 73 |
| Steam Generators ECT and Plugging | 432 | 312 |
| 2A Emergency Diesel Generator | 217 | 269 |
| Core Offload | 76 | 90 |
| Primary Valve Work (Freeze Seals) | 198 | 147 |
| Core Reload | 76 | 103 |
| 2B Emergency Diesel Generator | 226 | 204 |
| B Train ICW System Out of Service | 331 | 370 |
| Reactor Reassembly | 133 | 113 |
| Engineered Safety Features Testing | 36 | 30 |
| RCS Heatup (Mode 4 to NOP/NOT) | 55 | 62 |
| Turbine/Generator Work | 858 | 914 |

# ST. LUCIE UNIT 2 1997 OUTAGE

## OPERATOR WORK AROUNDS WORKED DURING SL2-10

"A PROBLEM THAT IMPEDES AN OPERATOR FROM PERFORMING DUTIES WITHIN APPROVED PROCEDURES OR IN ACCORDANCE WITH THE INTENDED DESIGN"

| PRIORITY | OWA TRACKING # | EQUIP ID # | DEFICIENCIES | OPER ACTIONS REQ'D | PROPOSED RESOLUTION | RESOLUTION STATUS |
|---|---|---|---|---|---|---|
| A | 297-002 | PRESSURIZER CODE SAFETIES V1200/1/2 | VALVES LEAK BY | OPERATE AT REDUCED PRESSURES | IMPLEMENT PCM 96-139 | ALLOWED RCS OP PRESS INCREASE TO 2250 - INCREASED DNB MARGIN |
| B | 296-004\ PM96-03-702 | PCV-08-870 GLAND SEAL REGULATOR | GLAND SEAL REGULATOR DOES NOT CONTROL PRESSURE | MANUALLY ADJUST PRESSURE OR USE BYPASS | WORK PLANNED TO START 11/1/96 & BE COMPLETED 11/16/96 MV/MOTLEY | VALVE WORKS IN AUTO, LOCAL MANUAL PRESS CONTROL NO LONGER REQUIRED |
| B | 297-001 | REACTOR COOLANT GAS VENT SYSTEM ALARM | SYSTEM VALVES LEAK BY - HIGH PRESS ALARM REVERSED | MONITOR SYSTEM | REPAIR/REPLACE RCGVS VALVES PCM 296-190 | RESTORED SECOND RCS PRESS BOUNDARY ISOLATION |
| B | 297-003 | TCV-13-8 GENERATOR EXCITER COOLER | ERRATIC CONTROL | OPERATE IN MANUAL ON BYPASS | REPAIR DURING OUTAGE | VALVE WORKS IN AUTO, LOCAL MANUAL CONTROL NO LONGER REQUIRED |
| B | 296-005 | CCW RELIEF VALVES SR-14350 SR-14359 | SAFETY/RELIEFS LIFT ON CCW SYSTEM WHEN TESTING THE "N" HEADER ISOL VALVES | ISOLATE CCW TO SDC HX TO ALLOW RELIEFS TO RESEAT, MAKE ENTRY INTO SDC HX TO VERIFY CLOSED | IMPLEMENT PCM (INSTALL ORIFICE ON HCV-14-8A) I&C VLV | ELIMINATES CHALLENGING OPERATORS WITH POTENTIAL CCW INVENTORY LOSS WHEN CLOSING VALVE |

## ST. LUCIE UNIT 2 OUTAGE
## ISSUES

### Engineered Safety Features (ESF) Testing

- Scheduled Duration 36

  Actual Duration 30

- Tested one train at a time so that Shutdown Cooling Flow was maintained.

- Only one significant failure: 2A LPSI Pump

- Originally scheduled to be performed at the beginning. 2A LPSI pump failure required moving test to the end of the outage.

- No failures during testing at the end of the outage.

- Completely rewritten procedure worked well during first time use. Procedure throughly tested on Simulator during development.

### Containment Sump Screens

- Condition discovered late in outage during sump inspection for Containment close-out.

- Openings found in screens around A and B sumps larger than described in FSAR.

- Screen patches applied over some openings, others covered with plate.

- 35 hours of Critical Path impact.

## ST. LUCIE UNIT 2 OUTAGE
## ISSUES (cont'd)

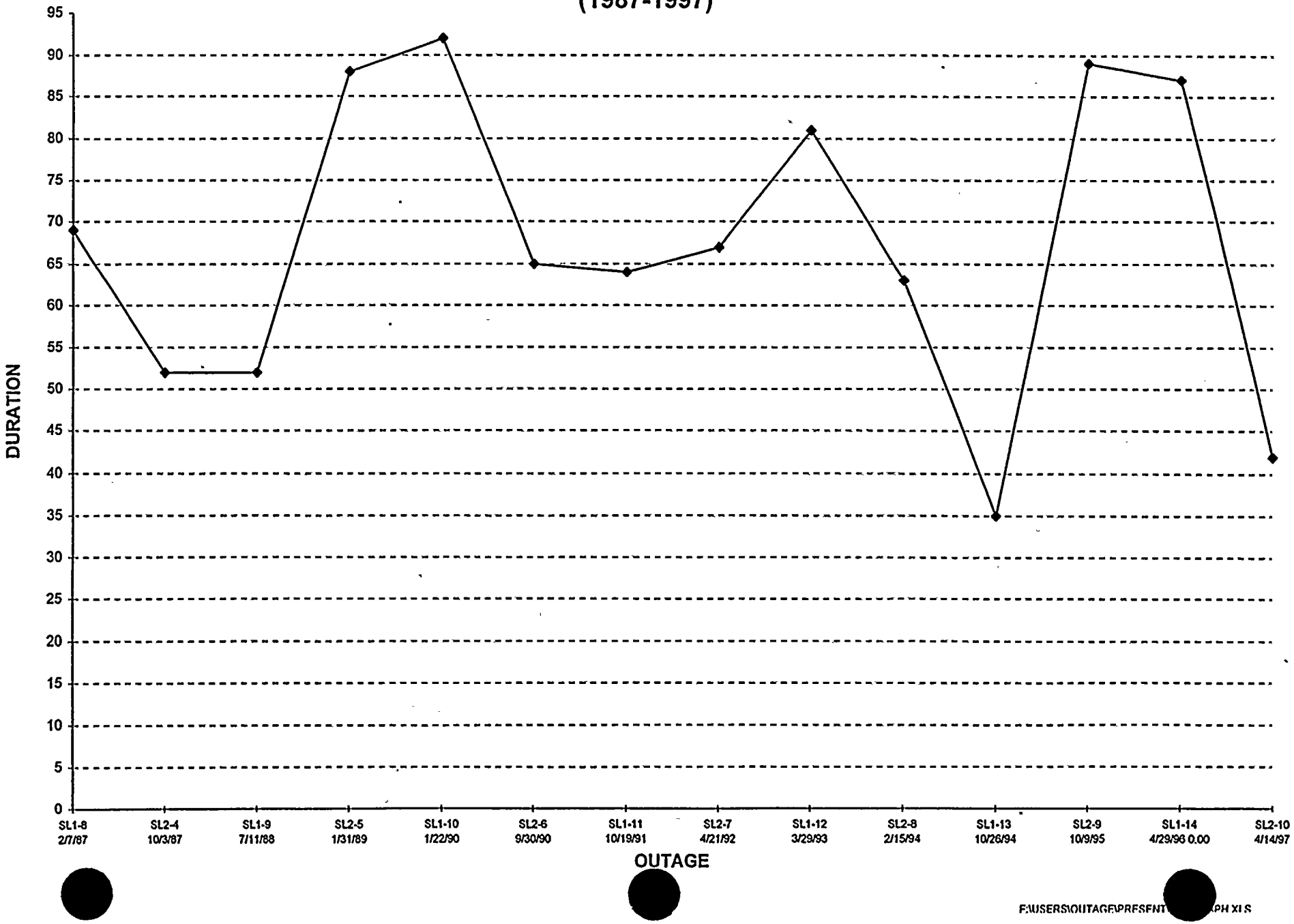
### Broken Incore Instruments

- Detectors broke during removal, but not immediately identified.
- CIS actuation when UGS raised for removal from vessel.
- 3 ICI pieces remained in UGS. One was extracted, the other two pushed to bottom and positions abandoned.
- Total of five broken detectors discovered.

