# CURRENT HYDROPOWER ISSUES FOR OPMs

Operations Manager PROSPECT Course
9-13 August 2004

## OBJECTIVES

- Students will have general knowledge of:
  - Program overview
  - What do I need to know about Power Marketing Agency (PMA) funding?
  - What is Customer funding, and how do I get some?
  - Why do I need to build relationships with PMA and Customers?
  - What are some of the things that can bite me?

# Hydropower Program

- National Business Line Manager - Brent Mahan (acting)
- Regional Business Center Business Line Managers:
  - SAD: Roy Harvison
  - SWD: Michael Jordan
  - NWD: Hiroshi Eto
  - POD: None
  - NAD: None
  - SPD: None
  - LRD: David Mistakovich
  - MVD: Larry Holman
- You need to know who your District BLM is
- These folks, working with the OPM's, will be instrumental if we get PMA and customer funding for all Hydropower activities!!

# Reliable and Efficient Power

- Performance measures in O&M are currently around availability
  - Peak period and overall
  - Need to clearly understand how this could affect your budget
- PMA's and Customers will want to fund reliability issues first then Efficiency

# Performance Measures

- Annex IV in Budget EC 11-2-187
- 10 used in O&M program
  - Requirement to avoid legal, treaty or ESA violation in BY
  - Requirement to avoid public safety item at project
  - Requirement to avoid forced facility closure
  - Return for unit life extension or de-rated unit capacity restored (MW-years)
  - Forced outage rate
  - Peak Season availability
  - Ave. unit age
  - Total number of generating units
  - Number of De-rated units
  - Justification / funding argument

5/31/2004

TABLE IV-3 - HYDROPOWER BUSINESS LINE BUDGET RANKING CRITERIA

| | | Work Package Data | | | | | | Project Level Data | | | | | PRISM DATA | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
| | *(Provide separate entry for each budget request and for each increment )* | MSC Rank | Funding Increment | Requirement to Avoid Legal, Treaty or ESA Violation in Budget Year | Requirement to Avoid Public Safety Item at Project | Requirement to Avoid Forced Facility Closure | Return for Unit Life Extension or De-Rated Unit Capacity Restored (MW-Years) | FY03 Forced Outage Rate | FY03 Peak Season Availability | Average Unit Age | Total Number of Generating Units | Number of De-Rated Units | Expected $ Benefit (R&D Project) | Years to Fielding Product (R&D Project) | Years to Expected Benefits (R&D Project) | Total BCR | RB/RC | Annual Net Benefits |
| | GI | | | | | | | | | | | | | | | | | |
| Cat/ class | R&D | R | R | n/r | n/r | n/r | n/r | n/r | n/r | n/r | n/r | n/r | R | R | R | n/r | n/r | n/r |
| codes for | Special Invest | R | R | n/r | n/r | n/r | n/r | n/r | n/r | n/r | n/r | n/r | n/r | n/r | n/r | n/r | n/r | n/r |
| these | PED | R | R | n/r | n/r | n/r | n/r | n/r | n/r | n/r | n/r | n/r | n/r | n/r | n/r | n/r | n/r | n/r |
| ---> | etc | | | | | | | | | | | | | | | | | |
| | CG | | | | | | | | | | | | | | | | | |
| Cat/ class | PED | R | n/r | n/r | n/r | n/r | n/r | n/r | n/r | n/r | n/r | n/r | n/r | n/r | n/r | R | R | R |
| codes for | Multi-purpose | R | n/r | n/r | n/r | n/r | n/r | n/r | n/r | n/r | n/r | n/r | n/r | n/r | n/r | R | R | R |
| these | Dam Safety | R | n/r | n/r | n/r | n/r | n/r | n/r | n/r | n/r | n/r | n/r | n/r | n/r | n/r | R | R | R |
| ---> | etc | | | | | | | | | | | | | | | | | |
| | O&M | | | | | | | | | | | | | | | | | |
| Cat/ class | O&M and Joint | R | R | R | R | R | n/r | n/r | R | R | R | R | n/r | n/r | n/r | n/r | n/r | n/r |
| codes for | Anti-Terrorist | R | R | R | R | R | n/r | n/r | n/r | n/r | n/r | n/r | n/r | n/r | n/r | n/r | n/r | n/r |
| these | Specific Maint | R | R | R | R | R | R | R | R | R | R | R | n/r | n/r | n/r | n/r | n/r | n/r |
| ---> | etc | | | | | | | | | | | | | | | | | |

