UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TEXAS 76011-4005

November 10, 2003

James J. Sheppard, President and
Chief Executive Officer
STP Nuclear Operating Company
P.O. Box 289
Wadsworth, Texas 77483

SUBJECT: SUMMARY OF MEETING TO INTRODUCE THE SOUTH TEXAS PROJECT MANAGEMENT TEAM, TO DISCUSS PLANT CHALLENGES, AND TO DISCUSS THE SITE STRATEGIC PERFORMANCE IMPROVEMENT PLAN

Dear Mr. Sheppard:

This refers to the public meeting conducted at the NRC Region IV office on November 5, 2003, between your staff and the NRC. The participants discussed activities at the site since September 2002 and the status of your Strategic Performance Improvement Plan. Your staff provided useful insight into past challenges and successes.

The attendance list is enclosed with this summary (Enclosure 1). A copy of the presentation slides is also enclosed (Enclosure 2).

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response will be made available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Should you have any questions concerning this matter, we will be pleased to discuss them with you.

Sincerely,

WD Johnson

William D. Johnson, Chief
Project Branch A
Division of Reactor Projects

Dockets: 50-498
50-499
Licenses: NPF-76
NPF-80

Enclosures:
1. Attendance List
2. Licensee Presentation

cc w/enclosures:
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DRP Director **(ATH)**
DRS Director **(DDC)**
Senior Resident Inspector **(JXC2)**
Branch Chief, DRP/A **(WDJ)**
Senior Project Engineer, DRP/A **(TRF)**
Staff Chief, DRP/TSS **(PHH)**
RITS Coordinator **(NBH)**

ADAMS: ■ Yes ☐ No Initials: __wdj__
■ Publicly Available ☐ Non-Publicly Available ☐ Sensitive ■ Non-Sensitive

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RIV:SPE:DRP/A	C:DRP/A			
TRFarnholtz;mjs	WDJohnson			
/RA/	***/RA/***			
11/6/03	11/10/03			

OFFICIAL RECORD COPY T=Telephone E=E-mail F=Fax

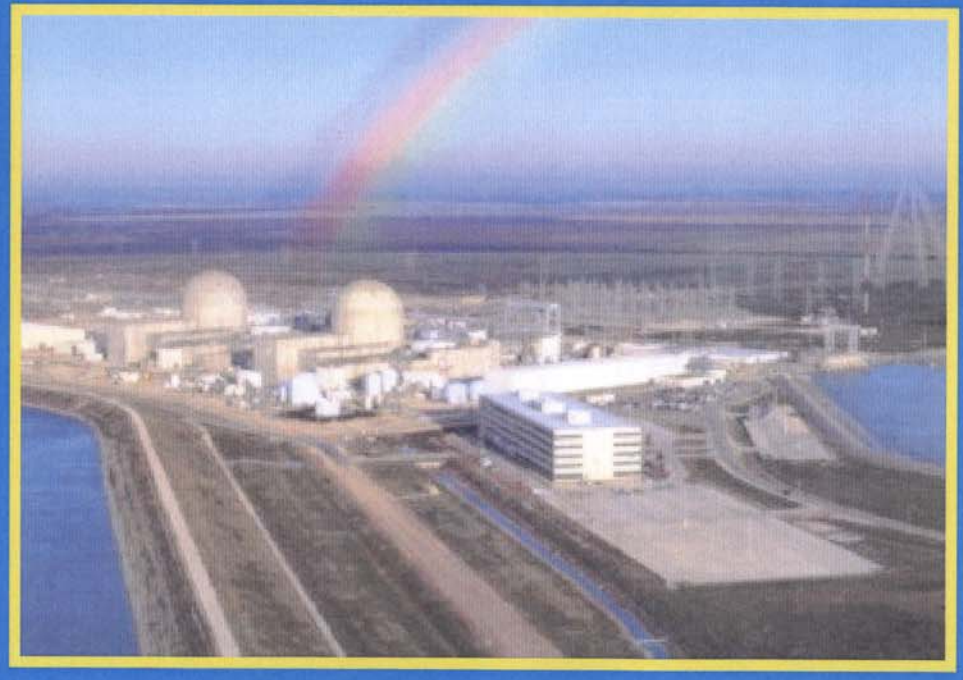
Enclosure 1

STP Strategic Performance Improvement Plan Meeting

11/5/03 1-3 p.m.

NAME	TITLE	ORGANIZATION
B. Mallet	Regional Administrator	NRC/RIV/ORA
T. Gwynn	Deputy Regional Administrator	NRC/RIV/ORA
A. Howell	Director, Division of Reactor Projects	NRC/RIV/DRP
D. Powers	Senior Technical Analyst	NRC/RIV/DRS
W. Johnson	Chief, Projects Branch A	NRC/RIV/DRP/PBA
G. Guerra	Resident Inspector	NRC/RIV/DRP/PBA
T. Farnholtz	Senior Project Engineer	NRC/RIV/DRP/PBA
J. Sheppard	President and CEO	STPNOC
G. Parkey	Vice President, Generation	STPNOC
T. Jordan	Vice President, Engineering and Technical Services	STPNOC
E. Halpin	Plant General Manager	STPNOC
M. Meier	General Manger, Station Support	STPNOC
M. McBurnett	Manager, Nuclear Safety Assurance	STPNOC
T. Hayward	Senior Reactor Operator	STPNOC
C. Canady	Director, Nuclear/Coal Generation	City of Austin

