

Meeting Notes
Hydropower Program Strategic Planning Workshop
20-22 July 2004
Denver Colorado

The purpose of the workshop was to develop a National Strategic Framework to shape the future of the Corps of Engineers Hydropower Program. This framework would include a guiding vision, key program objectives and performance metrics that transcend regional boundaries and allow each region to develop regional strategies, objectives, performance metrics and initiatives to achieve our vision for the Hydropower Program. Over 50 people attended, including representatives from all levels of the Corps, the Office of the Assistant Secretary of the Army for Civil Works, and representatives from power marketing administrations (PMAs) and their preference customers (see Enclosure 1). These notes document the discussions and agreements reached among the stakeholders who were in attendance. This workshop was the first in what is envisioned to be an on-going process of twice annual meetings for development, monitoring and adjustment of our strategic plan.

Day 1, Tuesday, July 20, 2004

I. The group received an overview of strategic planning and strategic needs by the following people:

- Mike White, Chief of Operations and the Operations Community of Practice (CoP), HQUSACE. – *“The glass is half full”*
 - The key to the Corps success in implementing our re-structuring effort “USACE 2012” while addressing uncertainty in the world is through effective teamwork, trust, and transparency. Uncertainty emanates from the risk of service outages due to our aging hydropower infrastructure, which is suffering from a lack of investment, tight budgets, a fragmented focus on infrastructure, and tension between current and future missions and projects. For the first time, we’re closing down the Ohio River because of infrastructure deficiencies at McAlpine.
 - Leadership has a sense of urgency to focus on infrastructure. They must be exposed to the views of our hydro partners. We need to find better ways to make hydropower issues visible to the leadership.
 - Vertical teaming and risk management are essential to moving forward. Technology affords virtual teamwork. The relationship between the Corps and BPA is strong with respect to direct funding and looks promising between SWD and SWPA and with SEPA. Although Congress does not seem to favor direct funding, I’m committed to it. Beyond direct funding, we must address our total level of funding and prioritize our needs.
 - Asset management must be applied to the hydropower function.
 - My expectations: develop a full charter and action plan for the Hydropower CoP, tie hydropower performance to the budget, be inclusive, and look at the big picture. Ensure good communications practices.

- Note that there is pressure for competitive sourcing of operations in the Corps.
- Mark Mugler, Office of the Assistant Secretary of the Army for Civil Works
 - One of the goals of the Assistant Secretary of the Army for Civil Works is to make budget decisions based on program performance. Therefore, strategic investment planning must be a core part of the Hydropower strategic plan. The challenge for the Hydropower program is to cope with systematic under-investment. This is where benefit/cost analysis can help.
 - There are 3 opportunities for strategic investment: direct funding (customer and/or PMA), new starts (major rehabilitations under Construction General appropriations), and improved linkage between the budget and performance results. OMB's Program Assessment Rating Tool (P.A.R.T.) is a tool for planning.
 - The House of Representatives directed the Corps to develop a 5-year budget plan. This plan should make the case for major rehabs and show the consequences and risks that under-investment has had over time.
- Hiroshi Eto, Interim HQUSACE Hydropower Program Manager – We are re-energizing past partnerships through the concept of Communities of Practice to assist in the development of a National Hydropower Strategic Plan to ensure we measure and achieve success from the shared perspectives of our regional and national stakeholders. We seek to leverage the strong regional partnerships that are in place to achieve success through a synergistic National partnership.
 - The primary missions of the Corps are Flood Damage Reduction, Navigation, and Environmental Restoration. Hydropower is mission executed in conjunction with these primary missions of the Civil Works program. Therefore, the recently released Civil Works Strategic Plan (March, 2004) does not specify too much with regard to Hydropower but rather lays out a broad framework emphasizing a watershed approach to water resources management.
 - The Hydropower strategic plan we develop will ultimately include a Hydropower Mission, adherence to Army Values, a Hydropower Vision, Strategies, Strategic Objectives, Performance Metrics, and Strategic Initiatives. These should align readily with the broader Civil Works Strategic Plan which includes:
 - Civil Works Mission: As developer, manager, and protector of water resources, **Contribute to the national welfare and serve the public by providing the Nation and the Army with quality and responsible development and management of the Nation's water resources; protection, restoration and management of the environment; disaster response and recovery; and engineering and technical services in an environmentally sustainable, economic, and technically sound manner through partnerships.**
 - CW Vision: **Be the premier public service provider of comprehensive, sustainable solutions to water resources challenges.**

- **CW Strategy: Holistic systems approach, leveraging partnerships, focused on watersheds.**

- Current strategic initiatives suggest the development of performance-based budgets, expanding customer funding, and seeking direct funding by the power marketing administrations (PMAs).
- This workshop is an opportunity to validate, change, add and flesh out the strategic planning work that has been on-going since last December within the Corps in preparation for this workshop.

