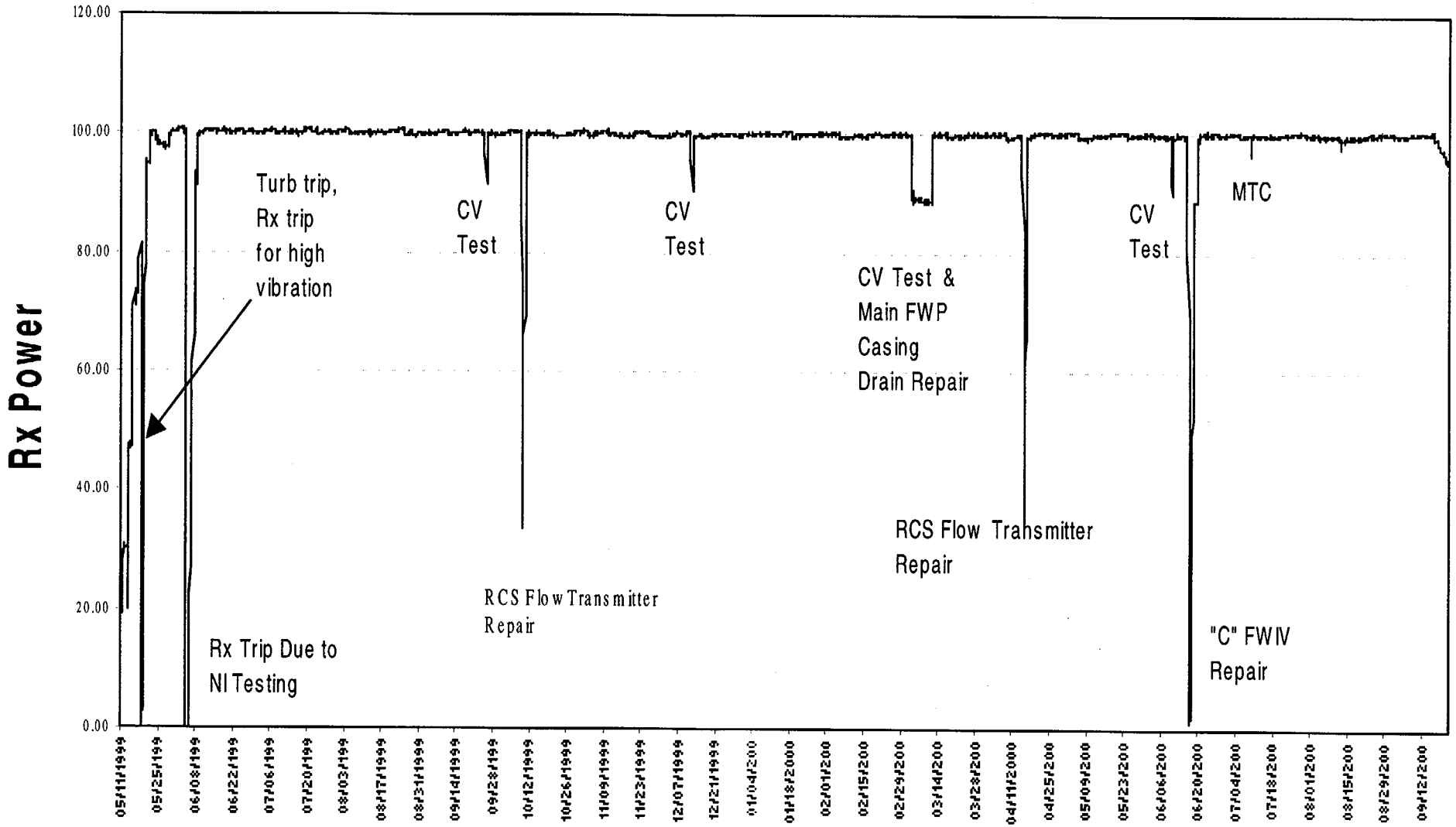
Cycle Operation

Bruce Williams

Cycle 11 Power History



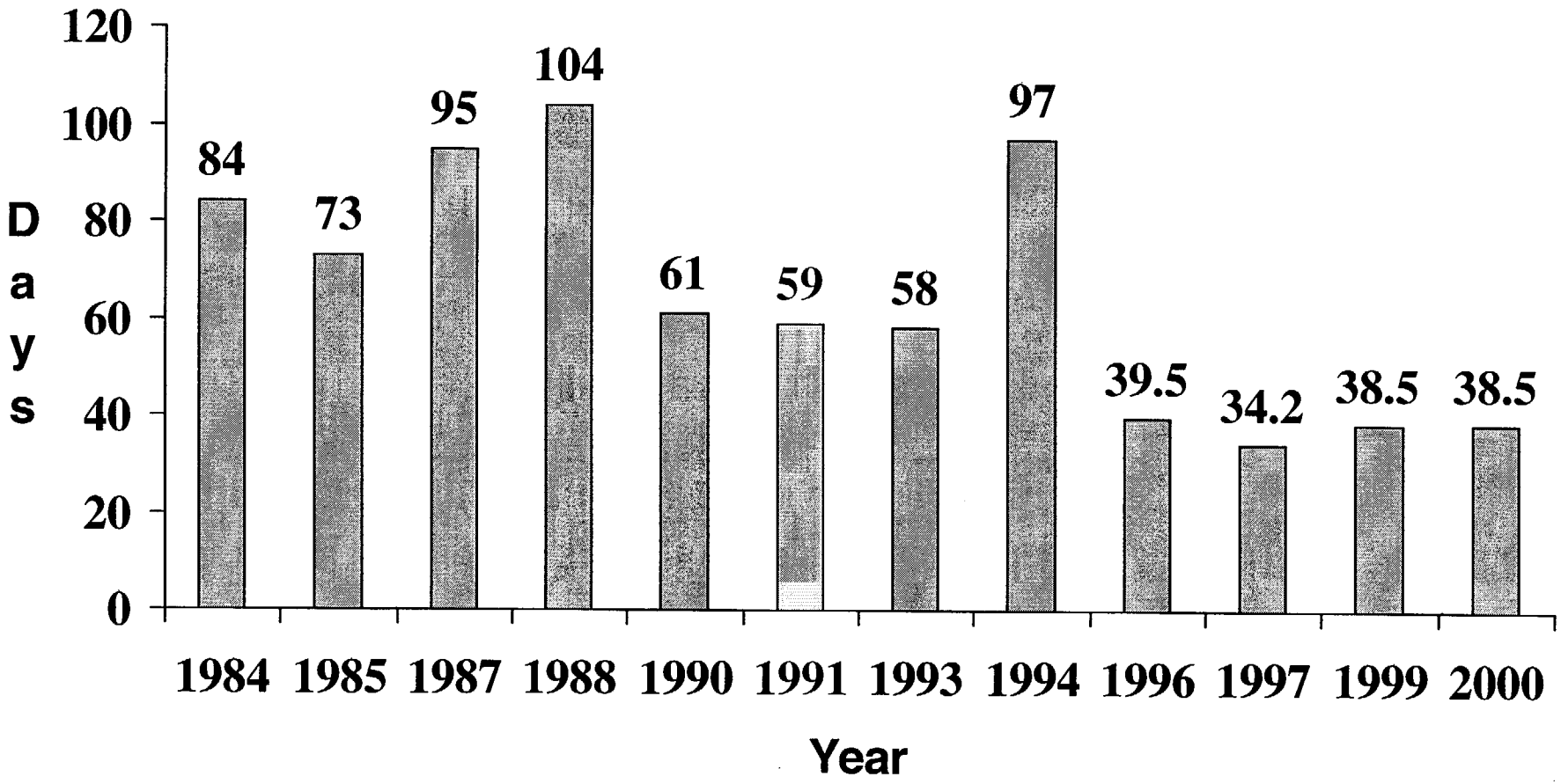
Refuel 12

Alan Torres

Refuel -12

- Was Refuel 11 a success?
  - 489 days critical
  - On-line for 376 days / 112 Days
  - Capacity factor Year to date 98.45%

