

Agenda
CEOG Executive Committee / NRC Meeting
November 16, 2000

- 8:30 am Introductions and Opening Remarks
- 8:35 am Feedback from NRR on the CEOG
 Sam Collins (NRC)
- 9:00 am CE Owners Group Report
 Dick Bernier (APS)
- 9:30 am Status of NRC Review of CEOG Topical Reports
 Ed Weinkam III (FPL)

Agenda
CEOG Executive Committee / NRC Meeting
November 16, 2000

- 10:00 am ZIRLO™ in CE Plants
- 10:15 am Management of RCS Pressure Boundary Integrity
 Dave Pilmer (SCE)
- 11:00 am Tour of Work Planning Center
- 11:30 am Adjourn

NRC-001

DF01

Chairman's Report

Dick Bernier

November 16, 2000

Topics

- ◆ Management Update
- ◆ Chairman's Priorities
- ◆ Strategic Technical Issues

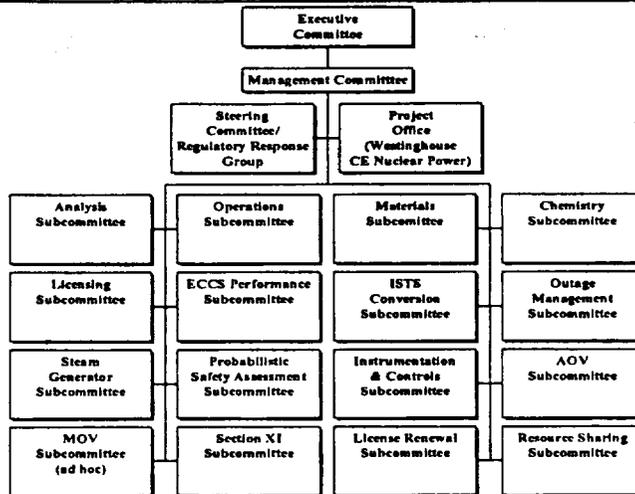
Management Update

- ◆ 2001/2002 CEOG Officers
 - Chairman - Dick Bernier (APS)
 - Vice Chairman - Gary Pavis (CCNPP)
 - Steering Committee
 - Dave Pilmer (SCE)
 - Jerry Holman (Entergy - WSES)

Management Update

- ◆ Approved Rev 12 to CEOG Charter
 - All committees called subcommittees
 - Editorial changes (change ABB to W, etc)
- ◆ Established 2001 funding cap for common funded work (\$300K)

CEOG COMBUSTION ENGINEERING OWNERS GROUP



Management Update

- ◆ Frequent Interaction with NRC staff (~bi-weekly meetings, daily telecon)
- ◆ Six Safety Evaluations Issued (11/99 - 10/2000)
 - ✦ PASS
 - ✦ Ctmt Spray AOT
 - ✦ RTT Elimination
 - ✦ Common-Q/2
 - ✦ Ctmt Isol Valve AOT
 - ✦ EOC MTC Limits
- ◆ Four CEOG Topicals Currently (11/00) under Review
 - ✦ PTLR
 - ✦ Tech Spec End States
 - ✦ RCP Seals
 - ✦ DC (Battery) Power
- ◆ Nine CEOG Topicals under Development
 - ✦ Common-Q/3
 - ✦ Alloy 600/690 Nozzles
 - ✦ SU Time Reduction
 - ✦ RI 3.0.3 Action
 - ✦ Permanent MNSA
 - ✦ HPSI AOT
 - ✦ RI Vessel ISI
 - ✦ Alt Mode 6 Cooling
 - ✦ OPTIN to 62 BU

Topics

- ◆ Management Update
- ◆ Chairman's Priorities
- ◆ Strategic Technical Issues

Chairman's Priorities

- ◆ CEOG / WOG Collaboration
- ◆ Project Excellence
- ◆ Industry Relationship

Chairman's Priorities

- ◆ CEOG/WOG Collaboration
 - Joint work on new programs
 - ◆ Elimination of LB LOCA, RI Safety Analyses, Aux Feedwater Pump Testing in Mode 1
 - Joint future committee meetings
 - Joint leadership meetings
 - Consolidate JOG Programs (MOV, AOV, ITS)