II. Group Viewpoints on Opening Session Remarks

- Success requires understanding that the Corps, PMAs, and customers have different cultures; the Corps may look at things more broadly and certainly has a specific hierarchy that affects decision-making (perceived lack of good faith in negotiations).
- The PMAs worry about the customer while the Corps worries about the Federal Acquisition Regulations (FAR) and U.S. Code. There is no alternative for Corps hydropower without power purchasing so the Corps must appreciate the value producing power. We cannot afford to fail despite budget cuts.
- PMAs are not in favor of the Corps reprogramming direct funds to other areas that do not directly benefit power system maintenance. Direct funding should not go to “some big pot” or lead to reduced appropriations (offsets). It must go to funding hydropower. If PMA funds are diverted, there is no incentive to give direct funding.
- Western’s customers don’t want to include major capitalization in direct funding, so don’t make this a requirement but rather address it on a case-by-case basis.
- Southwestern’s customers want to fund rehabs through legislation/appropriations. Appropriations should come first to address critical needs, then add on direct funding for remaining unfunded requirements.
- Direct funding will come from PMA customers gaining support on the Hill from both sides of the aisle. Customers want direct funding for all federal agencies (PMA and Corps both, plus Reclamation).
- The PMAs have more flexibility to look at alternative power generation means than does the Corps.
- We need a more collaborative process, not just to depend on the Bonneville Power Administration model; look at the customer model that the Southwestern Power Administration offers.
- The interaction between DOE and COE has increased over the past couple of years, but DOE does not actively lobby for direct funding.
- PMAs want to have input in decision making.
- Customers have valuable knowledge so solicit their input. The BPA model cannot be supported in other regions because it can’t be assumed that BPA as the PMA speaks for the customers.
- Seek regional solutions because regional needs differ.

- The attendance by customers at this meeting signifies communications improvements.
- We need to share our expertise; we have good examples where we have done so (e.g., Switchyards, breaker replacement in Ft. Worth), also where we have worked across PMA lines.
- Perhaps we should improve how we make known the good things we do, such as through press releases.
- While rates and reliability are important concerns, we must appreciate that the value of the resource is changing. Environmental constraints detract from the value of the resource to utilities. PMAs and customers don't mind paying for power features but are sensitive about paying for added features such as irrigation. Also, realize that the federal government is not the only ones building facilities.
- Promote hydropower as a renewable resource in the context of competing uses.
- We should all be proud of gains in reliability.
- Risk management is increasingly a concern; Western Area Power Administration has been focusing on this, especially with respect to drought impacts.
- Avoid multiple modifications; customers won't stand for this. The Corps must improve in cost estimating and ensure effective project management.
- Corps Regional Perspectives:
 - There is \$30 million in additional work required outside the appropriations process. Pressure on water reallocation puts pressure on hydropower, yet the use of water is often a political decision. Direct funding is the future – it will bring accountability and efficiencies -- but so too is continuing good communication across the Corps, preference customers, and PMAs.
 - We need to develop a direct relationship with the power customers and cultivate a climate of trust and confidence.
 - We are pro-direct funding. Our connections to changing electrical systems must be worked through good customer relations. We still have infrastructure needs that O&M appropriations cannot handle. We are encouraged by our discussions with SEPA and our customers.
 - We endorse direct funding, although we anticipate some implementation struggles. We must continue to ensure O&M appropriations are provided for the non-power share of Joint Activities. Keys to success are trust, good relationships (including the Native Americans on Cultural Resource Program needs), and capturing lessons learned. We need to keep rehabs comprehensive; states are moving toward comprehensive modernization vs. dealing with “eaches.” Good performance measures are critical. We support the Hydroelectric Design Center. Efficiencies may be gained by sharing contracting resources with the PMAs and

standardizing federal O&M practices. We are not concentrating enough on routine maintenance and need to implement asset management through deployment of the Facility and Equipment Maintenance (FEM)-MAXIMO work management system, build on the good work initiated by the Bureau of Reclamation.

- We need to look at major rehabs. We echo the concerns expressed.
- In general, all voiced support for continuing collaboration, valuing the inclusion of stakeholders, the benefits of direct funding, and the value of better understanding each other to achieve improvements through a synergistic partnership.

III. The Plenary Panel reviewed the Mission and Vision statements proposed by the Corps. The key comments are captured below each statement.

- Mission Statement: **Provide reliable hydroelectric power services, including power system stabilization, to benefit the nation’s electrical power consumers in partnerships with federal power marketing agencies.**

Customers must clearly be stated in the mission. They are utility operators who know what is going on, will be supporters who provide funds and work with the Corps toward greater efficiencies. The statement does not emphasize sensitivity to “cost-effectiveness”. Need to emphasize pursuit of low cost, but not lowest cost. Cost effectiveness should consider the impacts on rates. Change “power marketing agencies” to “power marketing administrations.” There was support for the inclusion of power system stabilization.