V. C. Summer Outage History



Refuel -12

- Goals
  - Duration 38.5 days
    - Work window 35.5 days
  - ALARA Goal 110 REM
    - Use of new resin to reduce source term
    - Working Goal approach
    - Single train RHR cool down
    - Increase use of steam dumps

Refuel -12

- Goals
  - Safety
    - No Significant Events (as defined by INPO)
    - Less than 4 OSHA Recordable Events
  - Business
    - $15.2 million

Refuel -12

- Keys to a Successful Outage
  - Preparation/readiness reviews
  - Contingency planning
  - Use of O/E Data internal /external
  - Teambuilding and Employee involvement

Refuel -12

- Improvements:
  - Assembled S/G team
    - Outside assistance in program development
    - Incorporated lessons learned from IP Tube rupture
  - Implement EOOS Schedule review Along with AI-600 Defense in-depth review
  - Increase management presence on all shifts
  - Dry run walk through of Schedule with critical groups

Refuel -12

- Major work
  - Split Pin Replacement
  - 100% Eddy current Inspection of S/G's
  - Sludge Lance and Visual inspection of Secondary sides of all S/G's
  - Seal Replacement on 2 RCP's
  - Replace NNS batteries

Refuel -12

- Major work
  - Main Generator Breaker Overhaul
  - IWE/IWL Inspection
  - Switchyard work on XTF 31/32

Refuel -12

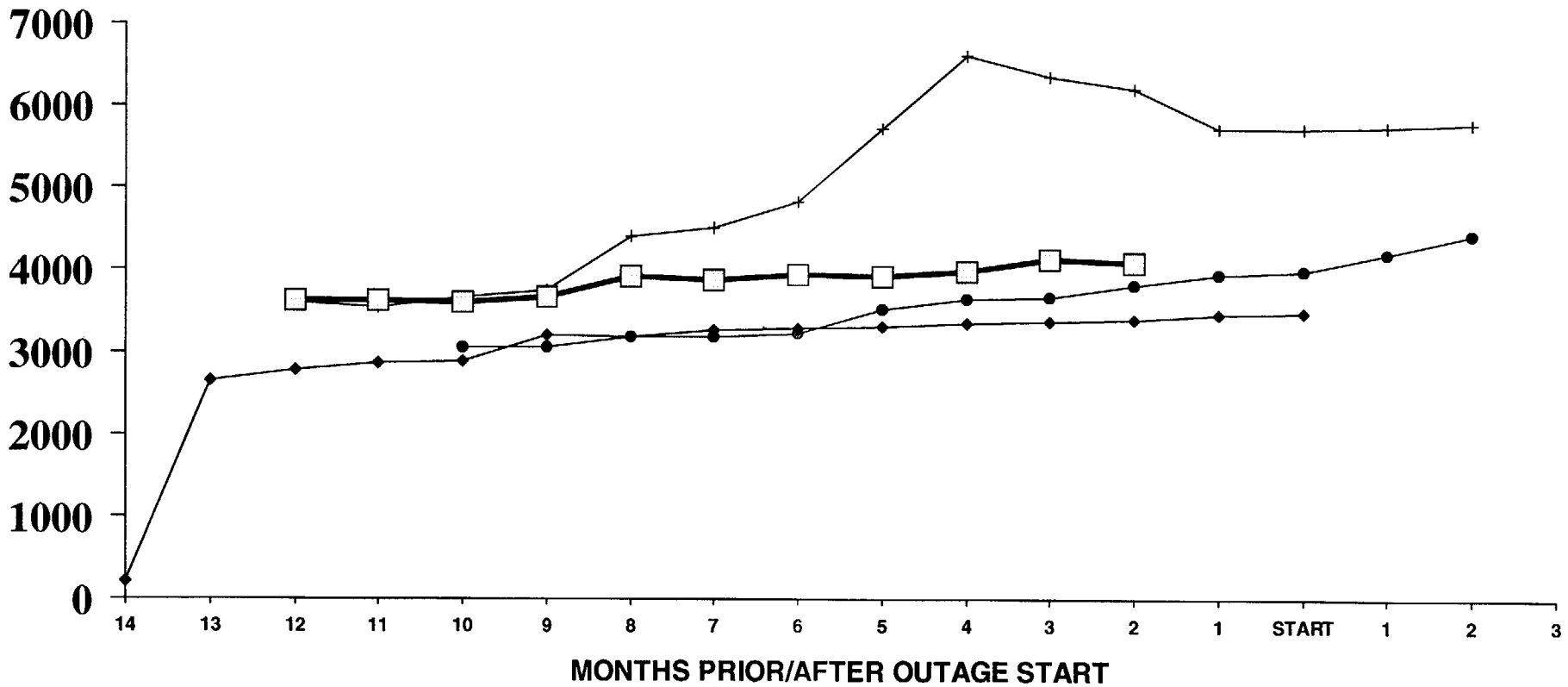
- Reliability and Margin Improvements
  - FW/HD Heater digital level controls
  - Condenser System Rerate
  - RB flooding Equipment Changes
  - RCP CCW check valve replacement
  - Replace Heat Exchangers on B D/G