### Clearance Problems

- Several clearance errors (DC bus bkr, CWP, EDG oil pump) resulted in outage stand down to implement corrective actions.
- Major system clearances (i.e. RCS, Main Steam, Condensate) tagged too many components unnecessarily which caused major effort for boundary modification.
- Too many hoses installed on drains and vents that served no function.
- Clearances did not support work as scheduled. Components to be worked had clearance tags installed and required modification.

# REFUELINGS
# (1987-1997)




F:\USERS\OUTAGE\PRESENT...PH XLS

# ST. LUCIE STANDARD OUTAGE

ASSUMPTIONS

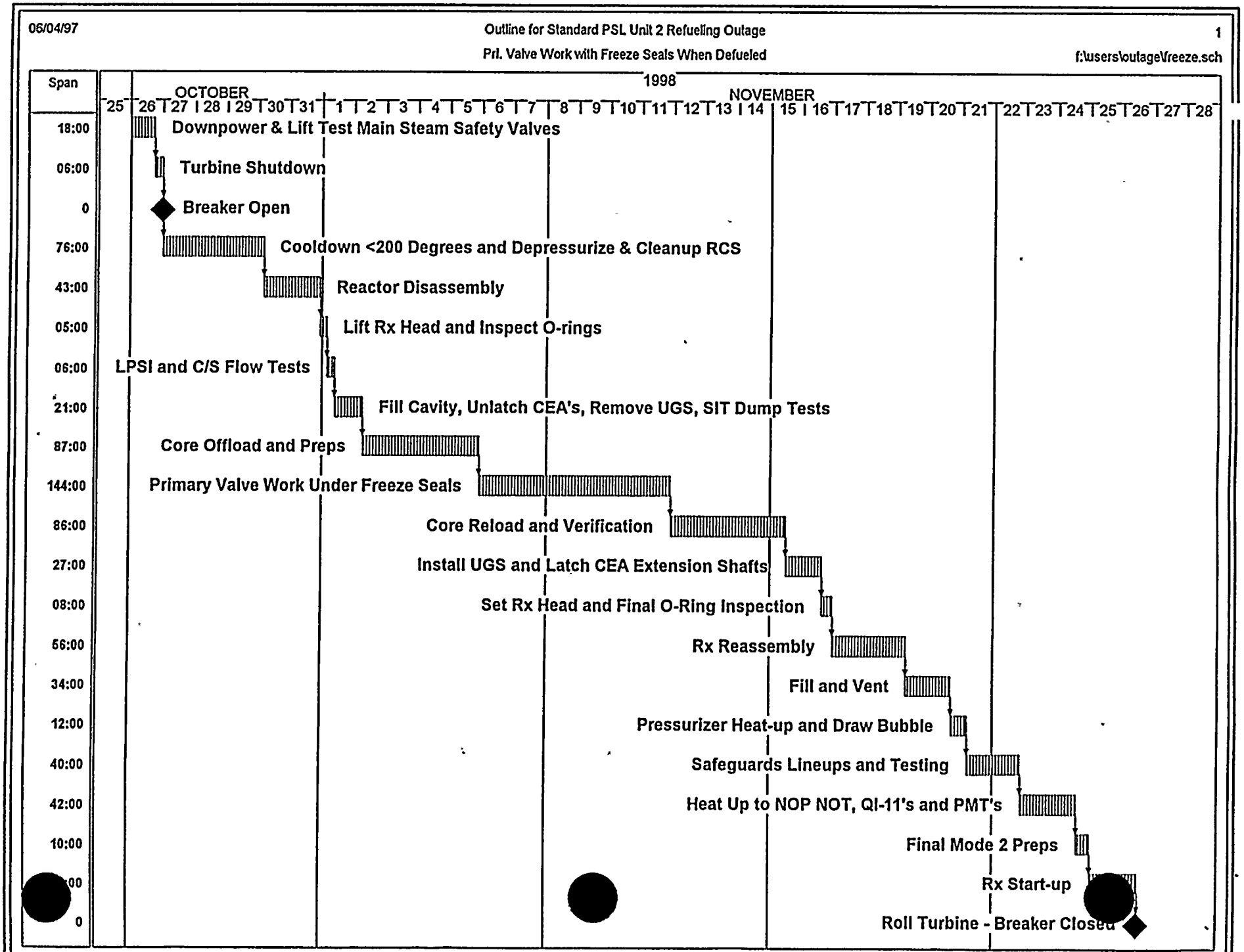
* Fuel shuffle not practical due to dependance on freeze seals for RCS boundary valve work
* 100% ECT behind nozzle dams
* No modifications considered that would impact critical path
* No major non routine exams or tests included (ILRT, RX )
* Six day work window with fuel off-loaded
* 24 hour duration RCS clean up

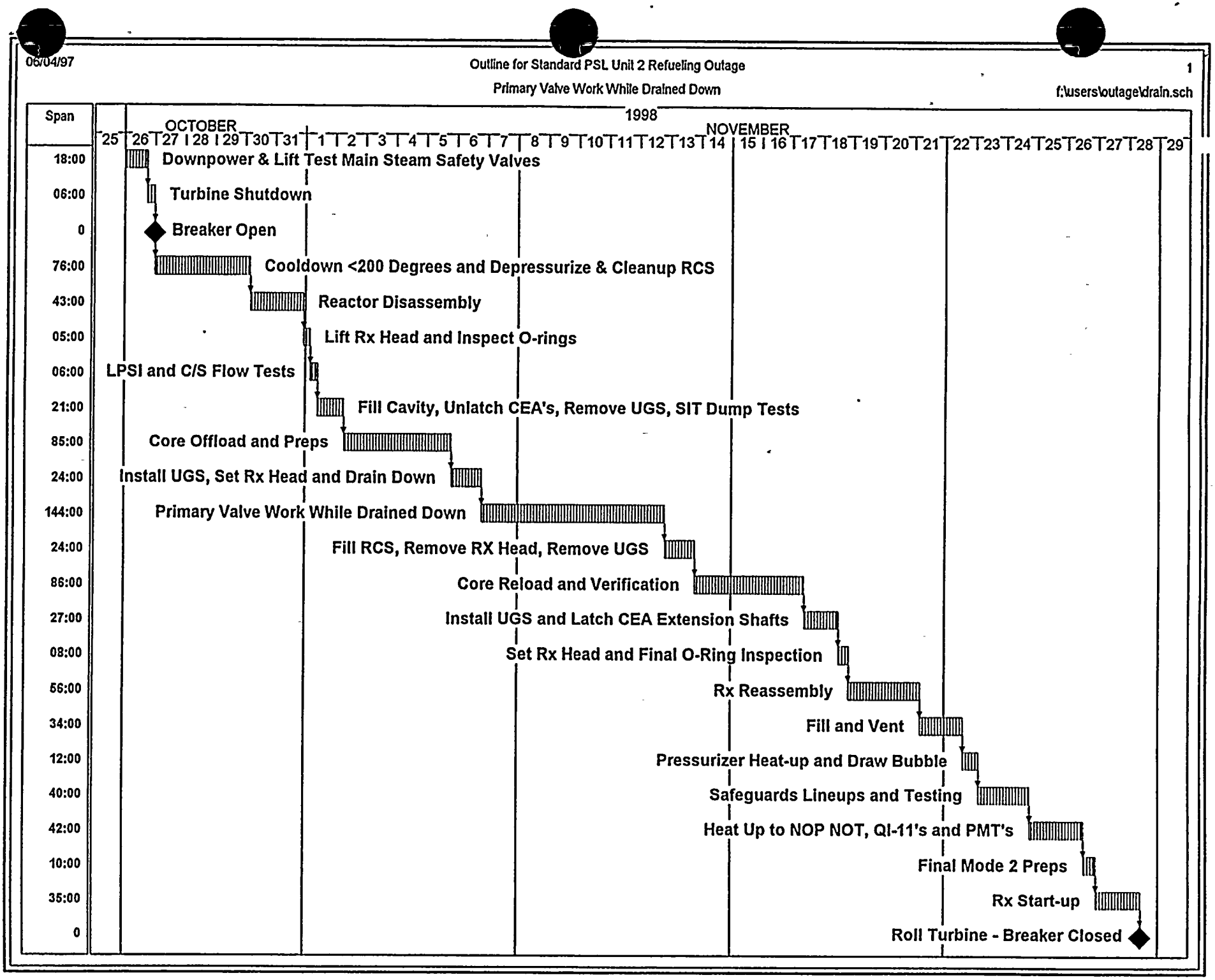
Schedule One - RCS work defueled behind freeze seals