NOTE: The following revision was not discussed at the workshop and is only offered as a possible variation to address the comments:

Mission Statement: Provide reliable hydroelectric power services at the lowest sustainable cost, including power system stabilization, to benefit the nation’s power preference customers in partnership with federal power marketing administrations.

- Vision Statement: **Be the premier steward of entrusted hydropower resources.**

We should be premier stewards. It is more than stewardship, but also power generation. The vision should strive for more – to become the hydropower experts.

NOTE: The following revision was not discussed at the workshop and is only offered as a possible variation to address the comments:

Vision Statement: Be the premier steward of entrusted hydropower resources and the premier experts in hydroelectric power generation.

- The following insights were captured during the review of the Mission and Vision by the Plenary Panel:
 - Notifying the PMA does not equate to dialog with the preference customers.
 - There is not intent to micro-manage the Corps. Customers care about rates and reliability.
 - The Corps hydropower mission has national value, but economics must take into account regional customer impacts. The Corps must understand and value the regional impacts and benefits and not make determinations solely on the basis of National Economic Development (NED).
 - Preference customers can be more responsive in funding critical needs. They have an important role in the partnership.
 - Hydropower plants are ideal for blackstarting. The Corps must embrace this role to achieve status as premier stewards and experts.
 - To be considered as premier hydropower experts, the Corps must understand power-pricing variations between on-peak and off-peak periods. Making investments decisions solely based on the average cost of power conveys a lack of expertise and hurts the Corps standing as a credible business partner.
 - Seek sharing of resources with PMAs.
 - The Corps is not the lowest cost provider in some regions.
 - The Corps must employ effective project management to control costs and keep promises.
 - We also need to look at both revenues and benefits foregone and received.
 - Consider that different plants perform different purposes.
 - Performance measures should reflect regional differences. The challenge is to measure the national value of hydropower while appreciating the regional needs, risks, plant variability.

IV. The group engaged in open discussion on what the National Strategic Objectives should be for the Corps.

- Strategic Objectives:

- **Provide power services at the lowest sustainable cost.**

Reinforces the notion of cost-based power services, competitive market.

Supports Civil Works Strategic Goal 1: Provide sustainable development and integrated management of the Nation's water resources.

- **Optimize hydropower as a renewable resource that does not contribute to greenhouse gases.**

Invest in upgrades and efficiency improvements to installed infrastructure that are economically justified and conduct R&D. Integrate Environmental Operating Principles. Integrate environmental needs with hydropower operations and infrastructure improvements. This is more of a focus for the Corps than for hydropower stakeholders who see the primary objective as maximizing opportunities to increase power capacity and generation. This objective needs further work.

Supports Civil Works Strategic Goal 2: Repair past environmental degradation and prevent future environmental losses.

- **Meet or exceed industry standards for reliability and availability.**

Reliability refers to having generators able to run when called for, but also implies support of power system grid stability where appropriate to ensure power is deliverable.

Supports Civil Works Strategic Goal 3: Ensure that projects perform to meet authorized purposes and evolving conditions and Objective 3.1: Improve the efficiency and effectiveness of existing Corps water resources projects.

- **Develop and implement a hydropower asset management strategy.**

This covers maximizing asset life, stewardship and prudent life cycle management of Federal resources. Includes best practice and industry performance and cost benchmarking. Allow for regional flexibility.

Supports Civil Works Strategic Goal 3: Ensure that projects perform to meet authorized purposes and evolving conditions and Objective 3.1: Improve the efficiency and effectiveness of existing Corps water resources projects.

- **Identify and implement opportunities to standardize equipment, processes, and services in coordination with other related federal hydropower agencies.**

Maintain open and timely dialogue with PMAs, TVA, Reclamation and preference customers. May consider Standardization as a sub-set under the context of achieving lowest sustainable costs or optimizing resources.

Supports Civil Works Strategic Goal 5: Be a world-class public engineering organization and Objective 5.1: Be a world-class technical leader.

6. Sustain a skilled hydropower workforce.

Develop and implement a hydropower workforce capability strategy.

Supports Civil Works Strategic Goal 5: Be a world-class public engineering organization and Objective 5.1: Be a world-class technical leader.

7. Strengthen and sustain hydropower partnerships with power marketing administrations, preference customers, and federal power agencies.

In the context of Communities of Practice, hydropower partnerships could include coordination with Native American tribes, the International Joint Commission, U.S. Fish & Wildlife, etc.

Supports Civil Works Strategic Goal 1: Provide sustainable development and integrated management of the Nation's water resources and Objective 1.2: Support the formulation of regional and watershed solutions to water resources problems.