STPNOC
Road Map to Excellence
November 5, 2003



STP Nuclear Operating Company

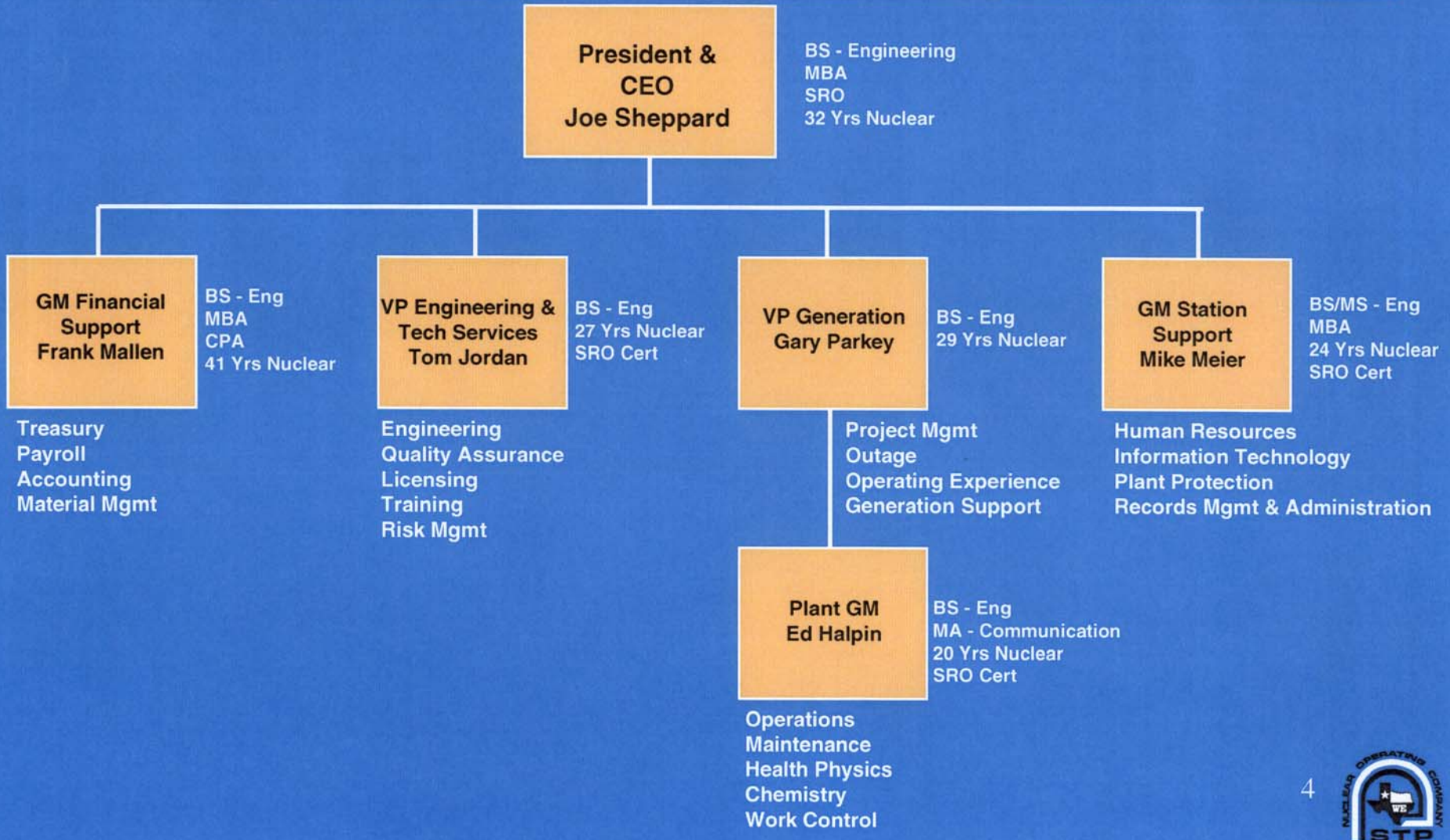
Desired Outcomes

- Introduce STP leadership team
- Discuss challenges and Strategic Performance Improvement Plan
- Solicit feedback