31 days

Schedule Two - RCS work defueled and RCS drained

33 days


06/04/97
Outline for Standard PSL Unit 2 Refueling Outage
Prl. Valve Work with Freeze Seals When Defueled
1
f:\users\outage\freeze.sch
Span
1998
OCTOBER
NOVEMBER
25 26 27 28 29 30 31 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28
18:00 Downpower & Lift Test Main Steam Safety Valves
06:00 Turbine Shutdown
0 Breaker Open
76:00 Cooldown <200 Degrees and Depressurize & Cleanup RCS
43:00 Reactor Disassembly
05:00 Lift Rx Head and Inspect O-rings
06:00 LPSI and C/S Flow Tests
21:00 Fill Cavity, Unlatch CEA's, Remove UGS, SIT Dump Tests
87:00 Core Offload and Preps
144:00 Primary Valve Work Under Freeze Seals
86:00 Core Reload and Verification
27:00 Install UGS and Latch CEA Extension Shafts
08:00 Set Rx Head and Final O-Ring Inspection
56:00 Rx Reassembly
34:00 Fill and Vent
12:00 Pressurizer Heat-up and Draw Bubble
40:00 Safeguards Lineups and Testing
42:00 Heat Up to NOP NOT, QI-11's and PMT's
10:00 Final Mode 2 Preps
Rx Start-up
0 Roll Turbine - Breaker Closed


06/04/97
Outline for Standard PSL Unit 2 Refueling Outage
Primary Valve Work While Drained Down
1
f:\users\outage\drain.sch
Span
1998
OCTOBER
NOVEMBER
25 26 27 28 29 30 31 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29
18:00 Downpower & Lift Test Main Steam Safety Valves
06:00 Turbine Shutdown
0 Breaker Open
76:00 Cooldown <200 Degrees and Depressurize & Cleanup RCS
43:00 Reactor Disassembly
05:00 Lift Rx Head and Inspect O-rings
06:00 LPSI and C/S Flow Tests
21:00 Fill Cavity, Unlatch CEA's, Remove UGS, SIT Dump Tests
85:00 Core Offload and Preps
24:00 Install UGS, Set Rx Head and Drain Down
144:00 Primary Valve Work While Drained Down
24:00 Fill RCS, Remove RX Head, Remove UGS
86:00 Core Reload and Verification
27:00 Install UGS and Latch CEA Extension Shafts
08:00 Set Rx Head and Final O-Ring Inspection
56:00 Rx Reassembly
34:00 Fill and Vent
12:00 Pressurizer Heat-up and Draw Bubble
40:00 Safeguards Lineups and Testing
42:00 Heat Up to NOP NOT, QI-11's and PMT's
10:00 Final Mode 2 Preps
35:00 Rx Start-up
0 Roll Turbine - Breaker Closed

## FUTURE OUTAGE PERFORMANCE IMPROVEMENTS

- Improve Administrative Controls for Containment Entries After Containment Integrity is Established
- Improve Ramp Up and Inprocessing for Temporaries and Contractors
- Set Earlier Date of Discovery
- System Work Window Management
  - Better Definition of System Windows in Schedule
  - Select System Work Window Managers
  - Adhere to System Windows
- Increase Planning Horizon for Future Outages
  - Set Earlier Freeze Date for PCMs and Major Projects
- Reduced Outage Duration Initiatives
  - Refueling Equipment Upgrades for More Rapid Fuel Bundle Transit Times
  - Piping Modifications to Allow Higher Pressure Operation of Shutdown Cooling Purification
  - Operational RCS Heatup Durations

# OPERATIONS

Hugh Johnson

# STATUS OF NWE DOWN RELIEF TO RCO

- 27 SNPOs have been Fire Brigade Leader trained

- All procedure changes necessary to facilitate shift operation without NWE approved and on street as of 6/10/97.

- 3 NWEs have received required simulator training. Other 3 will receive training this weekend.

- All NWEs still require 40 hours of on-shift familiarization training prior to filling in as RCO.

# Unit 2 Outage

**Strengths:**

Conservative plant operation

Support of the outage schedule

Conservative reactivity management

No lost time injuries

Control of material to reduce waste (screen material, wood reduction for scaffolding)