REFUEL OUTAGE TOTAL ACTIVITIES IDENTIFIED COMPARISON GRAPH

SCE&G
A SCANA COMPANY

UPDATED: 09/11/00

SCOPE
ORIGINAL 3928
LAST WEEK 4126
CURRENT 4096



Refuel -12

- Station Challenges
  - Potential Fuel Issues
  - Stay focused on the big picture
  - Communication "30 minute rule"
  - Work Scope control
  - Distractions
  - Contractor Resources

Refuel -12

- Summary
  - Emphasis on safety over schedule
  - Focus on teamwork
  - Stress Communications
  - Improve plant reliability

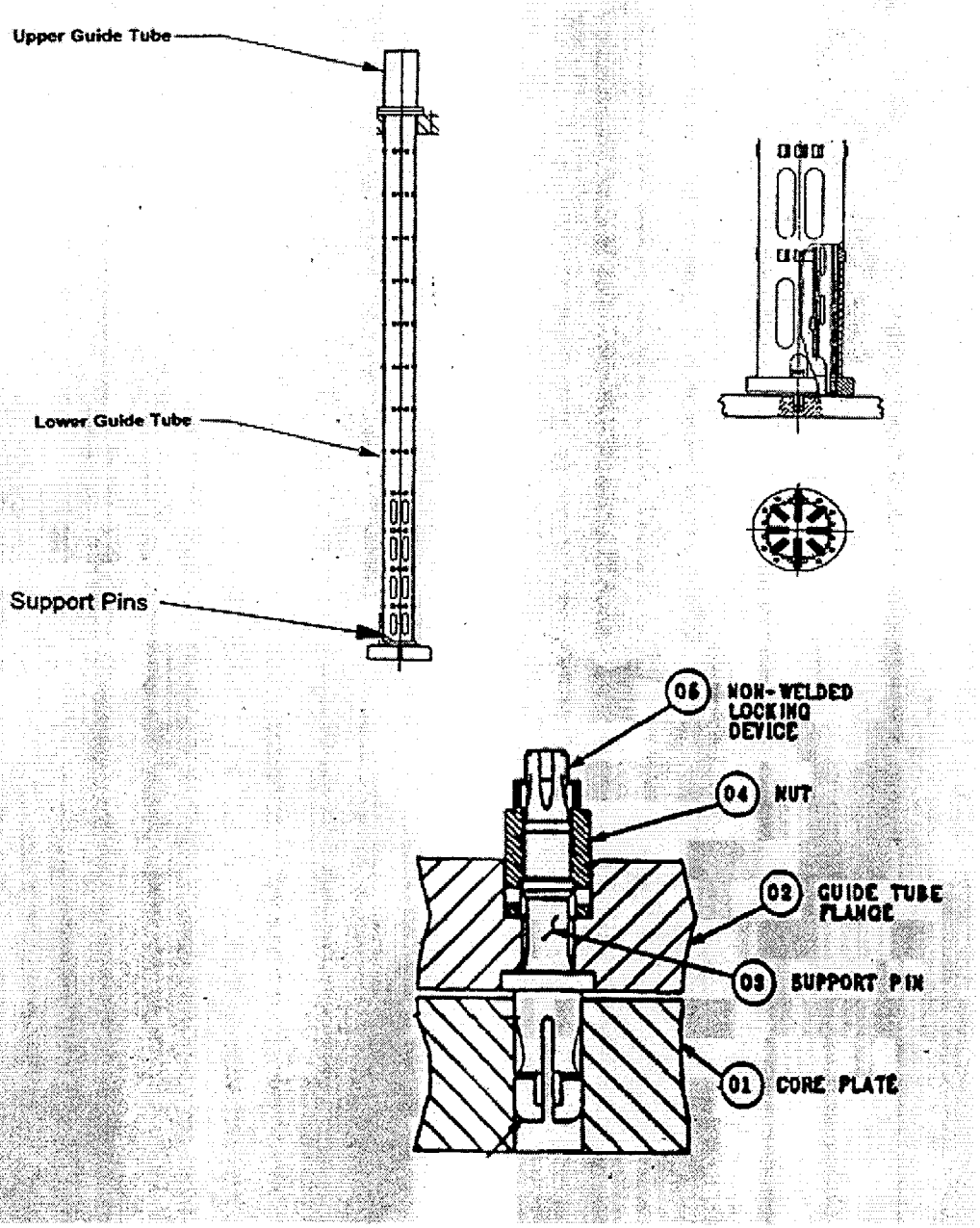
SCE&G
A SCANA COMPANY

Split Pins

Larry Cunningham
(Project Manager)

Scope

- Westinghouse to Replace the 114 Guide Tube Support Pins and Nuts


Upper Guide Tube
Lower Guide Tube
Support Pins
06 NON-WELDED LOCKING DEVICE
04 NUT
02 GUIDE TUBE FLANGE
03 SUPPORT PIN
01 CORE PLATE

Schedule

- October 9th-11th - Install DSSR in Cavity
- October 14th - Stage Temporary Reactor Vessel Cover
- October 17th- Install/Test Temporary Cover
- October 17th-19th - Move Equipment into Containment
- October 19th-28th - Split Pin Replacement Work
- October 30th - Remove Temporary Reactor Vessel Cover

Procedures

- Westinghouse
  - Install/Remove DSSR