8. Manage the hydropower program through sound project management principles.

Support Civil Works Strategic Goal 3: Be a world-class public engineering organization.

9. Optimize hydropower resources within the authorized project purposes and environmental laws.

Supports Civil Works Strategic Goal 1: Provide sustainable development and integrated management of the Nation's water resources and Objective 1.3: Seek water resources solutions that better balance economic, environmental, and quality of life objectives.

Days 1 and 2, Tuesday and Wednesday, July 20 and 21, 2004

V. Work groups worked through 2 rounds comprised of different team members on the following topics to discuss strategic initiatives related to the objectives:

- **Performance, Measuring Performance, Setting Goals** – Team Leaders = Mike Jordan, Dave Lichy, and Kimberley Oldham. Addresses Objectives 2, 9.

Recommendations:

1. Form a sub-team to continue this team's work. Start with those who participated in Rounds I and II at this meeting. Review and refine performance measures. Propose performance targets.
2. Categorize objectives and measures with regard to applicability to funding source, i.e., appropriation and/or direct funding.
3. Cross-check measures to Budget EC, OMBIL, P.A.R.T., Hydropower strategic objectives.
4. Performance measures should be quantifiable (measurable), simple (doesn't require extensive calculations), understandable (well-defined), objective (can't "cook the books"), aligned with customer objectives, and useful to customers and the Corps.
5. Need measures for the national (S - strategic) level to support budget links), regional (T - tactical) level (to support customer communications and relationships and priority setting), and for the plant level (O - operational) to support operational and management decisions and staffing.
6. Sample performance measures:
 - a. Provide power services at lowest sustainable cost. (S, T, O)
 - Stable rates (within inflation rate)
 - O&M \$/MW cost of generation
 - Capital replacement costs per MW
 - Plant contribution to total rate structure
 - \$ per capacity and other factors that affect rates
 - Large maintenance
 - Joint costs (non-generation costs)
 - Staffing per unit (directly correlated to cost)
 - Project – need capability to provide data to justify benefits for budget defense)
 - Number of de-rated units
 - Risk and condition index
 - Life cycle costs
 - Moving average trend
 - Economic analysis (regional, national)

- b. Optimize hydropower as a renewable resource that does not contribute to greenhouse gases. (S)
 - Tons of greenhouse gases prevented
 - Percent of available water used for power generations (missed opportunity to have prevented more)
 - New capacity (uprating)
 - Fossil fuels saved
- c. Meet or exceed industry standards for reliability and availability. (S, T, O)
 - NERC compliance
 - Forced outage rate – reliability
 - Peak season availability (applied only to peaking plants)
 - Total operating hours vs. outage hours

Still needs to be developed (not evaluated during Round II)

- d. Develop and implement a hydropower asset management strategy. (S)
 - Define what asset management means to each stakeholder group
 - Use Corps Engineering Regulation to develop asset planning structure (do you have a plan?)
 - Measure what gets done
- e. Identify and implement opportunities to standardize equipment, processes, and services in coordination with other related federal hydropower agencies. (S)
 - Facility Instructions Standards and Techniques (FIST) manuals of US Bureau of Reclamation.
 - FEM (MAXIMO) – make comparisons with other plants
 - No consistency of definitions within and outside agencies
 - Shared resources
 - Results will be reflected in other measures, e.g., cost
- f. Sustain a skilled hydropower workforce (S, T, O)
 - Number of new hires vs. retirements
 - Number of new hires that completed training vs. number of new hires
 - Hours of continuing education for plant employees
 - Indicator of how well we are replacing and keeping what we got
 - Consider targets (5-7% trainees to total workforce)

- g. Strengthen and sustain hydropower partnerships with the power marketing administrations, preference customers, and federal power agencies. (S)
 - Number of regular sustained meetings with customers
 - Number of contacts with others outside your agencies, e.g., with States, local, other federal, tribal
- h. Manage the hydropower program through sound project management principles. (S)
 - Percent of projects (work packages) that met original budget and schedule commitments
 - Overall percent cost growth of all work packages
 - Percent of projects that exceed original commitments
 - Obligations and expenditures are less than 100% (don't spend for sake of spending)
- i. Optimize the hydropower resources within authorized project purposes and environmental laws. (S, T, O)
 - Goal – no net losses in generation capacity
 - Percent of operating hours that are being restricted due to environmental considerations
 - Operating principles
 - Existing Corps Environmental Review Guide for Operations (ERGO) compliance – internal reviews

Discussion: Performance measures will be used for decision making at the national level. We need shared communication and definitions across agencies to assess performance of the hydropower program. The Bureau of Reclamation's FIST manuals will help compare operational activities across plants. Like the Bureau, we should develop performance measures based on classes or capacity of plants, e.g., small, medium, large. Consider that there may be factors outside Hydropower's control at some plants, i.e., non-generation constraints. House is pushing for a six-year budget plan, but it inadvertently may reward poor performers.