Decon efforts prior to and after working

**Areas of Improvement:**

Fuel element placement on the pins

S/G Wet Layup

EOOS Computer program/PMT Status

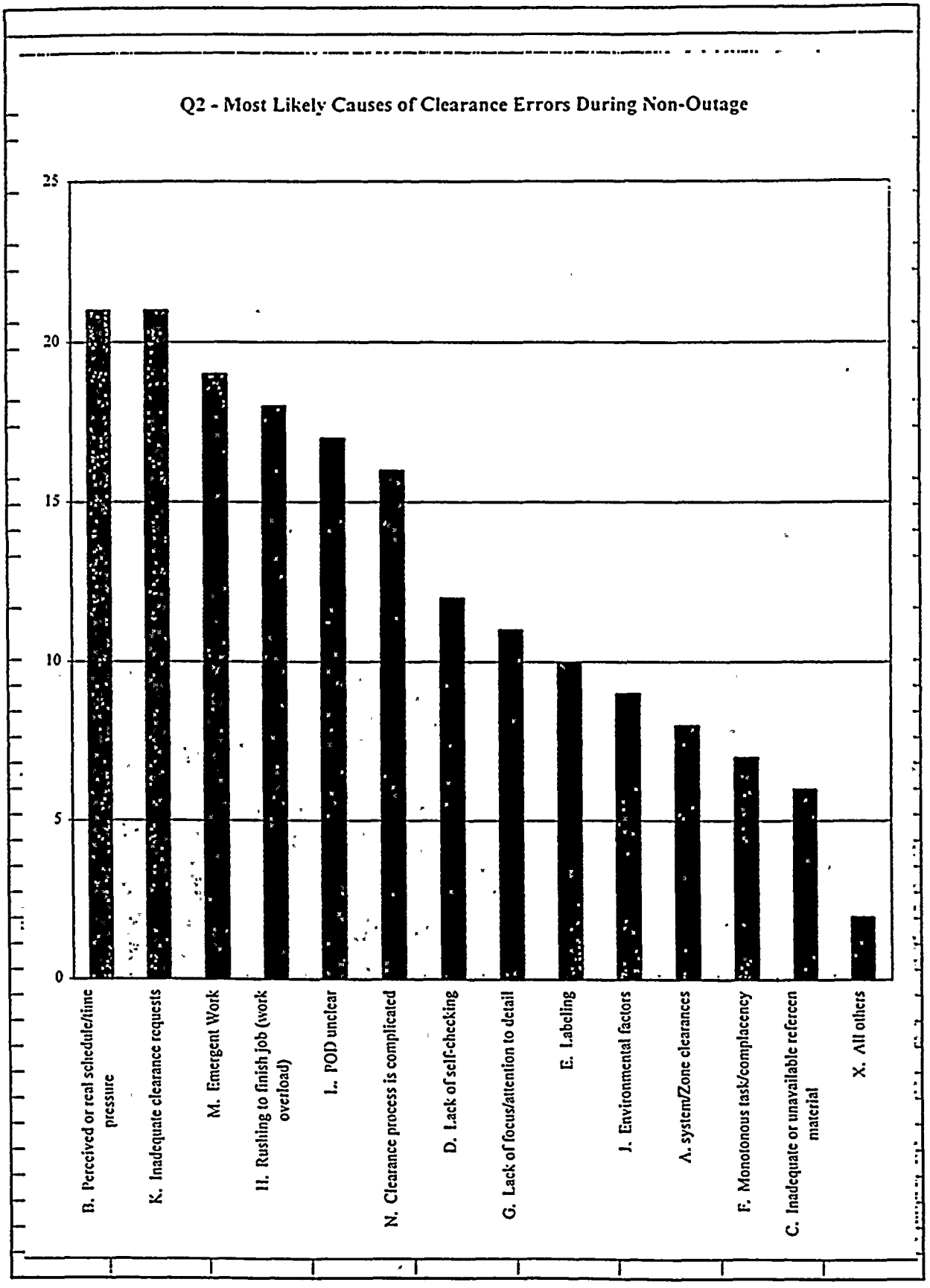
RCS cleanup coordination and criteria

The clearance process

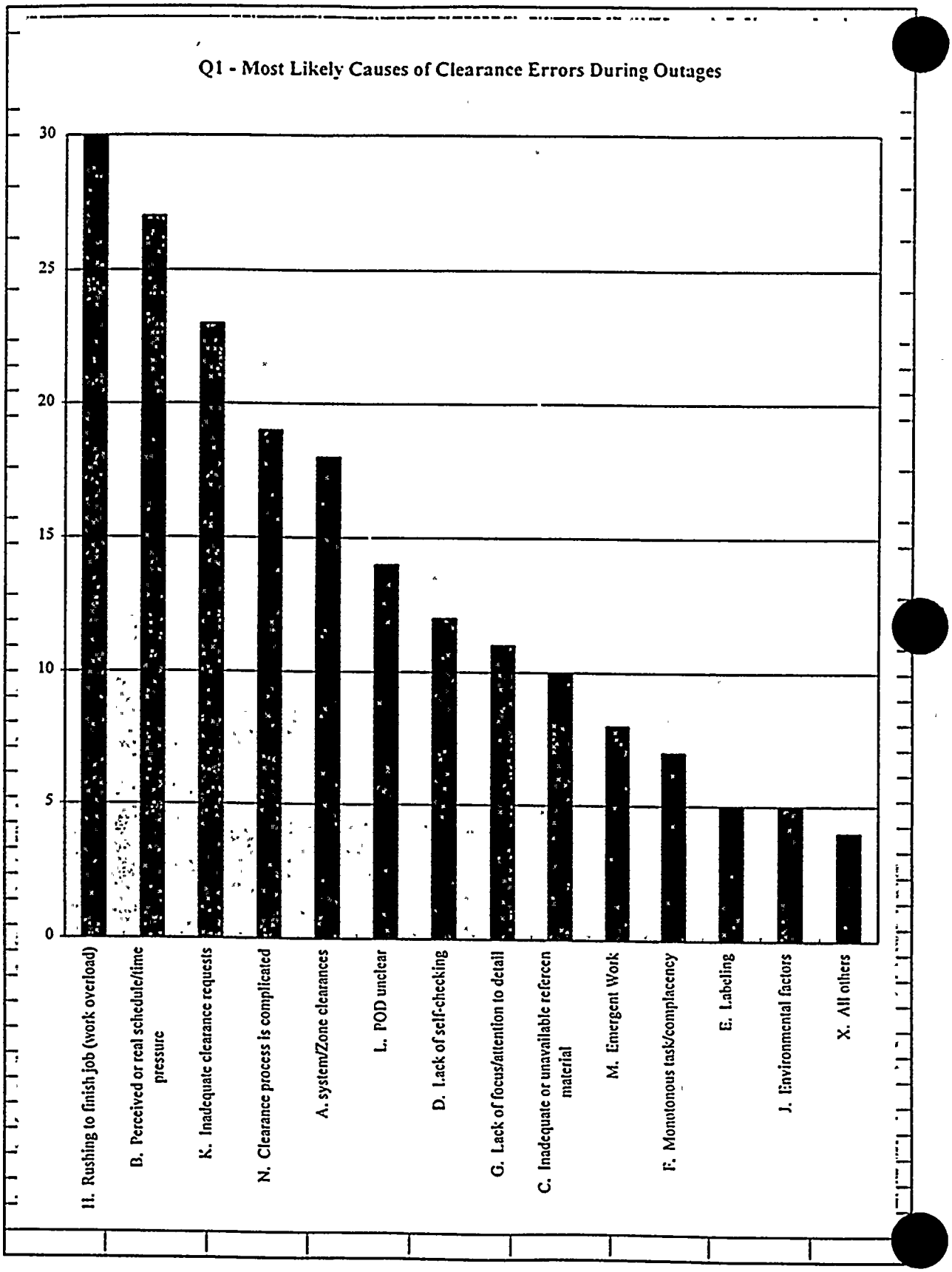
Administrative readiness: (writing clearances, procedure changes)

Need full time ALARA coordinators

Attachment E
Results of Clearance Team Survey



Attachment E
Results of Clearance Team Survey



# Clearance Order Events

## Process Weaknesses

- Planning and scheduling must allow sufficient time for the maintenance departments and Operations to plan their work.

- The Operations section of the Plan of the Day should be man-loaded to assure that resources are sufficient.

- The use of large clearances and the use of Release for Test and Boundary Modifications can be made easier by assigning specific clearances tags to the specific work orders listed on the clearance.

- Establish a section in the POD that captures all required activities for Operations, such as surveillances, clearances and support.

# Training

- All personnel involved in the clearance process must be totally familiar with the different aspects of the process.

- Up-relieving personnel must be given the same training. Establish minimum OJT requirements that must be completed prior to up-relieving.

- Planners and schedulers should be given systems training, to facilitate the writing of work packages and clearance requests. This knowledge is critical for recommending clearance boundaries.

- Provide annual requalification training to all personnel involved in the clearance process.

# Reference Materials

- Piping and Instrumentation Drawings are used extensively in the clearance process. However, the current size of the drawings does not allow for easy use in the field or wide spread distribution in the plant.

- Control Wiring Diagrams do not always reflect the wiring tag in the field and Operations is often relying on maintenance personnel to show them the proper lifted leads to tag.

- Improve the computer program for tracking clearance order control forms, to allow it to segregate jobs on clearance control forms by discipline.

# Operations Staffing

- The Operations Section of the Plan of the Day should be man-loaded.

- Operations management has undertaken initiatives to address the licensed operator shortage.

# Demand for Time

- Use of the appropriate Chain of Command during high level activities such as Critical Pat jobs, rather than direct calls to the Clearance Center and Control Rooms, will help reduce distractions.

- Operations on-shift management must increase the time spent in the field, observing the clearance process and assuring that expectations are being met.

# MAINTENANCE

Joe Marchese

# MAINTENANCE

## SUMMARY:

The maintenance report will focus on the past refueling outage from a maintenance self assessment/critique. This report will list the strengths, weakness, and lessons learned, only a few will be discussed in detail. There were nine(9)strengths and thirty-two(32) weaknesses identified. Corrective actions for these weaknesses are also listed. In reality we were successful this outage however we're not winning because we still have poor programs, ownership and dedication at many levels. We don't boldly explore the best ways to do business because we can't break thru the barriers like others facilities are doing or have done. We are occupied by things other than our core business.

## STRENGTHS:

The following were considered strengths/good practices:

1. **SCAFFOLDING PROGRAM/USE OF WOOD IN RCA/RCB**
   Staging of materials at ramp and the wood minimization in RCA/RCB.

2. **CTMT COORDINATORS**

3. **CLEARANCE CONTROLLERS**

4. **NMM/STORES SUPPORT** (PARTS AND MATERIAL AVAILABILITY)

5. **IC OUTAGE ORGANIZATION** (ABILITY TO HANDLE WORK)
   Solid supervision on all shifts, minimum use of temps, relied more on temps as support(UT1&2's

6. **WELDING PROGRAM**
   Quality, ability to stay ahead, increase work scope

7. **ROTATING GROUP** (STAYED AHEAD)

8. **REACTOR REASSEMBLY**

9. **30 MINUTE RULE**

# WEAKNESSES AND IMPACT TO PLANT:

1. TOO HEAVY PLANT RELIANCE ON THE USE OF FREEZE SEALS
   Resulted in excessive overtime, personnel injuries, and high cost to plant

2. FME/CAVITY MONITOR PROGRAMS
   No single program ownership resulted in unclear standards/practices.

3. REWORK IN VALVE AREA EXCESSIVE
   Training, supervision, expectations, looking ahead

4. MECH TEMPS-NUMBER, QUALITY, DEDICATION, OWNERSHIP
   Beyond core temps no ownership, no dedication, not wanted or accepted by bargaining unit. Local craft had more ownership in job.