Chairman's Priorities

- ◆ Project Excellence
 - Continue focus on OTD and project costs
 - Better definition of cost/benefit of CEOG projects with emphasis on 'total cost' and 'total benefit'
 - Consistent product quality
 - Resource issues (skills retention, maintenance of CE NSSS design knowledge)

Chairman's Priorities

- ◆ Industry Relationship
 - NRC - Proactive communication
 - EPRI - Meeting suggested for 1Q01
 - NEI - Support NEI/OG coordination meetings (3 per year)

Topics

- ◆ Management Update
- ◆ Chairman's Priorities
- ◆ Strategic Technical Issues

2001 CEOG Strategic Issues

- ◆ Steam Generator Integrity
- ◆ Design/Licensing Basis
- ◆ Reactor Plant Materials Issues
- ◆ Plant Performance Improvements
- ◆ Shorter Refueling Outages
- ◆ O&M and Capital Cost Reduction
- ◆ Equipment Obsolescence

2001 CEOG Strategic Issues

- ◆ **Steam Generator Integrity**
 - Tools for Operational Assessments and Condition Monitoring
 - Improvements in NDE and Basis for Tube-sheet Region Inspections
 - Thermally Induced SGTR Analyses
 - IP2 Steam Generator Tube Rupture Event
 - Coordination with EPRI SGMP

2001 CEOG Strategic Issues

◆ Design/Licensing Basis

- Joint Engineering Inspections (self-assessments)
- License Renewal/Generic Aging Management Reports
- Risk-informed Regulation/Technical Specifications
- Risk-informed Safety Analysis
- Maintenance Rule Implementation
- RCP Seal Integrity
- ECCS Sump Strainer Performance
- Elimination of MNSA Replacement Requirements
- Extend LBB to Redefine LB LOCA

2001 CEOG Strategic Issues

◆ Reactor Plant Materials Issues

- RCS Weld Data (emerging issue)
- Alloy 600 Issue Management (re-emerging issue)
- Coordination with EPRI MRP

◆ Plant Performance Improvements

- Analysis of UCLF Contributors

◆ Shorter Refueling Outages

- Peer Review Program
- Alternate Decay Heat Removal in Mode 6
- Startup Test Elimination, STAR
- Aux Feedwater Pump Test in Mode 1
- Staggered ESF Testing

2001 CEOG Strategic Issues

- ◆ **O&M and Capital Cost Reduction**
 - Extend RV ISI Interval
 - RI ISI for Class 1 Piping
- ◆ **Equipment Obsolescence**
 - License Common Q Technology
 - Strategic I&C Modernization

Licensing Subcommittee Report

Ed Weinkam, FPL Chairman

November 16, 2000

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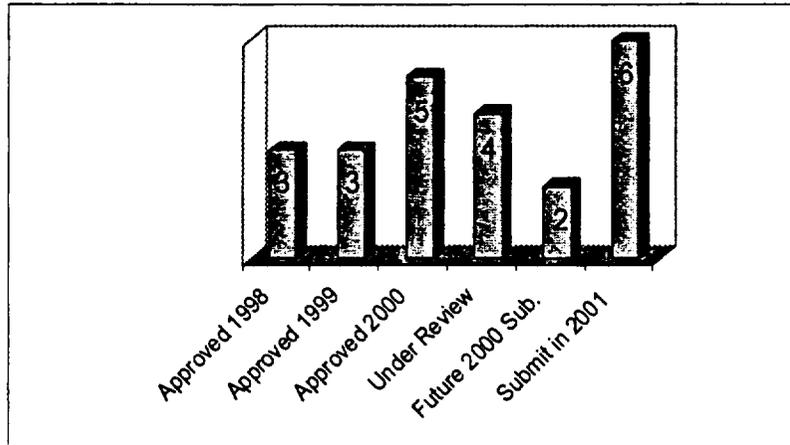
CEOG Licensing Update