  - Work Platform Assembly/Disassemble
  - Mini-station Assembly/Disassembly
  - Support Pin Replacement
- VCS
  - Transferring Drive Shafts
  - Install/Test/Remove Temporary Reactor Vessel Cover
  - Drain Down Below Temporary Reactor Vessel Cover

Personnel

- **Approximately 33 people Westinghouse**
- **Day Shift / Night Shift Project Manager (SCE&G)**
- **Outage Management (SCE&G)**
- **RB Coordinators (SCE&G)**

FME Control

- Personnel/Material Accountability
- FME Area Watch
- Post as FME Area
- Establish Buffer Zone
- Tape Pockets/Use Lanyards/Inspect Tools
- Debris Baskets
- Final Inspection

Lessons Learned

- Verify Thermocouple Tip Locations and Orientations
- Guide Tube Crack
- Dropped Drive Rod
- McGuire/Farley

ALARA

- 3.5 Rem for project Based on 2mr/hr Background fields
- HP Oversight of Removal of Tools from Cavity Water (SCE&G)

Human Performance

- Formal Turnover at beginning of Shift
- Lessons Learned Reminders During Formal Turnovers
- On Station Turnovers
- Assigned Leads for Each Workstation / Shift
- Use Crew Feedback

Summary

- **Ensure Personnel/Reactor Safety**
- **Human Performance**
- **Maintaining ALARA**
- **Communications**
- **Planning**