5. INEXPERIENCED LEADERSHIP IN MECH(SUPV/FOREMAN)

6. WORKER OWNERSHIP/JOB DEDICATION

7. RAMP CREW-KNOWLEDGE, MOTIVATION, WORK EXPERIENCE

8. INCORE REMOVAL JOB PLANNING/IMPLEMENTATION

9. HOSE PROGRAM-COSTLY, NOT WELL PLANNED, INFLEXIBLE POLICY
   We hang hoses for everything, do not walk down to see if needed, just issue paper to hang

10. MAJOR PUMP OVERHAULS - NOT COST EFFECTIVE AT SITE

## WEAKNESSES AND IMPACT TO PLANT:

11. QUALITY REVIEWS - INADEQUATE ON INCORE REMOVAL

12. OVERTIME - NOT USED WISELY, PERSONNEL SAFETY ISSUES

13. TOOL ROOM STAFFING - NOT TIMELY, BROUGHT IN TOO LATE

14. INSULATION/LAGGING - TOO EXPENSIVE NEED ALTERNATE SOLUTION

15. HY-TORQUE PROGRAM - SELF IMPOSED CONTROLS TOO DIFFICULT TO COMPLY WITH DURING OUTAGES

16. DRAIN/VENT VALVE LEAKS - UNECONOMICAL APPROACH PRACTICED

17. HP PROGRAM/PRACTICE FOR PERSONNEL - LEVEL, CONSISTENCY

18. E/M RESOURCE STAFFING - INADEQUATE/OVERTIME

19. TURNOVERS/COORDINATION - NOT AS EXPECTED/REQUIRED Resulted in (26) unsatisfactory performance issues

20. PERSONNEL SAFETY - PERFORMANCE BELOW EXPECTATIONS

21. VALVE ORGANIZATION - SIGNIFICANT PROBLEM.

22. CLEARANCE PROGRAM - INSUFFICIENT UNDERSTANDING Require further changes/training/understanding.

## WEAKNESSES AND IMPACT TO PLANT:

23. EOOS LOG - CUMBERSOME NOT FULLY FUNCTIONAL
Time and process caused delays and loss of productivity

24. CONSTANT MANAGEMENT CHANGE - PRIORITIES/DIRECTION/ JOBS
This was understood however it was identified in several critiques as a contributing factor in substandard performance issues, turnovers and lack of looking ahead.

25. SAFEGUARDS TESTING UP-FRONT FAILURE

26. INADEQUATE PRE-OUTAGES PWO REVIEWS/WALKDOWNS
PWO's not available and personnel not assigned

27. SCAFFOLDING NOT IDENTIFIED UP-FRONT
Planning/production/ISI didn't look ahead.
Excessively high number of emergent scaffolds required

28. MISUSE OF CRs

29. HIGHER DOSE RATES - PERSONNEL EXPOSURE

30. INSUFFICIENT TOOLING - JOB DELAYS

31. ISI COORDINATION
Inconsistent direction

32. OUTAGE SERVICE AIR SYSTEM
Compressors kept tripping-job delays

# WEAKNESSES AND IMPACT TO PLANT:

33. **M&TE TOOLING** - TORQUE WRENCHES/TEST GAUGES
    Increased exposure and job delays

34. **LIGHTING/POWER LOSSES DUE TO SAFEGUARDS TESTING**
    Caught personnel unprepared

35. **PLANT GAITRONICS & TELEPHONE UNRELIABLE**
    Need proper maintenance

36. **TP&L WORK AREA**
    No place to prep TP&L

# LESSONS LEARNED/CORRECTIVE ACTIONS:

1. Develop method to set UGS and Rx Head
2. Assign program owner, revise program
3. Quality of personnel(temps, supervision)
   Dedicate personnel to look ahead
   Ensure expectations/requirements are known
4. Limit number of mech temps
   Restrict uprelieving, plant's best interest only
5. More selective in supervision selection
6. Explore alternate ways of getting work performed
7. Develop dedicated ramp team with inside or outside resources(SGRP will do ramp in SL1-15)
8. Capture lessons learned and incorporate INTO SL1-15
9. Adopt more realistic approach based on walkdowns
   Build hose data base for drain/vent hoses
10. Negotiate long term service contracts for major pump overhauls at outside facilities(PTN)
11. Ensure feedback is forwarded to QA
12. Plan better, this was known/recognized pre-outage.
13. Bring in tool room personnel(UT2) one week prior to rolling into outage shifts
14. Explore alternate ways to perform insulation/lagging
15. Revise program
16. Develop housekeeping vs maintenance leak program criteria still to be zero leaks
17. Replicate PTN program
18. Don't bury head in sand
19. Develop strict turnover requirements

## LESSONS LEARNED/CORRECTIVE ACTIONS:

(Continued)

20. Don't hire personnel with previous record of unsafe work practices/change scaffold material/resist mid outage shift changes
21. Selection of supervision, supervision ratios, number of temps
22. Task team formed to identify and resolve issues 23. Replicate PTN'S EOOS log and computerized signoffs
24. More pre-outage job planning/walkdowns and preparation needed
25. Do safeguards at end of outage(recommendation)
26. Get PWO'S out and dedicate production people to walkdown jobs preoutage
27. Enforce preoutage walkdowns by all groups and scaffolds requests(including planners)
28. Culture of the site
29. HP/Site Management aware of issues
30. Under evaluation by tooling supervisor

# ENGINEERING

Carl Bible

# PSL UNIT 2 CYCLE 10 REFUELING OUTAGE CRITIQUE - ENGINEERING

Successes:

- Venturi cleaning - MW gain
- New Integrated Safeguards procedure
- Flow accelerated Corrosion CR's - issued in 3 days
- Handled a large number of emergent issues

Items Requiring Improvement:

- Use of Condition Report dispositions to perform field work versus other engineering documents

- Continuing problem with software changes
  a) Inadequate PMT/V&V
  b) Refueling Machine PLC

- Longterm plan for the Refueling Machine PLC

- Better planning on valve inspections and testing up-front, i.e. review previous Votes testing, LLRTs, etc.

- Resources and running of crews for scaffolding/insulation work need to clearly be in Maintenance's house not Engineering's

Items Requiring Improvement (cont):

- A number of issues that should have been well defined prior to the outage emerged as issues:

  - 2B1 RCP seal
  - SIT dump test w/UGS in
  - Connection of Containment A/C
  - Refueling Machine setpoints - Camera deletion
  - ICW new slip-on flanges thicker then original
  - Various PMAI issues
  - MSIV indications
  - PORV strain gauge removal

- A number of emergent issues were not handled well up-front:

  - RCP oil collection modification
  - MI cable support issue
  - Containment Sump
  - 2A1 EDG electric priming pump
  - DC Tie breaker testing

Items Requiring Improvement (cont):

- POD scheduling of Engineering activities
  - FAC
  - Snubber Inspections
  - ISI/IST
  - Maintenance manpower support and scaffolding coordination
  - Need to verify all logic ties
  - Need file for all engineering POD items/better descriptions

- Condition Reports were excessive (197) Need to stratify for efficiency improvements

- Engineering Design Errors
  - Hydrogen excess flow checkvalve
  - DDPS calometric change/FW venturi calc's
  - CEDM duct flange leakage, engineering removed margin

- PC/M and procedures for full core off-load.
  Generically need to review significant / new system alignments and tests

- New MSSV procedure not sufficiently "walked through" .