- **Topical Report Issues**
 - » Overview
 - » Topicals Under Review
 - » Submittal & Approval Process
 - Topicals Involving Changes to Technical Specifications
 - » Review Fees

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Topical Report Issues - Overview



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Topical Reports Under Review

- CE NPSD-1184, Risk-Informed DC Power AOT Extension
 - » Submitted March 2000
 - » Extends 2 Hour AOTs for Battery / DC Bus to 8 or 24 Hours
 - Amount of AOT Extension Depends on Plant Design
- Benefits
 - » Provides Opportunity to Make On-Line Repairs for Battery or Charger Problems
- SONGS Is Lead Plant
 - » SE Expected by 12/00

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Topical Reports Under Review

- **CE NPSD-1186, Risk-Informed Changing Safe Mode End States from Mode 5 to Mode 4**
 - » Submitted end of April 2000
 - » Changes to 29 Tech Specs
- **Benefits**
 - » Maintain Plant in Lower Risk Steaming Mode
 - » Timely Return to Mode 1
 - » Eliminate Need to Perform Mode 5 to Mode 4 Surveillances
 - » Minimize Thermal Transients
- **SONGS is lead plant**
 - » SE Expected by end of December 2000

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Topical Reports Under Review

- **CE NPSD-1199-P RCP Seal Failure Model**
 - » Submitted July 2000 to address RCP Seal Integrity closure for CEOG plants
- **Benefits**
 - » Provides technically robust basis for this PSA issue that impacts Maintenance Rule and Reactor Oversight
- **Model will be incorporated into plant specific PRAs**
 - » SE Expected June 2001

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Topical Reports Under Review

- CE NPSD-683 RCS PT Limits Report
 - » Revision 6 Submitted September 2000
- Benefits
 - » Supports removal of RCS Pressure/Temperature Limits and LTOP Requirements from Tech Specs
- SONGS and Palo Verde plan near term use
 - » SE Expected January 2001

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Topical Submittal & Approval Process

- Topical Report Submittal, Review and Approval Process when Tech Spec changes are involved
 - » Prior to 2000, the review and approval process for Topical Reports leading to TS changes was well understood
 - One CEOG submittal
 - One generic SE
 - Plant specific license amendment
 - Changes to NUREG 1432 (ITS) were processed after-the-fact

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Topical Submittal & Approval Process

● Current Status

- » Topical reports continue to be submitted to NRC via Owners Group for technical review
- » Changes to NUREG 1432 are submitted via NEI Tech Spec Task Force (TSTF), even when justified by CEOG Topical
- » NEI/Industry process encourages plants to wait until the NUREG TSTF change is approved prior to submitting license amendment request

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Topical Submittal & Approval Process

- Going forward, CEOG plans to submit Topical Reports in parallel with NEI submittal of proposed NUREG 1432 changes (TSTFs)
 - » Submittals will reference each other
 - » NRC Staff will be asked to coordinate reviews
- Goal is to shorten time between topical submittal and plant implementation of revised TS

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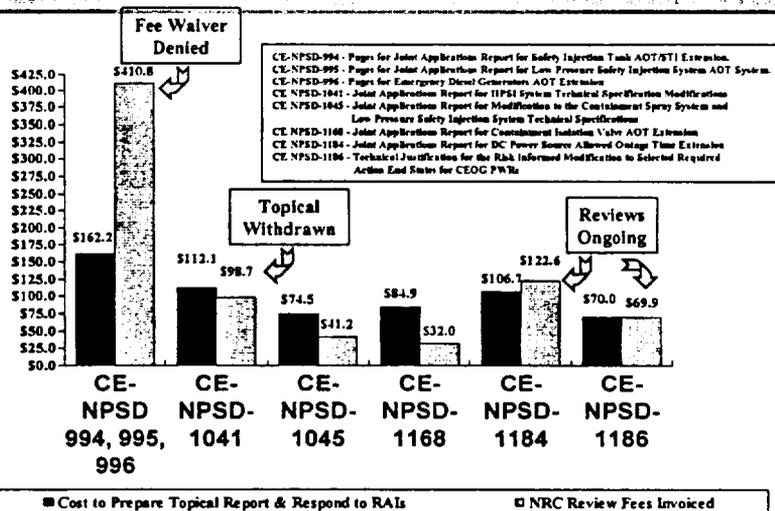
NRC Reviews