- **Improving Water Management** – Team Leaders = Jody Farhat and Bolyvang Tanavan (Round I), Bolyvang Tanavan and Jim Mahar (Round II). Addresses Objectives 1, 7, 9.

Recommendations:

- Create a “Hydropower Water Management” sub-CoP with representatives from the Corps and the PMAs.
- Review operating procedures, identify areas needing changes, and compile lessons learned.

- Schedule Corps-PMA joint operational planning meetings within each Division to share information, strengthen working relations, and forge a new culture.

Discussion: Water management affects all of our objectives, as the loss of \$2 billion in hydropower generation from flow augmentation and spills attests. We must recognize that there are competing demands on water use on all hydropower projects, but this remains an issue. As purposes have been added on to projects, constituents expect a greater voice in decisions. Perhaps cost allocations should revert to the original project purpose(s) or else do reallocation studies and re-stack allocations for new project purposes vs. joint costs. Moreover, the Endangered Species and Clean Water Acts impose constraints or demands on projects. Further complicating things are different mission requirements between the Corps and the PMAs. Add regional differences to this and the issue of water management becomes quite complex. The key to effective water management is good communication and information sharing and a desire to balance multiple uses to benefit hydropower. Part of the solution is to tell the hydropower story better and to show the cost of doing business. Reward good examples. R&D can support balancing objectives, e.g., develop fish-friendly turbines. Regional meetings and joint operational planning may also help. Get back to basics (authorized purposes) or ensure allocations and funding for new authorized purposes. Maximize the value of power within the context of other constraints (uses). Ensure uniform and consistent policy across Corps projects. Evaluate the value of Hydropower through cost/benefit analyses. Use seasonal pools and operational flexibility. Adopt a forward-looking approach to R&D and new technologies development (at unit, plant, system levels), i.e., flow vs. efficiency.

- **Functioning as a Community of Practice (CoP).** Team Leader = Roy Harvison. Addresses Objective 7.

Recommendations:

- Rejuvenate and extend the Hydropower CoP beyond the Corps.
- Develop a charter.
- Key to success is the GM-15 business program manager position at HQUSACE; make it a non-competitive 14/15 job, perhaps with a 1-year rotation among Divisions.
- The CoP needs to meet often – twice a year regionally and national annually. Allow stakeholders input on agenda setting.
- Continue weekly phone calls (include PMAs) and follow-up e-mail.

- Conduct CoP-sponsored training, e.g., on reliability standards (NERC, FERC).
- Consider a newsletter.
- Set up a web-based chat room.
- Identify subject-matter experts for hydropower and utility operations, etc.
- Identify critical events.
- Develop a 101 orientation course for USACE, customers, PMAs.
- Improve collaboration and communications with stakeholders.
- Be prepared to review structure and process at next meeting.

Discussion: The Corps used to work like Communities of Practice are supposed to work. We provided context and contacts as resources, especially for new employees. We need to expand the CoP beyond the Corps to include utilities and vendors, e.g., the American Public Power Association, the National Rural Electric Cooperative, and the National Hydropower Association. It would help to have an orientation course; this would also help us show big picture hydropower issues. We need training on reliability standards. Publicize special events. Like the 101 course; allow open attendance. These courses provide an opportunity for the Corps and partners to learn about each other's objectives, culture, operational constraints. Look at Tulsa District's "A Kilowatt is Not a Kilowatt" course. Omaha has other examples. Look at the courses WAPA does with the Bureau of Reclamation. Identify Corps FERC coordinators and hold a listening session with FERC and its licensees to promote understanding. Improve understanding of NERC planning standards for equipment replacements.

- **Sustaining a Hydropower Workforce/Managing Workforce Assets.**
Team Leaders = David Mistakovich (Round I) and Rod Shank (Round II).
Addresses Objectives 2 and 9.

Recommendations:

1. Recruitment – consider the aptitude of applicants; use multiple recruitment methods (OPM test, Co-ops, in-house training, S.T.E.P. program).
2. Training – revisit the methodology; update dated materials (including the Engineer Pamphlet); revamp the ICS and plant equipment studies; explore the availability of technical training resources like vocational schools and share training resources; pursue both formal and informal training methods; reconstitute the Hydro Manager training course; research other organizations' training resources; bring other vendors in for training; and consider management training.

3. Evaluation – evaluate skills -- oral exams are okay; work on craft evaluations; do demonstrations as skills tests.
4. Form a Corps-wide training team.
5. Develop a lessons learned website.
6. Conduct nation-wide craft seminars.
7. Develop engineers – review the EIT program.
8. Assign simple tasks with support.
9. Provide job-specific evaluation plan.
10. Redefine the IDP process.