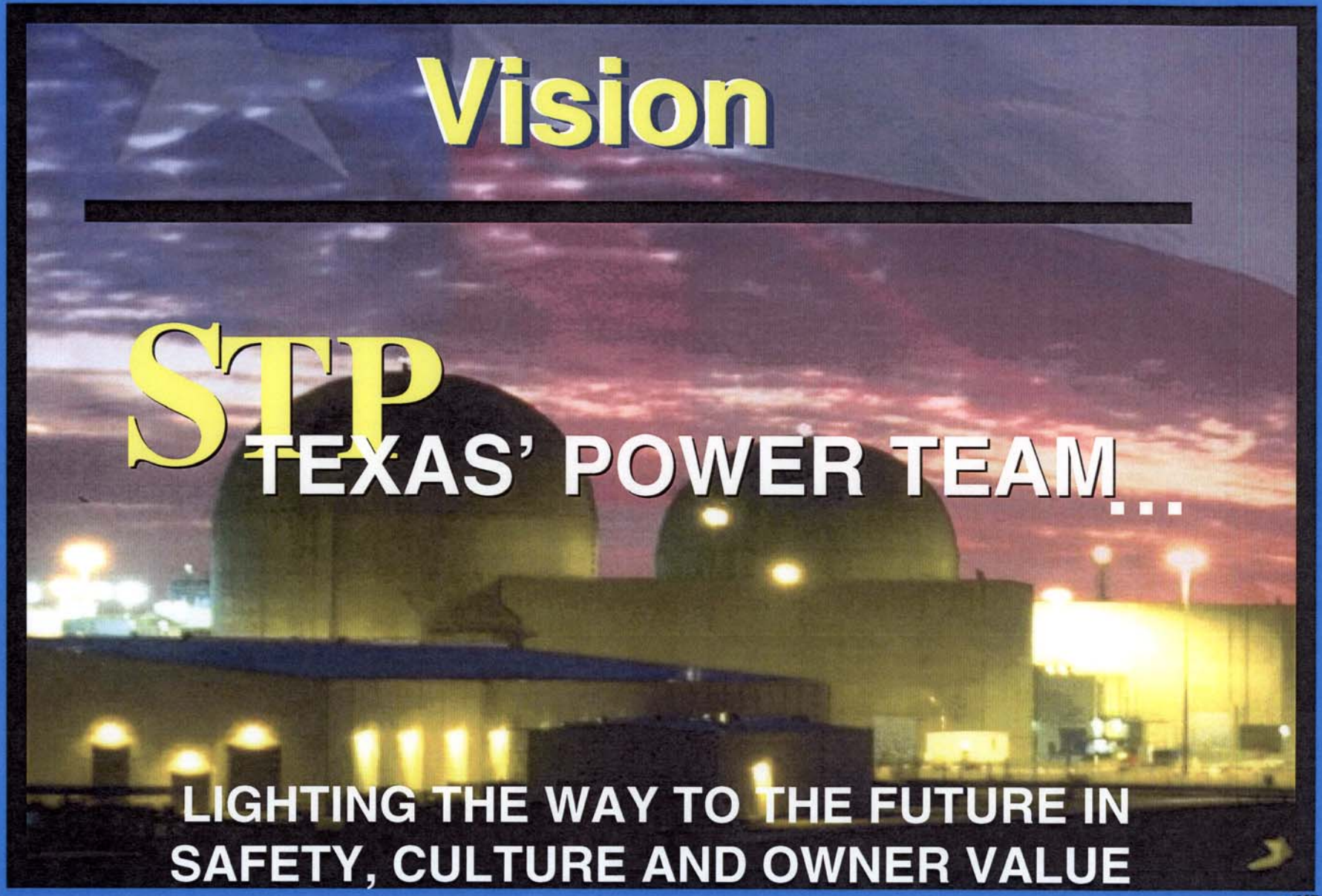
STP Team

- Joe Sheppard, President & CEO
- Gary Parkey, VP Generation
- Tom Jordan, VP Engineering & Technical Services
- Ed Halpin, Plant General Manager
- Mike Meier, General Manager Station Support

Organization Structure



Vision



STP

TEXAS' POWER TEAM...

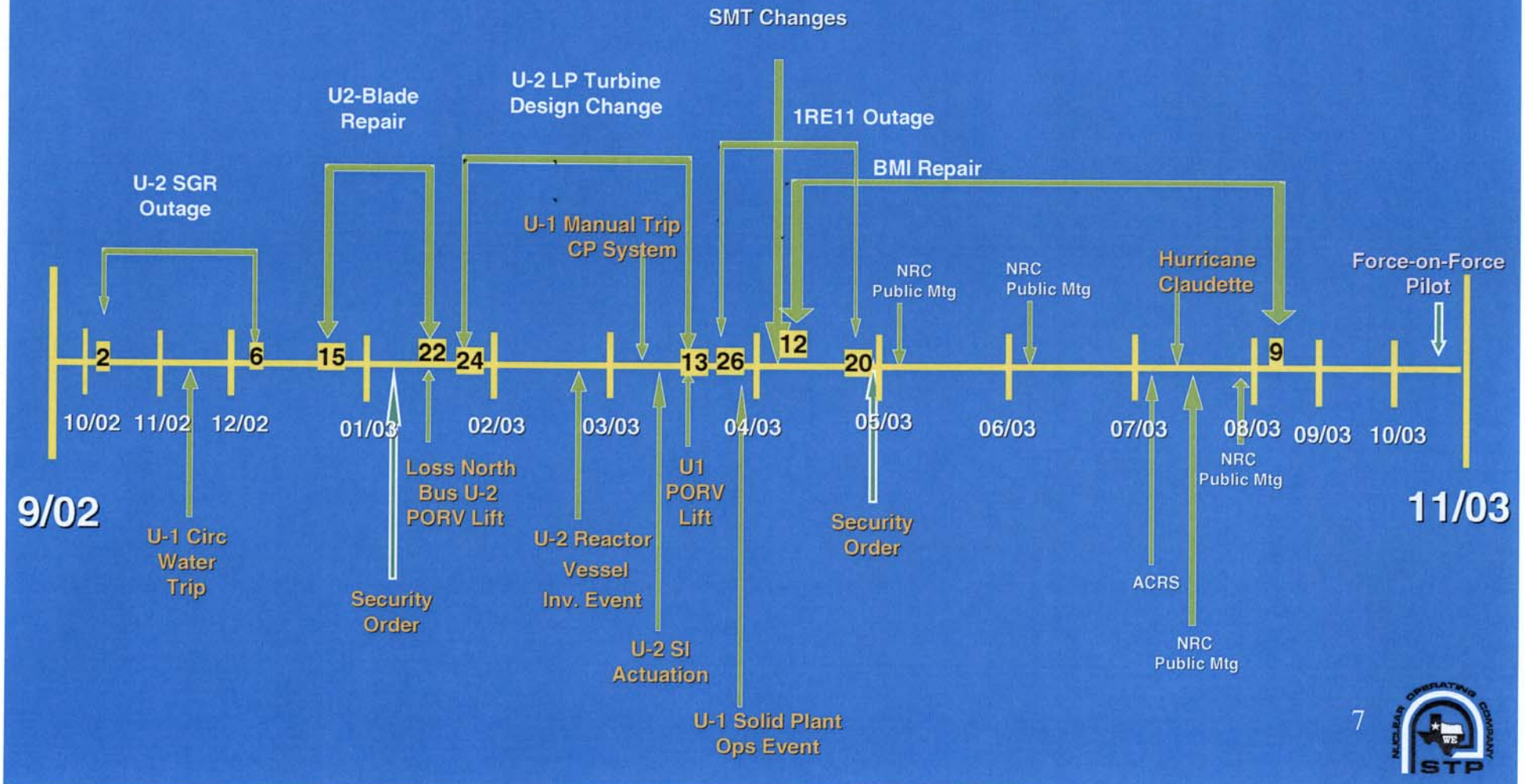
LIGHTING THE WAY TO THE FUTURE IN SAFETY, CULTURE AND OWNER VALUE

NUCLEAR OPERATING COMPANY STP

STP Design

- 12,000-acre two-unit site
- 4-loop Westinghouse PWR
- 3853 Mwt per unit
- Three safety trains
- 14-foot fuel
- Rapid refueling design