- CEOG is pleased with attention and responsiveness of NRC staff in reviewing topical reports
- CEOG and NRC have established a very good working relationship on Risk Informed applications and processes
- NRC review costs represent a significant fraction of the topical report process costs

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NRC Review Fees for CEOG Topical Reports



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Observations

- **CEOG RI (Risk Informed) topical reports**
 - » \$775K review fees for 8 topical reports that cost \$611K to produce
 - » NRC fees are 126% of production cost
- **Treatment of fees for Risk Informed ISI, IST and Technical Specifications does not appear to be consistent**
 - » Topical Reports on RI ISI received fee waivers
 - » CEOG fee waiver denied on RI Technical Specification topical report

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Observations

- **CEOG has led the industry in RI Technical Specification philosophy and applications**
 - » CEOG work supported development of Risk Informed Reg Guide and Standard Review Plan

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Fee Waivers

- **NRC review of fees for CEOG Topical Reports**
 - » Reconsider waiver request for CE-NPSD-994, 995 & 996 (\$410.8K)
 - Consider adjustments to fees used to
 - Develop Regulatory Guides/Standard Review Plans for RI Technical Specifications and RI Application Guidance
 - » Grant waiver for Safe Mode End States Topical Report (CE-NPSD-1186)
 - Used by Industry/NRC as the template to update the Improved Technical Specifications
- **CEOG believes that the purposes for submitting these topical reports fall within the fee waiver criteria of 10CFR170.21**

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Actions

- **CEOG Actions**
 - » Perform self-assessment of Topical quality and adequacy of technical communications with Staff prior to submittal and during review
 - » Increase management awareness of NRC Fees
 - » Submit/resubmit fee waiver requests
- **Request for NRC Action**
 - » Provide up-front fee estimates
 - » Favorably consider fee waiver requests

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Summary

- CEOG and NRC have worked well to establish priority and schedules for review of topical reports
- Need to resolve submittal / review process for TS related Topical Reports
- CEOG and NRC have established good working level relationships on RI initiatives
- Improved understanding and control of review fees is important to maintain use of CEOG topical report process

ZIRLO™ in CE Plants

November 16, 2000



Westinghouse Proprietary Class 2



Background

- ZIRLO™ is in widespread use
 - Licensed by NRC
 - Used in 38 Westinghouse plants
 - Used in Fort Calhoun Station (OPPD)
- ZIRLO cladding is more corrosion resistant than OPTIN™
 - Oxidation significantly reduced
 - No spallation has been observed
- Maximum Fuel Duty for CENP plants within ZIRLO database



Westinghouse Proprietary Class 2



Licensing Approach

- Prepare Topical report to NRC documenting process for implementing ZIRLO™ in CENP design methods
- Submit Topical report to NRC by January 2000
- Apply modified methods to support use of ZIRLO in CE plants in 2002



Westinghouse Proprietary Class 2



Proposed Schedule

- | | |
|---------------------------------|------------|
| • NRC Meeting | 10/17/2000 |
| • Submit Topical Report | 1/15/2001 |
| • NRC Complete Readiness Review | 2/15/2001 |
| • NRC Complete Review | 7/15/2001 |
| • First Plant Implementation | 2002 |