Items Requiring Improvement (cont):

- Review valve LLRT history to determine where softseats could be installed

- Control of Technical Specification surveillances (central database)

- SCE readiness for mode 4 walkdown - determine criteria/value added

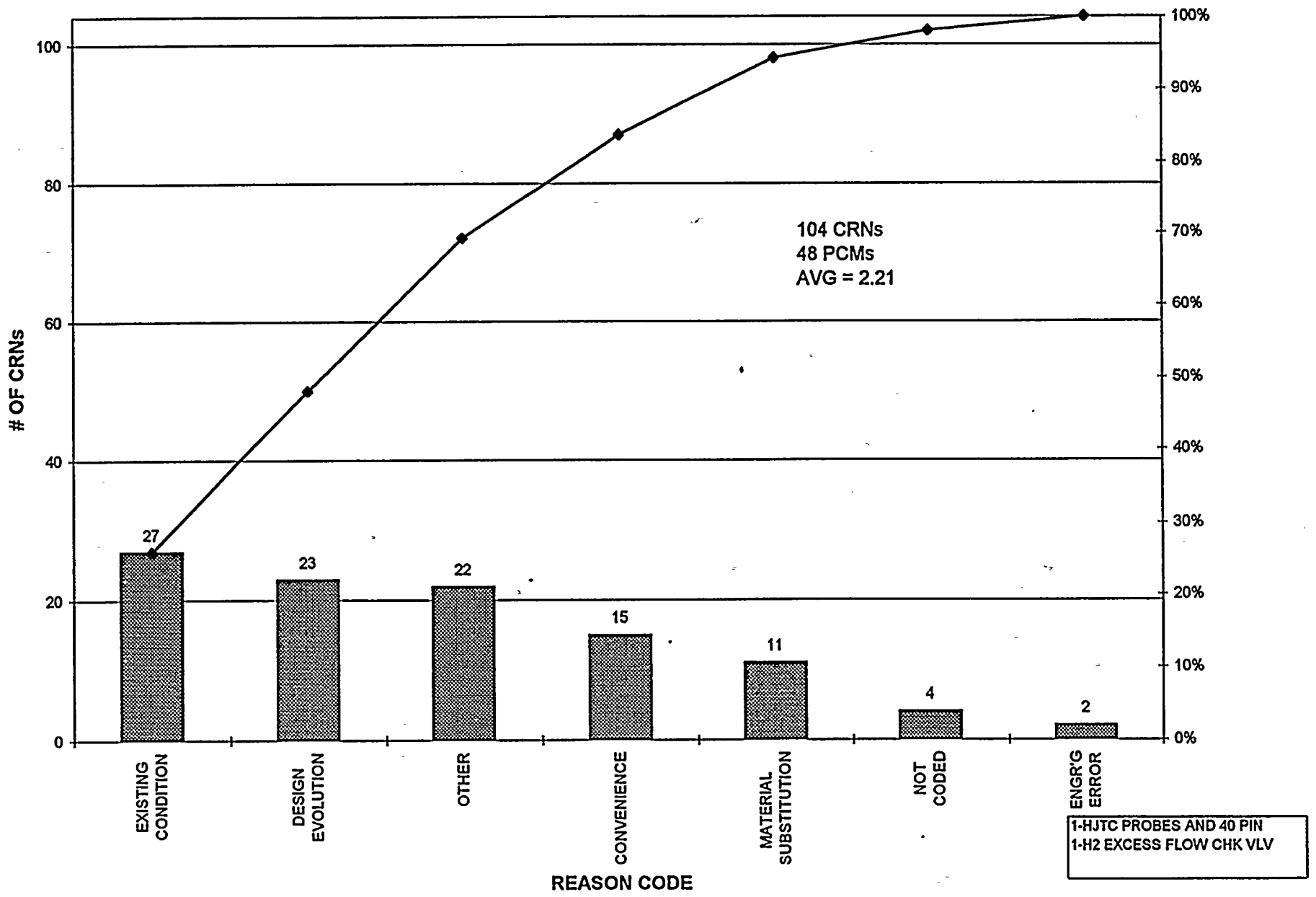
- CSI/FAC coordination

- Training on FAC minimum wall issues

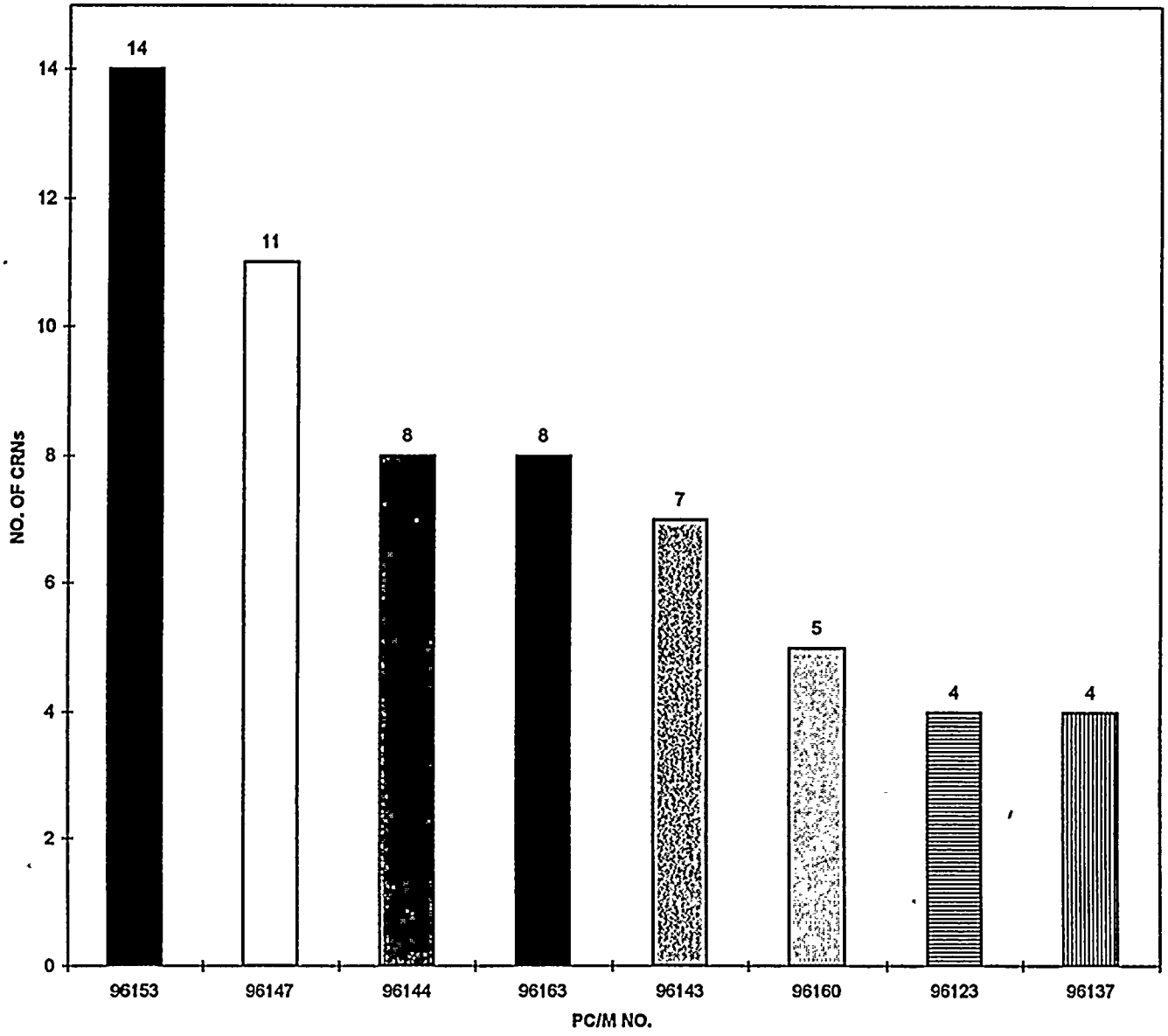
- Better understanding of inspections such as Anchor Darling check valves needed

- Engineering readiness and ability to "Look Ahead" at upcoming tests (i.e. meet initial conditions, test equipment readiness, etc.)