Timeline


SMT Changes
U2-Blade Repair
U-2 LP Turbine Design Change
1RE11 Outage
BMI Repair
U-2 SGR Outage
U-1 Manual Trip CP System
NRC Public Mtg
NRC Public Mtg
Hurricane Claudette
Force-on-Force Pilot
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U-1 Circ Water Trip
Security Order
Loss North Bus U-2 PORV Lift
U-2 Reactor Vessel Inv. Event
U-2 SI Actuation
U1 PORV Lift
U-1 Solid Plant Ops Event
Security Order
ACRS
NRC Public Mtg
NRC Public Mtg
STP

Where Have We Been ?

- January 2002 - October 2002
  - Deregulated environment in Texas
  - INPO Evaluation
  - Preps for U2 SG Replacement
  - Implementation of STP exemption
  - Security ICM response

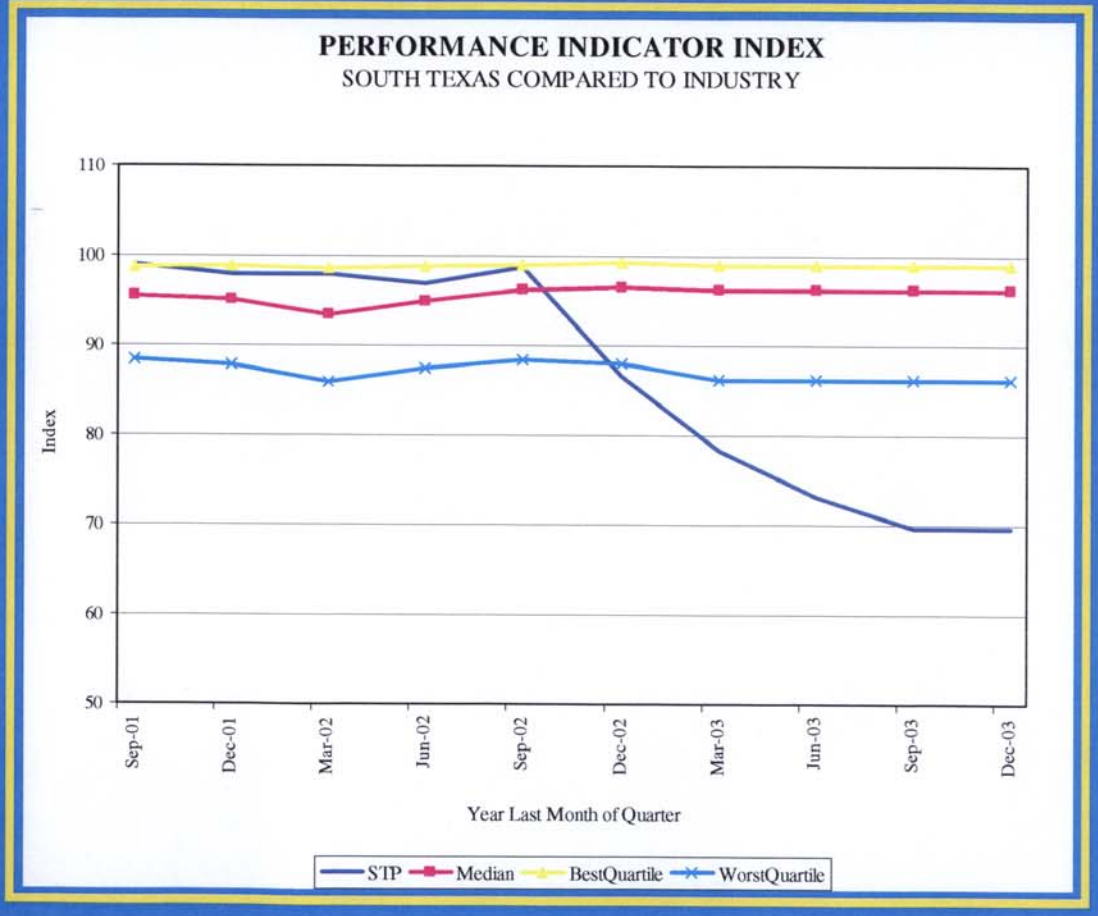
Where Have We Been ?

- October 2002 - October 2003
  - SG replacement outage - Fall 2002
  - Unit 2 turbine blade repair - December 15, 2002 - March 13, 2003
  - Start 1RE11 - March 26, 2003
  - Unit 1 BMI - April 12 - August 9, 2003
  - Security orders
  - Force-on-Force pilot - October 19-24, 2003

Challenges

- Performance indicators impacted by low capacity factors and high forced loss rate due to turbine blade outage and BMI nozzle repair
- Operational events
- Reactor trips (white NRC PI on Unit 2)

Performance Indicator Index



- Unit Capability Factor
- Forced Loss Rate
- Collective Radiation Exposure

Operational Events

- Unit 2 pressurizer PORV lifted following reactor coolant pump start 1/19/03
- Reduction in inventory from Unit 2 reactor vessel head 2/21/03
- Unit 2 SI in Mode 3 3/9/03
- Unit 1 pressurizer PORV lifted 3/12/03
- Unit 1 cold overpressure mitigation system actuation during solid plant conditions 3/26/03