R = required data element  I = data required if available  n/r = not required

**Notes**

1 **MSC rank** - as in FY 05 this budget item's rank in the MSC's request
2 **Funding Increment** - I = Intial Program Increment, 2 = Critical Operations Requirement, 3 = Additional Operation & Maintenance Requirement; 4 = Capability
3 **Requirement to Avoid Legal, Treaty or ESA Violation in Budget Year -** (Yes or No)
4 **Requirement to Avoid Public Safety Item at Project** - (Yes/No)
5 **Requirement to Avoid Forced Facility Closure** - (Yes/No)
6 **Return for Unit Life Extension or De-Rated Unit Capacity** - MW-Yrs of generation benefit achieved by life extension or restoration of unit capacity.
7 **FY03 Forced Outage Rate** - FOR from OMBIL.
8 **FY03 Peak Season Availability** - From OMBIL.
9 **Average Unit Age** - From OMBIL.
10 **Total Number of Generating Units** - New data field will require field input.
11 **Number of De-Rated Units** - New data field will require field input or quality check on OMBIL data.
12 **Expected $ Benefit (R&D Project)** - Estimation.
13 **Years to Fielding Product (R&D Project)** - Estimation of years to complete research and development effort.
14 **Yrs to Expected Benefits (R&D Project)** - years required to begin capturing benefits of an R&D effort.
15 **Total BCR** - the benefit cost ratio for project as defined in EC.
16 **RB/RC** - the remaining benefit / remaining cost ratio as defined in the EC
17 **Annual Net benefits -** estimated benefits of this individual budget request item
18 **Justification/Funding Argument** - additional information to support budget request.

# FY 06 Funding Level 3

- HQ prioritization
  - prioritize our "Critical Maintenance" and "O&M Investment" items in Increment 3 by using Number of De-Rated Units and Average Unit Age as the sort prioritization criteria
- Makes sense to fix broken units first
- Not sure if age means much if units have been rewound
- Performance based budgeting

# OMBIL and Hydropower

- Data for entry into ranking system directly out of OMBIL
- Entering data into OMBIL accurately becoming very important

# PMA Funding

- Seattle, Portland and Walla Walla already have an agreement in place
- Bonneville Power administration
  - Have different authorities than other PMA's
- Fund routine hydropower specific and hydropower portion of joint
  - Approximately $137M for FY
- Fund small capital items up to funding threshold
  - 9.5M per year
- Fund large capital program to funding threshold
  - Fund each effort separately per agreement

# PMA Funding

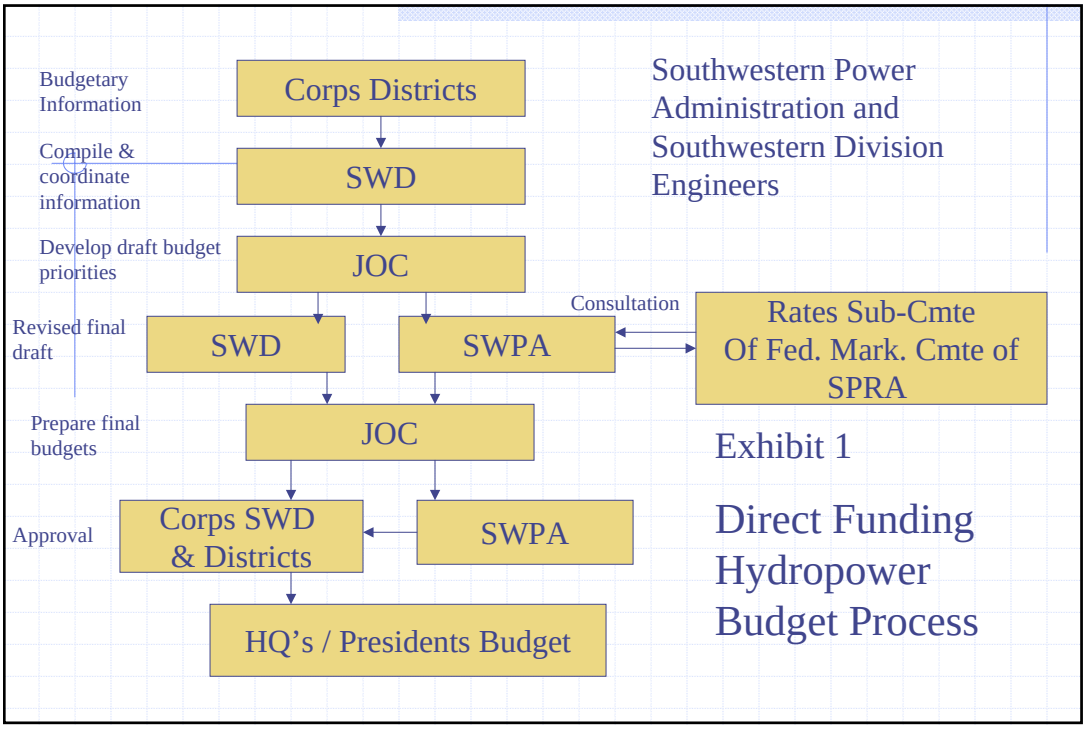
- Memorandum of Agreements have been developed
- Need to be approved within CoE
- Funding plans will be developed with PMA and customer input
- Budget meetings in the May/June timeframe
- Will have significant impacts on all your funding
- Hydropower funds will NOT be able to be moved to other business lines such as recreation, etc
  - Can only be used for hydropower
- Will need 5 year work plans
- Funds will probably not have the high expenditure goals
  - In fact, could get rewarded for saving money
- Funding will probably not come all at once
- Joint funding – in or out?
  - Where will the non-hydropower portion of joint come from?