Discussion: Recruitment depends on offering an attractive salary package. We need to update training materials, the Engineering Pamphlet. Although ICS courses are good, perhaps we need to revamp the ICS system. Share training resources across agencies and organizations. We should look to the community for resources, e.g., what technical schools offer. Use both formal and informal training methods. Training must address skills needed but also consider contracts with businesses to provide skills that cannot be hired. Unfortunately, management training follows a “sink or swim” model. Co-ops students who work part-time) and the S.T.E.P.S. program participants both can convert to fulltime employees. Develop a lessons learned website. Redirect the Center of Expertise to look at training. Look at the model for development (strategy, coordinating council of leaders) provided by the Natural Resources Management Community. Be sure to deal with the unions. They need to be included in this process!

- **R&D/Application of New Technologies.** Team Leader = Phil Wagner. Addresses Objectives 2, 3, 4, 9.

Recommendations:

1. Hydropower CoP/business line has to take ownership of hydropower R&D.
2. We need to commit to Hydropower R&D, set a minimum budget so that we have some funding to offer the PMAs in terms of a matching collaboration.
3. We need a more formalized process to identify clear hydropower R&D needs and to develop a hydropower R&D budget and funding strategy.
4. The Corps needs to work with other agencies, PMAs, and customers to maximize benefits from R&D investments – share needs and information, communicate well and often.
5. Hydropower R&D needs to support the strategic hydropower objectives.

Discussion: Hydropower R&D is not a big ticket item; it’s less than 0.2% of the Civil Works GI program (\$100k out of \$20-\$25 million), is not

aligned with the business lines (2012), and is not part of the strategic R&D programs. Hydropower R&D is generally dealt with as part of infrastructure work units. It lacks visibility as a business line. R&D would have to be budgeted by the PMAs; if so, it would bypass the Civil Works prioritization process. R&D should promote industry standards. The Corps Hydropower R&D should supplement and complement the Bureau's, TVA's, and DOE's research. The BPA is collaborating with the Bureau of Reclamation, which has a \$1 million hydropower R&D line item appropriation. Can we transfer some of the R&D requirements to the private sector? Needs include getting to a base level of compliance, improving efficiencies, risk/benefit analysis. Perhaps partnerships are the key to getting more R&D funding.

- **Investment Strategies for the Future.** Team Leader = Leon Cromartie (Round I) and Jerry Brown (Round II). Addresses Objectives 1, 4, 8, 9.

Recommendation:

In partnership with PMAs and customers, maximize funding opportunities, such as 1) funding from PMA receipts, 2) customer direct funding, and 3) appropriations, to fund justified hydropower work in a performance-driven and accountable manner.

Discussion: CG appropriations are declining (freeze on new work). There are urgent rehab needs. Document investment needs for O&M, small cap, and large cap (major rehabs). Adopt a business-driven investment strategy that is flexible, involves customers and PMAs, that is case (project)-specific, and accountable. "Blended" funding is desirable (PMA direct funding language should allow discretion to include joint costs and large cap costs – don't make this mandatory). WRDA 2000 allowed customer funding. Examples include Jonesboro agreement for expensed and small and large capitalizations; LRN agreement for major capital projects. Investments are needed for O&M, rehabs (urgent), completing CG projects, large and small capitalization. Investment strategy must recognize regional needs. Customers and PMAs must be involved in investment decisions, priority setting. Solidify partnering relationships already initiated by customer MOAs. Start with relatively low-cost projects if possible until the trust and confidence is sufficiently development. Accountability is needed in terms of costs and schedules; the Corps is accountable on expenditures and schedules. Direct funds should not be reprogrammed.

- **Strategic Communications.** Team Leader = Bob Porter (Round I) and Jon Worthington (Round II). Addresses Objectives 7, 8, 9.

Recommendations:

1. Audiences (Who)

- a. Internal = Hydropower community;
 - b. External = PMAs, PMA customers. Corps beyond Hydropower, State and federal regulators (OMB, FERC, VSFWL, Treasury), tribes, other multi-purpose users, Congress, environmental community (EPA, States, Clean Water consortium)
 - c. Trade Associations (APPA, NRECA).
2. Messages (What)
- a. Promote what the Corps and the entire Hydropower community do right; this will build trust and confidence in the Corps.
 - b. Give entire power community fair warning and explanations about negative events.
 - c. The Corps is human, do not expect perfection. Admit when we're wrong. Seek reasonable expectations.
 - d. We are a self-sustained program.
 - e. Work on 1-Door to the Corps – consistent messages.
3. Approaches (How)
- a. Speak for ourselves (vs. have others talk for the Corps). We do great things and need to voice them.
 - b. Publish specific improvements to infrastructure; the public is concerned about it.
 - c. Share data and methods.
 - d. Use power/water 101 courses to inform audiences.
 - e. Engage critics as potential defenders.
 - f. Emergency response situations provide good news stories.
 - g. Use websites, visitor centers, educational tours, retirees.
 - h. Meet with stakeholders often and share work plans to breed understanding about processes.
 - i. Deliver speeches and exhibits at county fairs, boat shows, Lions Club meetings.
 - j. Ensure that contact lines (1-800, hotlines, multi-phone) are not perennially busy. Don't neglect phone for web.
 - k. Invite OASA(CW) staff, OMB examiners, congressional staff for site visits, especially to highlight O&M needs.
 - l. Set up joint operating committee.
 - m. Involve Chamber of Commerce.
 - n. Develop technical information packets (NHA).
 - o. Give tours of power plants (can do under contract with self-sustaining fees).

Discussion: Has the public lost sight of the Corps' value to the nation? Build a constituency beyond direct power customers (recreation sites should be accessible at Bass Pro Shops, county fairs, or state recreation

websites). Counter bad press releases with stories about positive contributions. Have press releases ready for newspapers. Explain how we recover costs. Provide real-time information (scrubbed for security concerns), e.g., range of times and flows for fishermen. Meet with basin-wide groups. Step outside the box, e.g., www.bobber.info flash animation site for children on water safety.” Enlist help of American Public Power Association to develop information packages and curricula for schools.

Lunchtime speakers were provocative:

- Craig Holt, UniSys, Office of National Business Transformation
 - Change is a constant. Adapt or become irrelevant.
 - Change involves 2 parts alignment, 1 part accountability, and 2 parts attitude. Attitude change is both personal and organizational.
 - Having to re-align is an opportunity. It involves leadership, listening, and learning. Key is to develop understanding. Sequence is 1) understand what is required; 2) choose to accept the need for change or not (it’s a personal choice); and 3) commit behaviorally (walk the walk; talk is cheap).
 - Senior management should focus on strategic goals; middle management on tactical outcomes; and the front line on operational outputs.
 - Note: it takes senior management 2 weeks-2 months to accept changes, middle management 6 months, and front line up to 2 years to make change.
 - Integrate management decision making, performance evaluation, budget development and execution, and reinforcements (including action for non-compliance).
 - Keep reviewing assumptions.
- Carl Vansant, Editor-in-Chief, Hydro Review, HCI Publications
 - Hydropower faces 2 key future challenges:
 - Public relations. There is a need to establish a good image for hydropower. This requires public outreach, strong and constructive communications. This is a growing need because decisions are affected by public opinion and because hydropower is a target for activists. Technical people must become diplomats, advocates.
 - Information sharing. There is increasing need in the hydropower community to cooperate and maintain liaisons, such as with the National Hydropower Association. Share technical information nationally and internationally. This activity will help promote R&D funding to better use resources and optimize operations. The Department of Energy is paying attention to hydropower under the current (Bush) administration with respect to variable speed turbines, which should significantly improve efficiency.

Day 3, Thursday, July 22, 2004

The Bureau of Reclamation and the Bonneville Power Administration presented information about their strategic planning efforts.

Deborah Linke, Manager, Power Resources Office, U.S. Bureau of Reclamation (with Gary Osburn, Technical Service Center, and Mitch Samuelian, Power Resources Office). [See Powerpoint presentations]. They provided insights on strategic planning related to the hydropower community.

Deborah Linke

- Our strengths are our people, solid plants, maintenance standards and practices, and a “can do” attitude.
- Our vision is to develop a cohesive power community that positions Reclamation’s power program to meet today’s and tomorrow’s challenges.
- We developed our strategic plan with a Performance Review Group and stakeholders, which we update annually with our regional teams and technical personnel.
- Our key initiatives are to:
 - Ensure that our plants are running reliably – through power review of O&M, condition guides to conduct plant condition assessment and rate units, use of industry standards (benchmarking) and best practices, a hydropower asset management (HydroAMP) process for risk-based condition assessment, mechanical and electrical services phone consultations, and a power website containing standards, technical manuals, benchmarking information, refurbishment, and OMB-approved performance targets.
 - Proactively coordinate power-related issues – through a Power Maintenance Council and adoption of a long view.
 - Maintain core competency of power personnel – through power personnel succession planning, knowledge transfer efforts, formal and informal training (e.g., accredited “Principles of Hydropower” course), FIST (facilities, instructions, standards, techniques) manuals and technical standards, PowerEquip bulletins, apprenticeships, shadowing a lead condition assessment reviewer, facility managers development program, and “Heart of Hydropower” award.
 - Be a good member of the power community; build and maintain relationships through opportunities to collaborate, PMA partnerships, power managers’ meetings, a power website, and a partnership with Hydro Quebec. Thinking about reconstituting a federal hydropower council.