Operational Events

Root Causes :

- Work planning and preparation processes did not identify atypical plant conditions
- Operator knowledge regarding Pressurizer Master Controller was deficient
- Operations personnel did not recognize when to apply some theoretical concepts learned in training

Operational Events

Actions:

- ✔ Trained operators on pressurizer pressure control and lessons learned
- ✔ Revised plant heat-up procedure - steam line moisture blowdown
- ✔ Revised work control process procedure
- ✔ Added Shutdown Risk Assessment Group agenda item - look for atypical plant conditions
- ✔ Reinforced expectations on work impact evaluation

Operational Events

Actions:

- ✔ Modified shunt reactor overcurrent protective relay scheme
- ✔ Revised plant heat-up procedure - included solid plant operations entry checklist
- ✔ Revised operating procedures - control of pressurizer pressure controllers during outages
- ✔ Revised LOR training - incorporated theoretical applications/discussions during scenario development

Plant Trips and Downpowers

May 12 -15, 2003 Self-Assessment

- Evaluated STP plant trips and downpowers
- Reviewed events between January 2000 and March 2003
- Identified performance and process issues that require station attention

Plant Trips and Downpowers

Root Cause :

Station expectations, roles, priorities, and goals are not unified in improving plant reliability.

Plant Trips and Downpowers

Actions:

- ✔ Implemented integrated plan to achieve improvement in reliability
- ✔ Developing compensatory measures for critical plant equipment awaiting modification to limit equipment failure vulnerabilities
- ✔ Simplified human performance tools
- ✔ Improving root cause evaluations and corrective actions to prevent recurrence of issues

Plant Trips and Downpowers

Actions:

- ✔ Providing improved training to individuals responsible for performing design verification activities
- ✔ Effectively communicate trending on organizational issues to appropriate management personnel
- ✔ Focus self-assessment scope to allow completion of corrective actions and effectiveness review
- ✔ Assign implementation project manager to manage the equipment reliability analysis group recommendations
- ✔ Revise management observation program

STP Successes

- Successful SG replacement outage
- Strong response to low pressure turbine blade failure
- Outstanding resolution of industry-first issue with BMI nozzles
- Excellent response to Hurricane Claudette

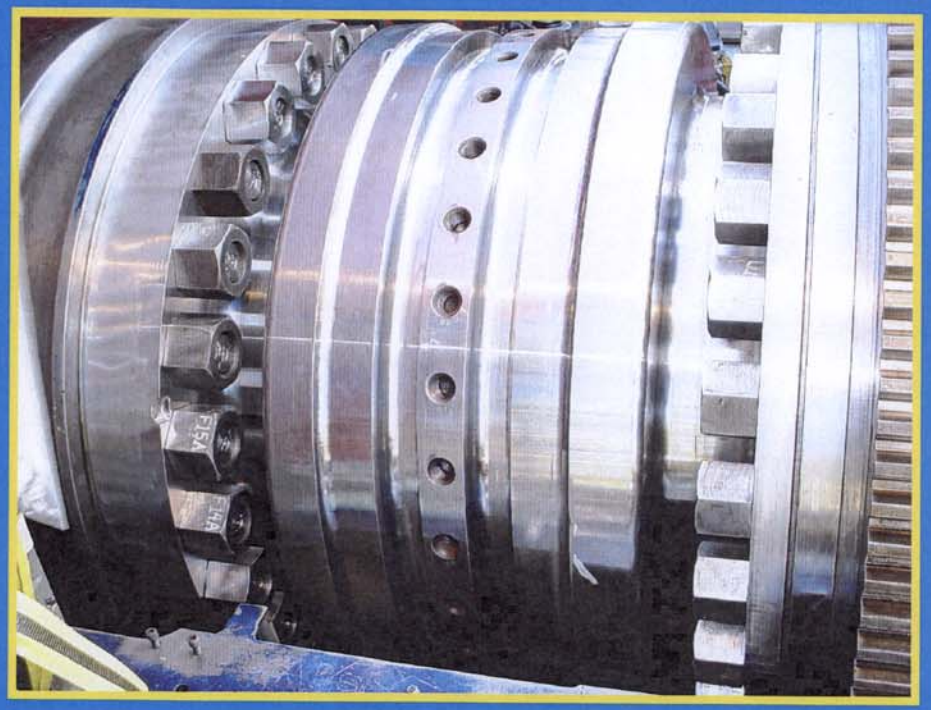
SG Replacement Outage U-2

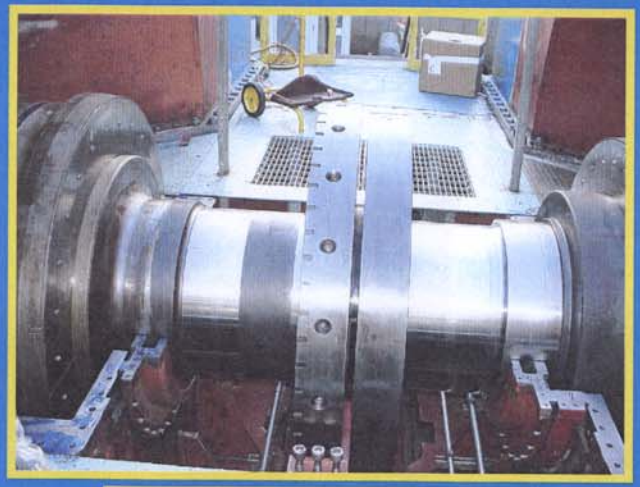
- Achieved all nuclear and personal safety goals
- Applied lessons learned from Unit 1
- Replaced 4 SGs in 65 days
- Demonstrated strong human performance
- Increased thermal power by 1.4%
- Managed higher than expected dose rates