VCSNS
EFW VALVE MIS-POSITION

Preliminary Results

9/25/00

Dan Gatlin - Operations Supervisor

EMERGENCY FEEDWATER SYSTEM

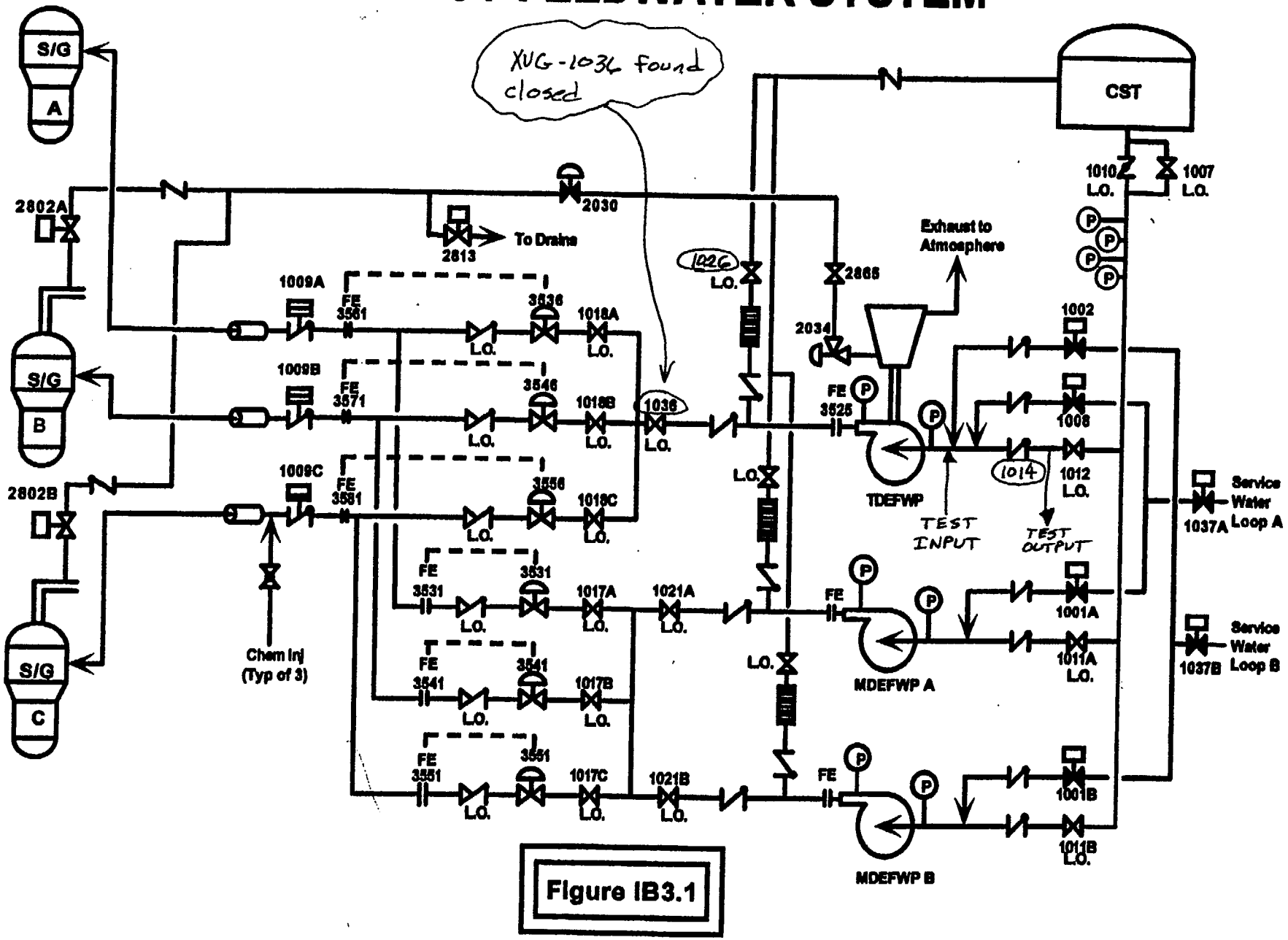
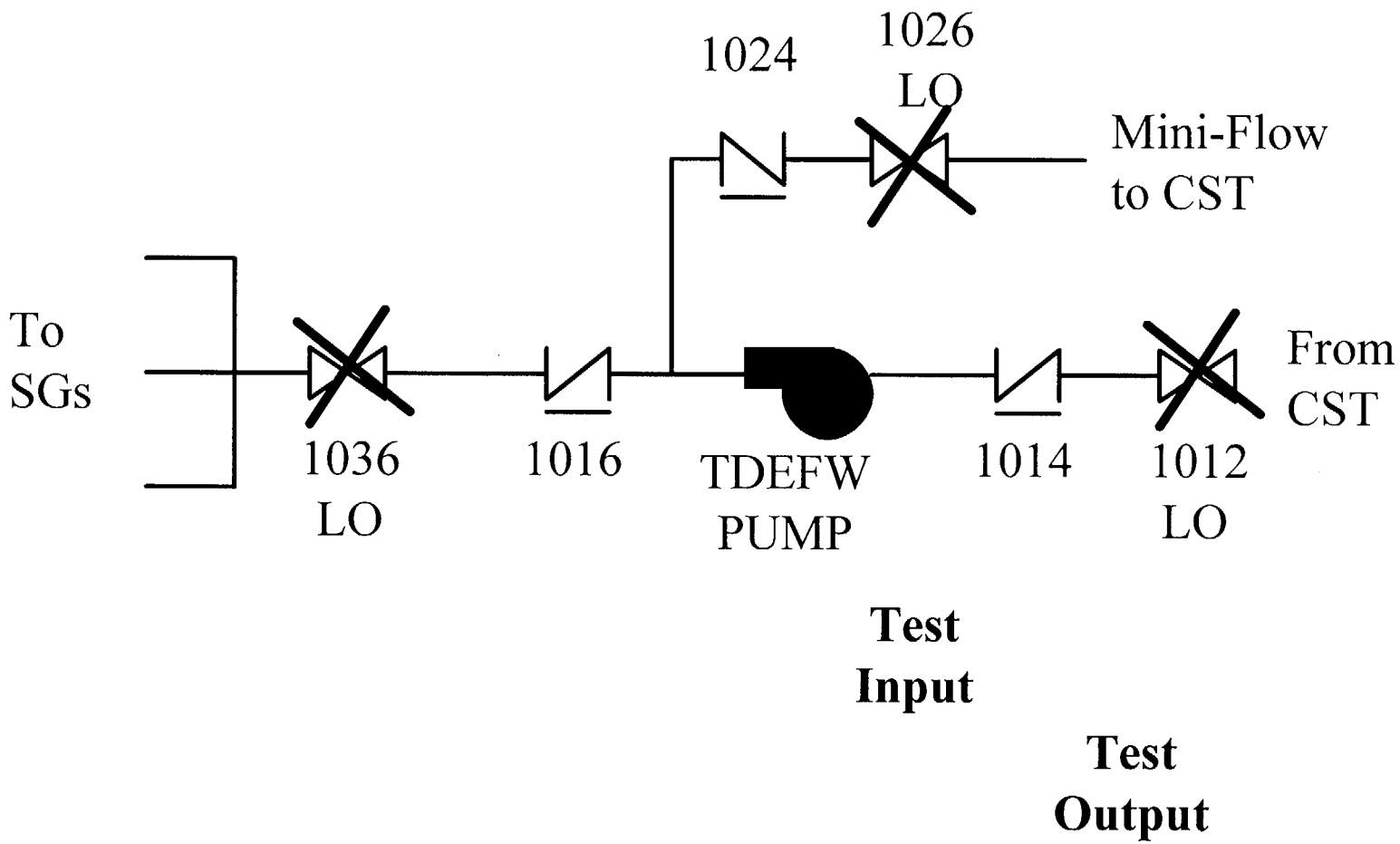