Westinghouse Proprietary Class 2



Interested Utilities

- **Arizona Public Service - Palo Verde Nuclear Generating Station Units 1, 2 and 3**
- **Baltimore Gas & Electric - Calvert Cliffs Nuclear Power Units 1 and 2**
- **Potential for additional applications in other CENP plants**



Westinghouse Proprietary Class 2



Slide 1

Managing the RCS Pressure Boundary in CEOG Plants

Dave Pilmer, SCE

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Agenda

Slide 2

- Current RCS Weld Issues
 - » Discussion and current activities
 - » Planned activities

- Current Alloy 600 Issues
 - » Recent findings
 - » Planned activities

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Current RCS Weld Issues

Slide 3

- Discovery of through-wall crack in V.C. Summer RCS hot leg weld
 - NRC Information Notice 2000-17

- Discovery of non-conformance in ANO-2 RCS piping field welds
 - Westinghouse CENP Tech Note 2000-02

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V. C. Summer Weld Crack Issue

Slide 4

- IN 2000-17 identified that the crack in the V.C. Summer RCS was in a hot leg-to-RV weld
 - » bimetallic weld joining stainless steel RCS pipe to low alloy steel RV nozzle with Inconel weld and butter
 - » weld was fabricated in the field
- CEOG is assembling information on features and locations of all RCS bimetallic welds
 - » RCS piping and large branch line nozzles
 - » pressurizer surge line nozzles
- Information will assist CEOG plants with near term outages to manage activities to address IN 2000-17

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V. C. Summer Weld Crack Issue

Slide 5

- Bimetallic RCS piping joints in CEOG plants are all made in the shop
 - » Field weld joints are P8 to P8 (SS) or P1 to P1 (CS)

- Features of CEOG plant stainless steel safe end welds to carbon steel or low alloy steel components in the shop:
 - » Nickel base weld buttering on CS/LAS
 - » Post weld heat treatment
 - » Full penetration weld to SS safe end

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V. C. Summer Weld Crack Issue

Slide 6

- Similarity among CEOG plant bimetallic weld locations, except:
 - » Additional bimetallic weld locations in Ft. Calhoun
 - RCS piping is SS
 - » Palo Verde RCS pump casings are not SS
 - No bimetallic welds on RCS HL or CL pipe ends

- CEOG plans to evaluate V.C. Summer weld crack root cause and will consider appropriate follow-up action

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ANO-2 Field Weld Issue

Slide 7

- ANO-2 is evaluating non-conformance in RCS field welds
 - » RCS pipe to SG welds at ANO-2 found to have less carbon steel material than design
 - backfill side (pipe ID) of hot and cold leg field welds found to contain SS material instead of CS
 - design analysis assumed CS material
- Westinghouse CENP issued TechNote 2000-02 on 11/9/00
 - » Determined that all shop welds conform to specification
 - » CS-to-CS field welds requiring CS backfill before SS clad overlay are potentially affected
 - » Bimetallic and stainless steel weld joints are not affected

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ANO-2 Field Weld Issue

Slide 8

- New RCS-to-SG welds were prepared by removing the stainless steel backfill from the old welds, then rebuilding with carbon steel backfill
- ANO-2 is evaluating the as-built configuration of the RCS-to-RV nozzle welds
 - » Stress analyses of RCS piping-to-RV nozzle welds assuming minimum CS material (no backfill)
 - » includes original seismic, LOCA and LBB analyses
- CEOG plans to evaluate applicability to other plants

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Planned CEOG Activities

Slide 9

- CEOG plants complete data collection of bimetallic welds
 - » Review outcome of V.C. Summer RCA
 - » Other reviews may include field weld repair locations, repair methods and NDE/UT issues

- CEOG may need to determine applicability of ANO-2 non-conformance RCS field welds to other plants
 - » Expect further actions to be based on weld analysis and ANO-2 non-conformance root cause analysis results