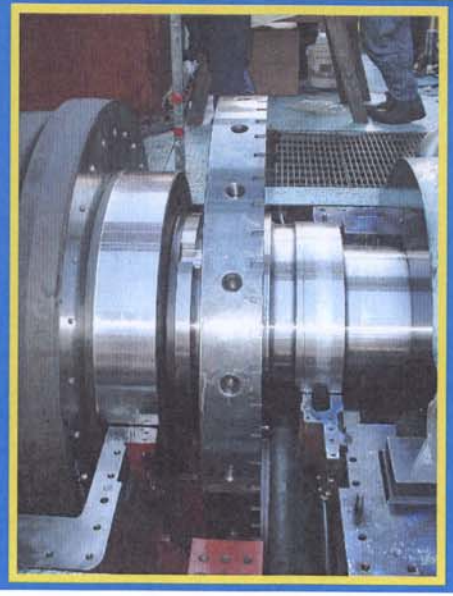
Turbine Blade Repair Paradigms

- Understand the root cause
- Develop monitoring for safe and reliable operation
- Implement corrective actions to restore design margin
- Demonstrate sound operational decision making

Turbine Blade Repair







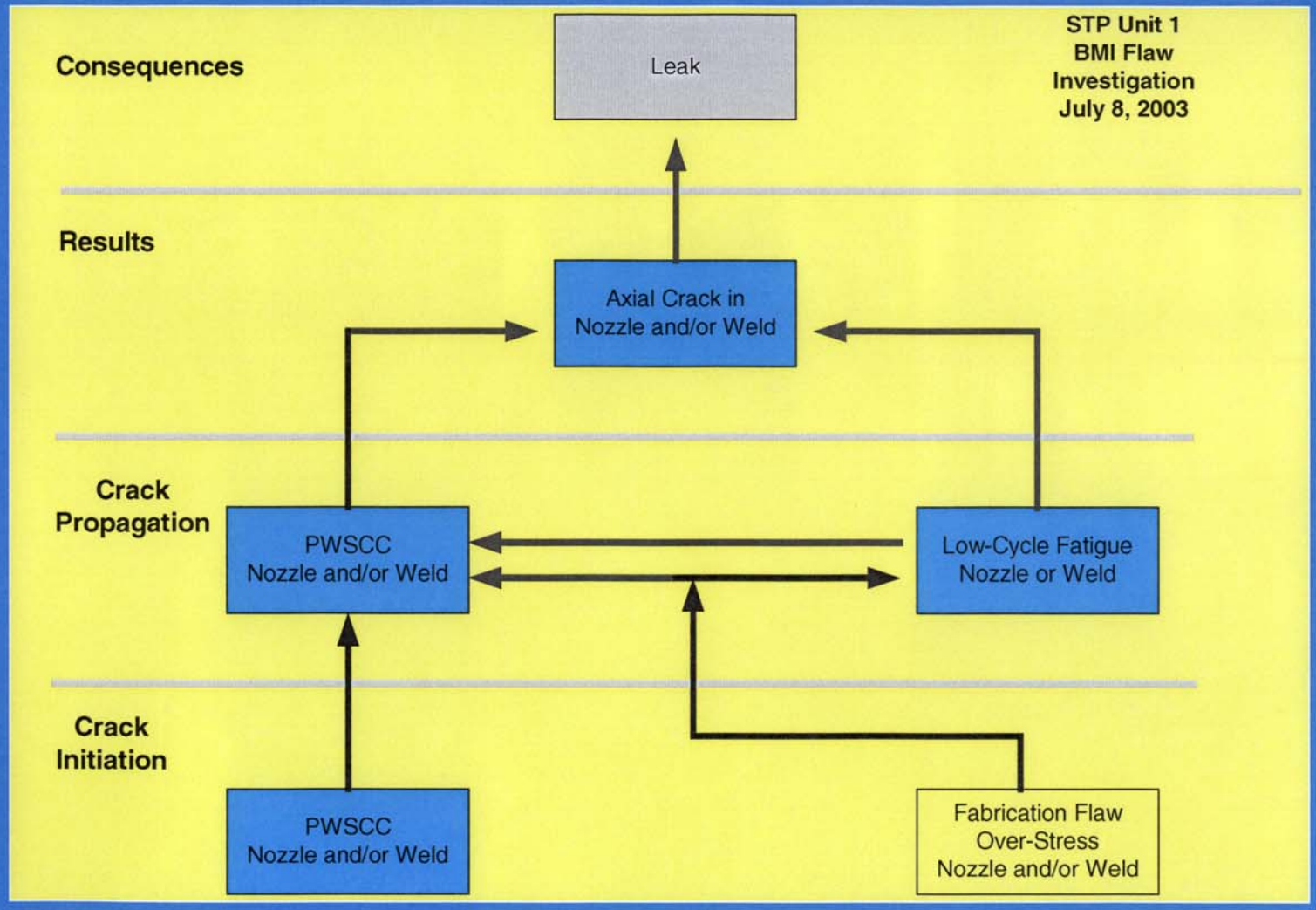
Turbine Blade Repair Summary

- Excellent conservative decision making
- Nuclear safety first and "do it right" attitude
- Unit in atypical plant configuration
- Extensive engineering analysis to identify root cause and corrective actions
- Strong project management
- Impacted preparations for 1RE11

BMI Paradigms

- Nuclear safety first
- Think 40 years not 40 days
- Pace the team
- Industry key stakeholder involvement
- Demonstrate conservative operational decision making
- Set example on how to resolve a complex technical issue