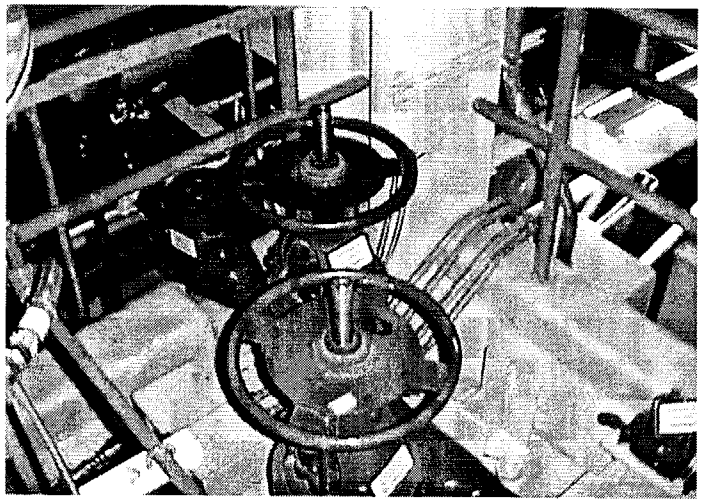
Figure IB3.1

EFW Test Schematic for XVC 1014



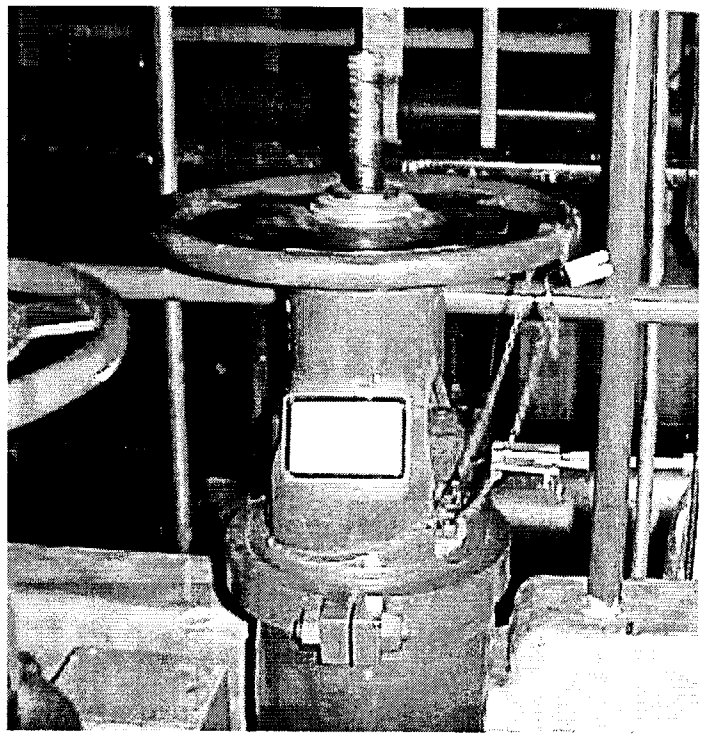
FACTS

- **On 9/21/00 (~0500), Operator #3 raised a question with control room concerning his observation of XVG-1036 not appearing to be open.**
- **At 0600, the shift engineer and duty shift supervisor broke the seal and verified valve was closed fully prior to re-open and properly locking.**
- **Other similar EF valves in the area were inspected and found to appear to be in the correct position.**



FACTS

- **On 8/4/00 (~0300), operator #1 closed XVG-1036 "TDEFW Discharge Isolation Vlv" as part of Surveillance Test STP-120.004.**
- **On completion of the test (~0400), operator #1 installed a locking tab and chain on XVG-1036 after failing to re-open the valve. (Problem 1)**
- **Operator #2 independently verified position of XVG-1036 with chain and lock in place. (Problem 2)**



Actions Taken Immediately

- Incident Response Team Assembled augmented with PRA support.
- Day Shift operators briefed on event and correct method to position/verify locked valves.
- Duty Shift Supv asked to perform an immediate verification of locked EF valves.
- Duty Shift Supv asked to review past locked valves manipulated or verified by Operator #1 or #2 and verify correct positions.

Actions Taken Immediately

- Root Cause Commissioned
  - **Operator #1, #2, Shift Test Specialist that were involved with STP 120.004 on 8/4/00 were assembled at 2100 on 9/21 for "walk-through" analysis.**
  - **Root Cause is in progress with completion expected prior to Management Review Board on 9/26.**
  - **Preliminary Results**

ACTIONS BEING CONSIDERED OR IN PROGRESS

- Training
  - Shift Briefs in progress (4/5 complete)
  - Improve formal training (JPMs, STAR Lab, …)
- Procedures
  - Improvements to SAP 153 (IV) & Locked Valve Program
  - Critical valve manipulations - Body of procedure versus attachments
- Peer Review
  - Review of INPO practices against ours
  - Outside Peer review of configuration control
- Use of Risk insights in Configuration Control

Questions