# SL2-10 OUTAGE CRNs



## SL2-10 OUTAGE
## PC/M vs. NO. OF CRNs




96153 QUICKLOC FLANGE
96147 FW FLOW VENTURI
96144 HJTC PROBE/40 PIN
96163 T-LAG/RAD. SHLD
96143 T-LAG COND. REROUTE
96160 RCGVS SOL.
96123 AFWP WARMUP LINE
96137 EDG RELAYS

# SERVICES

Dennis Fadden

# Prepare for Operations Training Accreditation Renewal

| | |
|---|---|
| ✓ Performed external evaluation | complete 2/28/97 |
| ✓ Conducted self-evaluation | complete 3/28/97 |
| ✓ Developed draft Accreditation Self-Evaluation Report (ASER) | complete 4/30/97 |
| ✓ Submitted ASER | complete 5/08/97 |
| ✓ Conducted follow-up assessment on unseen areas | complete 5/23/97 |
| ✓ Collected and shipped materials to INPO | complete 5/30/97 |
| ➡ Implementing corrective actions | underway |
| ➡ Accreditation Team Visit | 6/23/97 through 6/27/97 |
| ➡ Perform Mock Board | 9/02/97 |
| ➡ National Accreditation Board Presentation | 9/17/97 |

# Enhance Training Programs and Processes

## On-the-Job Training (OJT) and Evaluation

- ✓ Strengthened processes per ACAD and industry best practices
- ✓ Increased oversight of training and evaluations

## Student and Management Feedback Process

- ✓ Streamlined feedback and analysis activities
- → Emphasizing responsibilities to managers and students (2 training strengths + 2 improvements)

## Non-Licensed Operator Initial Training

- ✓ Redesigned watchstation final qualification packages
- ✓ Obtained management support of defined training expectations

# Upgrade Non-Technical Training Programs

## Maintenance SupervisorTraining

- ✓ Verified current supervisors' qualifications to ACAD responsibilities and accountabilities
- ✓ Designed professional development matrix

## Shift Supervisor Training

- ✓ Revised qualification and mentoring requirements
- → Preparing personal professional development plans for incumbent shift supervisors

## Engineering Support Personnel Training

- ✓ Redesigned Engineering qualification cards
- → Conducting new engineer training with department
- → Increasing simulator training time

# Eliminate Backlogs

## Eliminate TSAR Backlog

- ✓ Reduced by 12% 5/02/97 through 06/06/97 (171/1400)
- ✓ Reduced potential risk-significant needs analyses by 65% as of 06/06/97 (296/459)

## Enhance Instructor Continuing Training

- ✓ Established Instructor Training Review Committee
- ✓ Implemented joint simulator instructor continuing training with PTN
- → Implementing Annual Training Plan to address identified instructor needs

## Implement Instrument & Control Training

- → Providing systems training requested by customer

## Increase Level of Effort in Benchmarking

- → Improving OJT/TPE, management training, other enhancements based on trips to McGuire, SSNTA, and INPO

# Improve Line Management Ownership of St. Lucie Training

- ✓ Emphasized industry expectations
- ✓ Initiated line manager approval of training materials and session presentation
- ✓ Trained NPSs and other managers in observation skills and Systematic Approach to Training
- ✓ Enhanced effectiveness of PTABs and TRCs through meeting chairmanship by plant department head and participation by job incumbent
- ✓ Established line management ownership indicator
- → Establishing maintenance manager approval for job qualifications

# MATERIALS MANAGEMENT

Gil Boissy

# NMM SL2-10 OUTAGE CRITIQUE

6/10/97

| | CRITIQUE ITEM | WORK GROUP | SUGGESTED RESOLUTION |
|---|---|---|---|
| | **WEAKNESSES** | | |
| 1 | Material request for Section XI , were not identified as a Section XI activity by the user at the issue counter (at the time of issue). NMM must be aware material is for a Section XI activity in order to issue the reserved/tagged pre-screened material | All Plant Maint. Groups | The work order packages should be in the possession of the individual requesting the material from the issue counter. The work order clearly identifies the Section XI requirement applies and can be easily conveyed to NMM. |
| 2 | Lack of experienced NMM personnel available to adequately support Dry Storage Building activities. | NMM WHSE | Beginning the week of 6/7 a training program has been implemented to expose less experienced NMM personnel in the actual responsibilities and administrative activities associated with NMM Dry Storage Building support. |
| 3 | Shipping crates for the Main Steam Safety Valves are inadequate for handling and/or storage upon return from vendor. | Valve Group | Prefabricated metal shipping crates should be utilized to ensure safe handling and material integrity. |
| 4 | | | |
| 5 | | | |

# NMM SL2-10 OUTAGE CRITIQUE

6/10/97

| | CRITIQUE ITEM | WORK GROUP | SUGGESTED RESOLUTION |
|---|---|---|---|
| | **STRENGTHS** | | |
| 1 | Implementation of the Parts/Materials List, and incorporating the list in the Outage POD. This report was the main resource and a valuable tool for NMM Outage Coordinators to represent NMM accountabilities during the outage meetings. | W/C, NMM | This new report has now become part of daily business with an updated report incorporated with the daily POD. |
| 2 | Teamwork. The NMM Department worked as team from the point of outage prep, to the end of the schedule. Assistance was lent from each area, and shifted to the group that needed the support during the periods that were most critical. | All NMM Groups | Continue to focus on shifting manpower for pre-outage activities and manpower support at the issue counter, receiving and back shifts during outage. |
| 3 | 2.6 million dollars of inventory staged at pre-determined plant controlled locations prior to the start of work activities, allowed for better management of NMM manpower resources and reduced plant time at the issue counter waiting for material. | NMM WHSE | Continue and enhance the material staging program for future outages. Limited scope staging activities have now become part of daily business. |
| 4 | NMM tracking the return of repair/reconditioned material off site, provided the necessary reporting to monitor and report on due dates, for material delivery back to the site. | NMM MAG | Tracking and visibility of repairs/refurbished material is now part of daily business. |

# NMM SL2-10 OUTAGE CRITIQUE

6/10/97

| | | | |
|---|---|---|---|
| 5 | Use of temporary employees for material issue and retrieval of material from remote locations allowed NMM employees to remain in critical support roles as required. | NMM WHSE | Utilize temporary employees for future outages. |

# BUSINESS SYSTEMS

Rick Heroux

# PSL Business Systems Outage Performance

- Strengths
  - Weekly cost forecasts were more accurate than past
  - MIS maintained LANS at >98% availability
  - Deployment of computers to outage support personnel
  - Decentralized payroll clerks worked well

# PSL Business Systems Outage Performance

- Weaknesses
  - Too many 'Base' Budget problems were solved by cutting projects
  - Improve overtime Tracking and Control
  - Improve Contractor Reporting
  - Improve Temporary Employee Payroll Processing

# PSL
# Outage Cost Performance

- Budget $28,023
- Current Forecast $27,781
- Forecast Underrun $ 242

# 1998 BUDGET

| | |
|---|---|
| OUTAGE | $19,490,000 |
| NON-OUTAGE PAYROLL | $41,650,000 |
| OTHER NON-OUTAGE | $29,241,000 |
| NON-DISTRIBUTED FUNDS (ALL PROJECTS, ALL CONTINGENCY) | $ 5,119,000 |
| TOTAL | $95,500,000 |

# STEAM GENERATOR REPLACEMENT PROJECT

Dick Daley

# STEAM GENERATOR REPLACEMENT PROJECT

## SGRP Overview

- RSGs are here in storage inside protected area with $N_2$ Blanket on primary and secondary sides.

- SGT staff in place.
  - Documents (EPs, WPs, DPs & QEPs) being prepared and approved; to be complete by August 1, 1997.

- Detail work schedules being developed - integrating with plant activities.

- FPL staff being assembled - combination FPL and Contractor - 75%.

- Major pieces of handling equipment (TLD.TG, HTS) are coming from Netherlands in late August or early September. TLD will be assembled in South Forty for load testing and equipment checkouts.

- Start pouring concrete for TG base in mid-August.