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Current Alloy 600 Issues

Slide 10

- Recent evidence of leakage found in pressurizer heater sleeves and instrument nozzles
 - » heater sleeve leaks at ANO-2, Palo Verde-2 and Waterford-3
 - new issue of leaks in large diameter heater sleeves
 - can repair using same approaches as with instrumentation nozzles
 - » Instrument nozzle leaks at ANO-2 and Ft. Calhoun
 - » MNSA leaks at Waterford-3

- Recent leakage in small bore Alloy 600 penetrations does not suggest any new safety issues

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Small Diameter Alloy 600 Penetration Current Repair Options

Slide 11

- **Full Weld Repair**
 - requires system drained, complete replacement of original nozzle
 - repair meets ASME Code and no further evaluation needed
- **Half Nozzle Weld Repair**
 - requires system drained, replaces outer half of nozzle, inner half with defect remains
 - relocates pressure boundary to OD of nozzle
 - repair meets ASME Code, but 50.59 evaluation required
- **MNSA**
 - can be installed with system flooded
 - periodic inspections and NRC approval for continued use is required

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Current Alloy 600 Issues Repair and Mitigation Activities

Slide 12

- Some CEOG plants are planning weld repairs of instrument nozzles over next several outages
 - Interim repairs are available using MNSA
 - CEOG plant pro-action includes installation of MNSAs on non-leaking nozzles
- CEOG is participating in on-going work to test/rank PWSCC mitigation techniques
- Over 1000 Small Diameter Alloy 600 Nozzles Remain In Service, not including RVH CEDM / ICI Nozzles

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Planned CEOG Activities

Slide 13

- Improve current repair options for Alloy 600 RCS instrument nozzles and pressurizer heater sleeves
 - » NRC approval of bounding analyses to support current repair options
 - » NRC approval for MNSA
 - Uniform relief request for MNSA contingency when nozzle leakage is discovered during an outage
 - Long term usage of MNSA when an augmented VT-2 inspection program is implemented



NRR Work Planning Center Development

Jacqueline E. Silber, Director
PMAS/NRR

November 16, 2000

Introduction

Why Centralized Work Planning ?

Objectives of the NRR Work Planning Center

Overall Implementation of Work Planning Concept

Overview of Work Planning Development Activities

Current and Future Activities

Why Centralized Work Planning ?

Need to Better Predict Workload

Need for Better Prediction of Resources
Required

Need for Better Response to Emergent
Work

Need for Better Identification of Impacts
from Emergent Work

Objectives of the NRR Work Planning Center

Maintain Appropriate Quality of Products

Provide Clear Expectations and Accountability

Provide Up-to-date, Accessible Workload Information for Planning, Budgeting, and Measuring Products

Optimize the Efficiency of NRR Work Processes

Establish Objective Means of Allocating and Tracking Workload

Overall Implementation of Work Planning Concept

Benchmarking Visits and Report

Incremental Approach

More Forecasting/Initial Planning

New Workload Management Software

Paradigm Shifts

Overview of Work Planning Development Activities

Development of Process Standards for All Major NRR Work Activities

Centralized Issuance of Technical Assignment Control (TAC) Numbers

WISP to be Replaced with RPS/LOP

Integration of Work Planning Activities with Budget and Performance Metrics

Planning Window

Programmatic Plan/Budget Level (Phase Planning)

Work Planning Center Planning Level (Activity Planning)

Scheduling/Loading Level (Task Planning)

Emergent Work will be Categorized and Tracked

- ◆ Determine Historical and Cyclical Trends
- ◆ Nature and Source

Organizational Availability

Individual Availability

Current Activities

Transition Team for WPC in Place

Process Standards Under Development

Pilot In Progress on Selected Process Standards

Infrastructure Activities In Progress

Outreach Activities In Progress

Next Steps

Continue Development of Workload Management Software

- ◆ Skill Pools/Priority of Work Activities
- ◆ Optimization Models

Establish Internal WPC Procedures (Working Relationships, Meetings, Reports) Based on Pilots and Other Activities

Permanent Space and Personnel