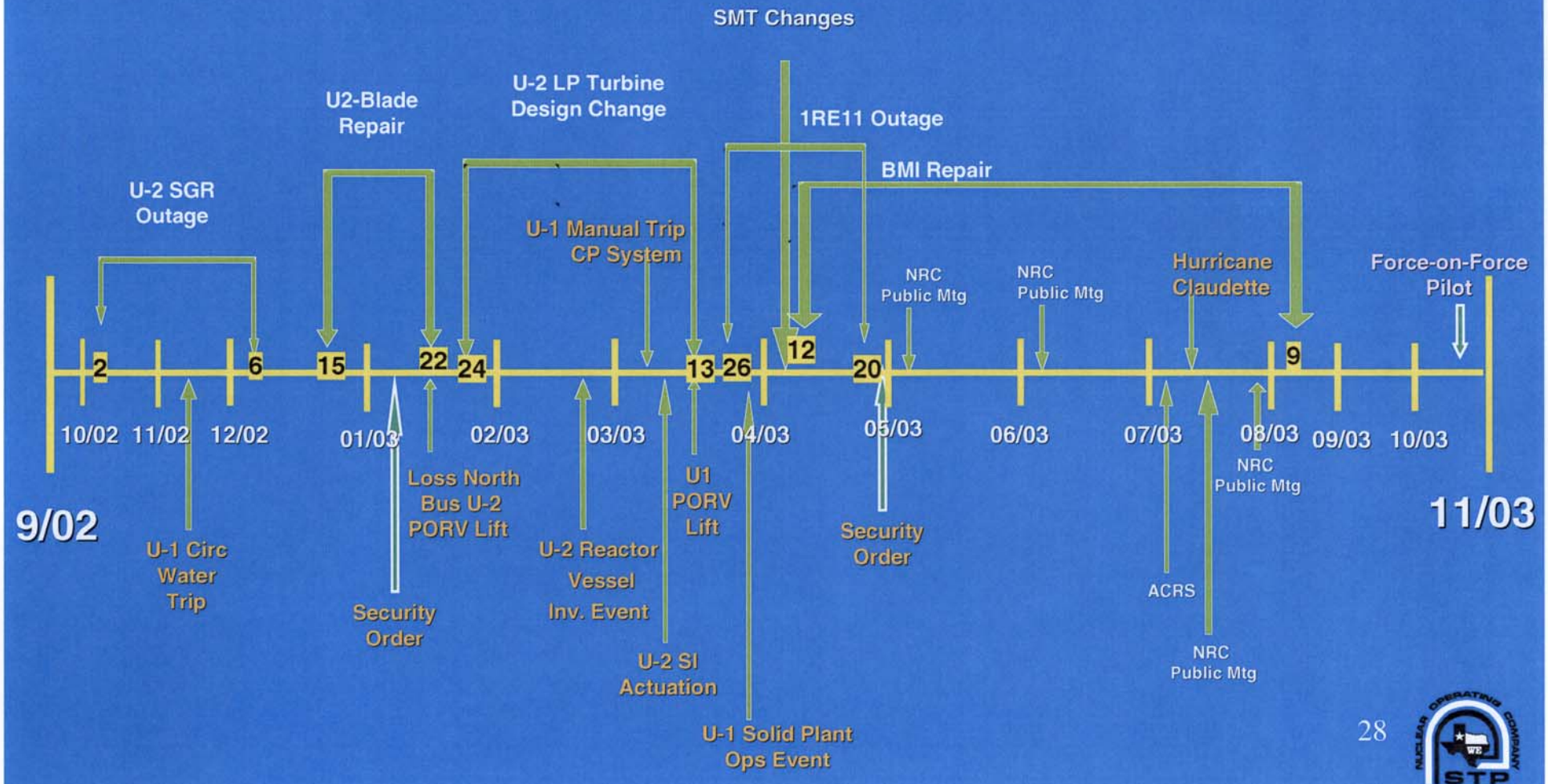
Investigation Results



BMI Summary

- "Walked the talk" regarding nuclear safety
- Demonstrated long term operational decision making
- Created new technology
- Employed industry best expertise
- Strong teamwork and safety culture provided foundation for success
- Owners provided excellent support

Timeline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NRC Public Mtg

Strategic Performance Improvement Plan

- Senior Management Team sponsored plan
- Evaluated strengths, weaknesses, opportunities, and threats (SWOT Analysis)
- Five strategic issues

Strategic Performance Improvement Plan

- Material condition and plant reliability
- Key station process implementation
- Teamwork
- Hiring and training plan
- Corrective Action Program

Plant Reliability

PLAN:

- Strategy for single point BOP failures
- Integrated plan prioritizes modifications, major outage scope and major maintenance activities
- Switchyard management strategy
- Long-range plan for plant aging and life cycle management issues

Plant Reliability

PROGRESS:

- Established equipment reliability analysis team
  - ✔ 136 of 242 systems reviewed
  - ✔ 46 vulnerabilities identified and compensatory measures established
  - ✔ 10,200 PMs reviewed; 1140 new; 1390 frequency changes
- Enhanced review of switchyard maintenance

Plant Reliability

PROGRESS:

- Contracts established for life cycle management program
- Plant Investment Plan developed which focuses combined efforts on plant reliability improvement
- Maintenance backlog reduced by 16% since April 2003

Key Process Implementation

PLAN:

- Review and revise indicators for key station processes
- Enhance management observation process
- Refine approach toward self-assessments

Key Process Implementation

PROGRESS:

- Action plans and performance indicators approved for Work Control, Outage, and Design Engineering
- Work Control performance has improved
  - ✔ Package planning 95% to 98.6%
  - ✔ Package walk-downs 57.2% to 98.5%
  - ✔ Scope stability 59.6% to 76.9%
  - ✔ ECO preparation 54.3% to 98.0%
- Self-assessment process was simplified and new leadership was assigned