- Plans for OSG disposal are being developed.
  - Contract with Chem Nuclear in place.
  - Submittal to DOT in progress.

# LICENSING

Ed Weinkam

# ST. LUCIE LICENSING

1997 NRC Enforcement Status

- In excess of an estimated 1700 NRC Inspection hours incurred for 1997
  - 1997 Violation Status
    - Violations = 5 Received
      - NIR 97-04 included two violations
        - Excessive Use of Overtime
        - Clearance Errors
    - Non-Cited Violations = 8 Received

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Recently Completed Inspections and Visits

- Inservice Inspection Program Implementation
- Thermo-Lag Modifications (NRR)
- Sea Turtle Biological Opinion (NRR/NMFS)
- Engineering Open Items
- Visiting Resident Inspectors Objectivity Visits
- SALP Management Meeting
- NRR "Associate Director for Projects" Site Visit

# ST. LUCIE LICENSING

- Inspections and Meetings through September 1997

  Licensed Operator Exams - Weeks of 6/2/97 and 6/16/97

  Employee Concerns Program - Week of 6/9/97

  Fitness For Duty Followup - 6/16/97 through 6/18/97

  A/E Inspection: Open Issues - Week of 6/16/97

  Bimonthly Status Meeting - 6/17/97

  Steam Generator Replacement - Week of 7/7/97

  Engineering Information Meeting- 7/15/97

  Fire Protection - Thermo-lag Implementation - Week of 7/21/97

  Maintenance - Week of 8/11/97

  Effectiveness of Controls in Identifying, Resolving, and Preventing Problems: Corrective Action Review - Week of 8/18/97

  Vehicle Barrier Implementation - 8/28/97 and 8/29/97

  Steam Generator Replacement Heavy Lift - Week of 9/8/97

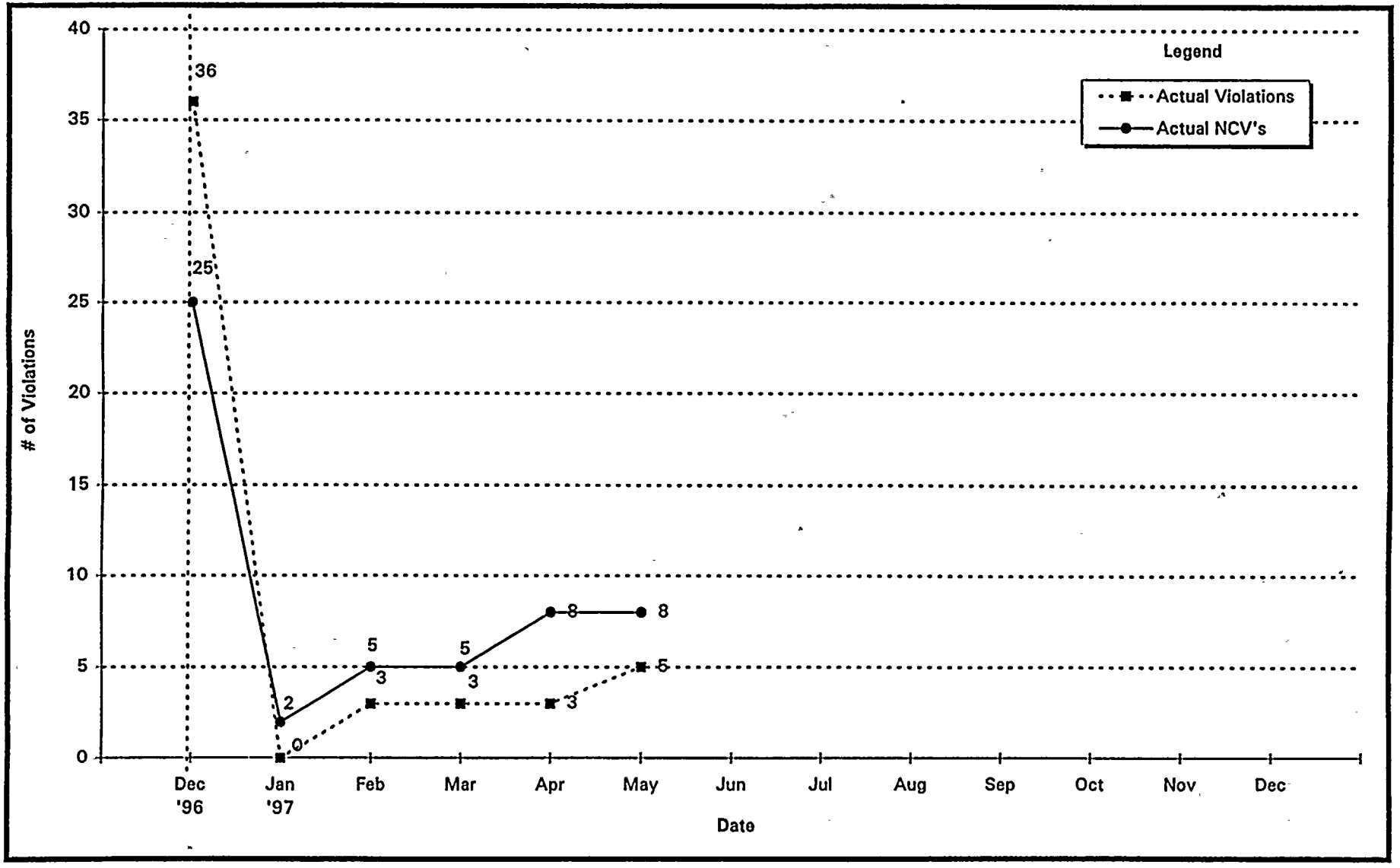
  GL 89-10: MOV Program Closeout - Weeks of 9/15/97 and 9/22/97

# ST. LUCIE LICENSING

Licensing Activities

- Significant Licensing Issues Resolved
  - Unit 1
    - Refueling Water Tank Bottom ASME Code Repair Approved as Relief Request
    - Small Break LOCA Reanalysis with 30% Steam Generator Tube Plugging
- Significant Licensing Issues Under NRR Review
  - Unit 1
    - Steam Generator Runtime Analysis Radiological Impacts Evaluation
  - Units 1 and 2
    - New Fuel Storage Areas Exemption from the Criticality Monitoring Requirements of 10 CFR §70.24
    - Incidental Take Permit Biological Opinion

# NRC VIOLATIONS




Date Source: E. Weinkam

# QUALITY ASSURANCE

Wes Bladow

# Quality Assurance

## Audit Results:

- **Primary Coolant Sources Outside Containment Audit**
  - Improper maintenance of test records
  - Improper use of drawings

- **Maintenance Functional Area Audit**
  - Work Control Process Efficiency and Error Reduction
  - Minor Maintenance Program Implementation
  - Control of Parts
  - Safety Related Scaffold Approval Practices

- **Document Control and Records**
  - Improper storage of QA Records

- **ODCM / PCP / Effluents Functional Area Audit**
  - Control of Quality Related Items
  - Control of effluent process monitor set points
  - Calibration procedures for gaseous process monitors
  - Configuration control of liquid radiation monitor
  - Maintenance of effluent monitoring equipment

- **Security and Safeguards Information Control Functional Area Audit**
  - Hand geometry unit maintenance procedures
  - Security software verification practices
  - Security Department records
  - Inadequate Corrective action for access control deficiencies

## Focus areas for Corrective Action Identified During the Unit 2 Outage:

- Configuration Management & PCM Implementation
  - Stop Work Order -PC/M 97011M "Structural and Valve Modification Associated with Removal/Reinstallation and Refurbishment of HCV 08-1B
  - ICI PCM Implementation
  - Core reload PC/M Implementation
  - CRN used to revise the feedwater flow venturi PC/M
  - Replacement of PZR Code Safeties without a 50.59 evaluation
- Freeze Seal Implementation Practices
- Software controls
  - PAR Programmable Controller
- Clearance process Implementation
- Continuing problems with FME controls

## Overall Assessment:

- Marked improvement in Outage Management
- Excellent steam generator tube plugging by ABB-CENO
- Continuing problems with FME controls
- Continue to stress the need to follow procedures