# When will PMA funding happen?

- Currently efforts on-going for FY 05
- WRDA has/had language
- Working language in Energy Bill
  - Customers prefer this route
- Will it happen FY 05????
- 50/50 or less?
- Not sure

# Customer Funding

- Each Power Marketing agency(other than BPA) has been working on a separate Customer funding agreement or MOA
  - SWAPA – Jonesboro
  - WAPA – Western States Power Corporation
  - SEPA -
- Customer provide funds directly to Corps for agreed upon hydropower activities
  - Each item has its own sub-agreement in most cases
- Customer are reimbursed through net billing and bill crediting with their PMA
  - Usually repaid within a few days
- Will be the way we fund capital improvement activities in the future
- Get to know your customer group
- Participate in budget strategy meetings




Southwestern Power Administration and Southwestern Division Engineers

Exhibit 1

Direct Funding Hydropower Budget Process

# Relationships

- Relationships with PMA's and Customer groups will be key to your success in this business line
- Being on the same page with them will be essential
- Working together we can make this hydropower "team" a model for the future
- Efficiencies in our program will ensure their trust
- Trust will ensure future support and funding

# Leadership

- Power plant manager is key member of project leadership team
- Need to promote quality leaders
- Budgets, schedules and people
- Need strong communication skills
- Can't continue to promote for technical reasons only

# Major Rehab Program

- Study costs out of Civil O&M
  - Can cost $1.5M
- Construction General (CG) funding
  - Can be $100M-150M
- Complete rehab of power plants
- Switchyards included (if managed by CoE)
- Problem:
  - No new starts
  - Will all hydropower funding be removed from appropriations process?
- Some PMA's are willing to fund

# Planning for the Future

- Staffing to meet future needs
  - Hiring qualified employees
- Clearly communicate needs
  - Within CoE
  - PMA
  - Customers
- Equipment replacements
  - Can't wait for major rehabs
- Could/Should be very solid program in future

# FEMS

- We operate and **maintain** power facilities
- Preventative Maintenance (PM)
- Breakdown maintenance
- This is the tool (maximo) to track your efforts
- Done correctly, will be tool to use in any A-76 studies
- Can be sold as the tool to defend jobs

# Potential Problem Areas

## Safety

- Hazardous Energy Control program
  - Lock out/Tag-out
  - Safe clearance program
- Confined Space program
- Hearing Conservation
- Arc Flash Protection
  - Flash resistant clothing
- Crane Safety

# ERGO Program

- Having current spill prevention plans
  - The Dalles spills got ASA(CW) attention
    - 54 page comprehensive review report
      - Numerous recommendations
  - Strategic planning in this area is a necessity
- Important part of project Environmental Management System (EMS)
  - December 05 deadline for EMS implementation

# NERC – Compliance Enforcement Program

- Maintenance Issues
  - Relay test plans, Governor Droop, Voltage regulator protection, Power System Stabilizers, Synchronizer
- Verification of Unit Capability curves
- Facility Review
  - Requirement to verify ratings and coordination of all power train components every 5 years
- System Restoration
  - Black Start capability – every 3 years actual test
- Reporting Requirements
  - OMBIL
  - Unit interruption reports

# Equipment Failures

- Type “U” bushings on equipment
  - Prone to violent failures
  - Contain PCB’s
- Transformer failures
- The Dalles was significantly sited for not doing enough Preventative maintenance
- Lack of Non-deferrable funding has created a situation where the potential of failures has increased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# QUESTIONS????