NUCLEAR OPERATING COMPANY STP

Key Process Implementation

PROGRESS:

- Design Engineering process improvement
  - ✔ Completed design input and verification training
  - ✔ Completed human performance error reduction training
  - ✔ Completed training on contracts, procurement and bid specification development
  - ✔ Reorganized Design Engineering into technical discipline related sections
  - ✔ Created a modification implementation section

Teamwork

PLAN:

- Develop strategic communications plan
- Determine strategy for 2004 bargaining unit negotiations
- Reinforce facilitative leadership skills and core values

Teamwork

PROGRESS:

- Strategic communication plan in use (SMT weekly employee meetings)
- "Values in Action" training course being developed for all employees
  - Pilot completed
  - Teach beginning in May 2004
- Facilitative Leadership refresher training course being developed for managers and supervisors
  - Lesson plan developed
  - Teach beginning in May 2004

Hiring and Training Plan

PLAN:

- **Develop overall work force management strategy through 2010**

Hiring and Training Plan

PROGRESS:

- Staffing projections established through 2010
- Projections and plan reviewed by independent consultant
- Hiring plan reviewed by owners

Hiring and Training Plan

PROGRESS:

- Continuing replenishment of Operations staff

	1999	2000	2001	2002	2003	2004
Licensed	12			12		9
Non-Licensed	10		11			10

Corrective Action Program

PLAN:

- Reinforce expectations on management ownership of significant issues
- Develop leading indicators for CAP including better trending tools
- Redefine roles and responsibilities associated with the Condition Review Group
- Develop clear guidance and expectations for cause investigations

Corrective Action Program

PROGRESS:

- Expectations reinforced for management ownership
- Plant Manager chairs Condition Review Group and membership is comprised of department managers
- New trend indicators developed
- Enhancing guidance and expectations for cause investigations and CR classifications
- Weekly CR summary reviewed by managers

Recent Issues

- Security
  - Force-on-Force pilot
  - Order implementation

Recent Issues

- 4kV breakers - AFW Pump 11

  (Closing springs not charged)

  - Cause
    - Increased mechanical resistance caused by random buildup of tolerances from wear and case distortion not identified by existing overhaul program, coupled with installation of 6-turn latch reset torsion spring

Recent Issues

- 4kV breakers - AFW Pump 11
  - Actions
    - ✔ Implemented operations contingencies
    - ✔ Replace all 6-turn springs
    - ✔ Modify procurement and maintenance instructions
    - ✔ Upgrade maintenance refurbishment program
    - ✔ Conduct additional refurbishment training

Recent Issues

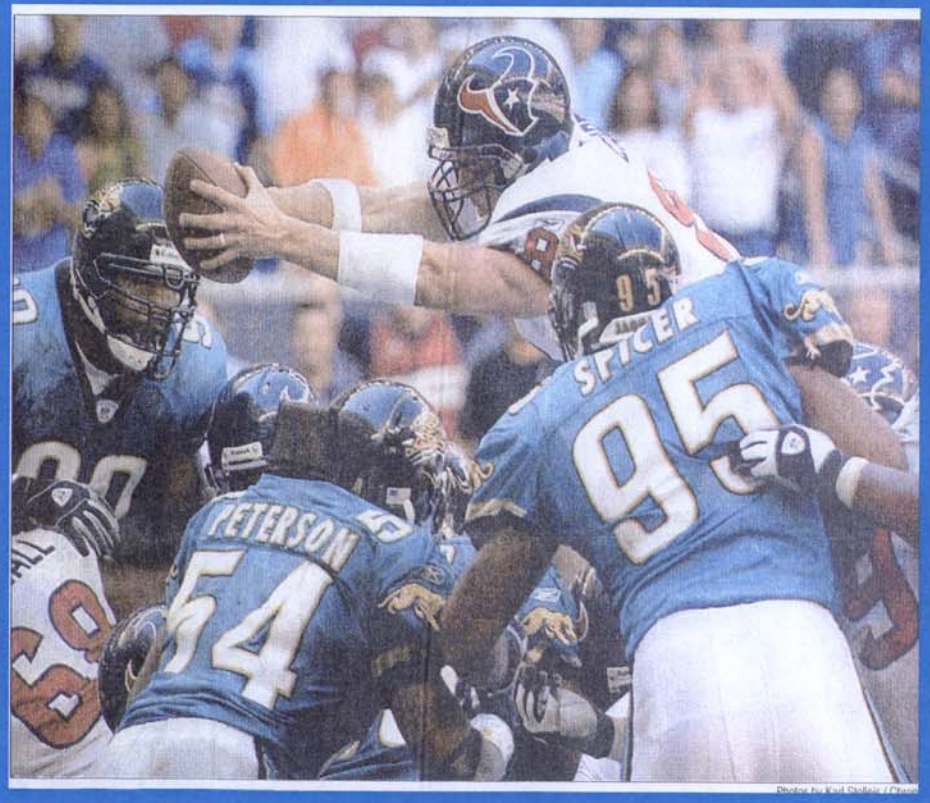
- 4kV breakers - common cause analysis

(Three cell switch failures appear to be common)

  - Cause
    - ✔ Degraded grease a potential factor in all three cell switch failures
  - Actions
    - ✔ Develop PMs to refurbish Type L2 cell switches
    - ✔ Refurbish all Class 1E 4kV Type L2 cell switches
    - ✔ Refurbish Type L2 cell switches in non-1E applications risk-ranked as significant

Recent Issues

- Managing for Excellence



WE
STP
Nuclear Operating Company

Conclusion:

- Solid vision - dedicated team
- Strong culture - teamwork stronger than before
- Plant reliability needs improvement - aggressive actions in place
- Corrective actions in place to prevent operational events
- Self-critical organization
- Strategic Plan in place
- Senior Management engaged