Gary Osburn

- Provided an overview of the power review of O&M process.

- Goals of program review:
 - Operate facilities effectively, economically, and commensurate with standards.
 - Promote corporate knowledge transfer in a time of workforce change.
 - Provide optimal value to customers and stakeholders.
 - Protect the federal investment.
 - Provide reliable services.
 - Adhere to safety and environmental requirements.
 - Comply with legal and contractual provisions.
- Tools/Methods for conducting periodic assessments:
 - Generic or template checksheets
 - Use MAXIMO data; will be linked to financial system.
 - Site interviews, inspections, documents.
 - Annual, periodic, and comprehensive reviews.
 - Define Category 1 (severe deficiencies), Category 2 (important matters), and Category 3 (sound and beneficial suggestions) needs.
 - Make recommendations in electrical maintenance, mechanical maintenance, operations, management, and structure.
 - At Corps request/expense, conducted three comprehensive power reviews for Corps – The Dalles, Chief Joseph, and McNary.
- Results = process, efficiency, effectiveness improvements.
- Recommendations are tracked.

Jim Clune, Executive with the Bonneville Power Administration, spoke about strategic planning efforts regarding the Federal Columbia River Power System (FCRPS).

- Partnership among the Corps, the Bureau of Reclamation, and the Bonneville Power Administration.
- Direct funding agreements to fund O&M and capital improvements in the Corps and Bureau.
- 1999 – first asset management strategy system for the Columbia River comprised of processes and tools to align resources to achieve business goals at lowest long-term cost. Led to performance standards, process improvements, and a \$1 billion investment program over 13 years to improve reliability and availability of power generation focused immediately on the Grand Coulee runner replacements, Bonneville head sensing, and deployment of Near Real Time Optimization (NRTO) computer water use programs.
- Process: Plan, Do, Measure, Adjust.
 - Plan = strategic planning to define future direction.
 - Do = life cycle asset planning and management and resource management.
 - Measures = use performance measures contrived within Balanced Scorecard format, conduct assessments, evaluate results.
 - Adjust.
- Strategic vision: maximize value to the region.
- Strategic Goals and Objectives (from the stakeholders' perspectives):

- Power reliability – provide reliable power supply; support a reliable transmission system.
- Low-cost power – provide cost-effective power supply.
- Trusted stewardship – manage FCRPS to support multiple benefits to the river.
- Long-term target = 210 average megawatts of power generation; short-term target (FY 05) = 10 megawatts.
- Internal Perspective (processes and systems) – focus on supply (be prepared to take advantage of new demand opportunities, secure cost-effective efficiency improvements, and secure cost-effective capacity improvements); asset condition (use maintenance best practices, manage asset condition to reduce risk); operations (use right amount of water in the right places to meet multiple purposes, operate each plant’s generation efficiently); and partnering (operate as an integrated regional partnership, use the asset management process effectively).
- People and Culture Perspective – focus on safety (perform work safely), capable workforce (right people in the right jobs with the right skills at the right time in the right numbers), and culture (an environment of performance and results).
- Lessons learned: culture clash between schedulers and generation dispatchers and fear of use of new tools, especially computer modeling capabilities; fear of being displaced. Takes leadership to reinforce and demonstrate the value of implementing process improvements.

Wrap-Up/Summary Themes – Roy Harvison

The last 10 years have seen a lack of investment, deteriorating infrastructure, flat budgets, a frustrated workforce, a lack of vision, unachievable 10-year plans, major rehabilitations, customer funding MOAs, and PMA direct funding. We need to re-establish a vision for the future that reflects dependable funding and a reliable product, to move toward new achievable goals and multi-year planning, and establish and nurture new relationships with PMAs, customers, and internally. These are our keys to success.

- We must partner and collaborate (“we’re all in this together”).
- We must recruit talent and improve training programs to sustain it. This includes update our Engineering Circulars and Pamphlets and local training and evaluation tools.
- Our performance measures should support our hydropower objectives and will provide critical information for decision makers. There’s more work to do to finalize our performance measures.
- The people at this meeting are key members of the Hydropower Community of Practice (CoP). CoP success depends on sharing data, information, and lessons learned.
- There are opportunities for collaboration with the Bureau of Reclamation.
- Hydropower R&D needs a stronger voice at HQUSACE. There is much that we can do in collaboration with others.

- We have a good story to tell and must find multiple and creative ways to tell it.
- We must work with/reconcile multiple (and sometimes conflicting) uses of water. A broader view of water management would be helpful, as would a Hydropower water management sub-CoP with PMAs.

Enclosure 1

Attendee Roster

Hydropower Strategic Planning Workshop, Denver, CO, 20-22 July 2004

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