



Department of Energy

Bonneville Power Administration
P.O. Box 3621
Portland, Oregon 97208-3621

FREEDOM OF INFORMATION ACT PROGRAM

May 21, 2015

In reply refer to: FOIA #BPA-2015-01168-F

Douglas Albright
Actuation Test Equipment Company
3393 Eddie Road
Winnebago, IL 61088

Mr. Albright:

This is a final response to your request for Bonneville Power Administration (BPA) records under the Freedom of Information Act (FOIA), 5 U.S.C. § 552. Your request was received in our office on April 15, 2015, with an acknowledgement letter sent to you on April 20, 2015.

You requested:

The most recent Hydro Optimization Team (HOT) agenda and meeting minutes.

Response:

We conducted a search of the electronic records of Tiffany Newton, Public Utilities Specialist, Federal Hydro Projects. We have located 41 pages of material responsive to your request. Fourteen of the pages originated from the U.S. Army Corps of Engineers and were referred to them for determination and release. Below is the contact information for that office should you need to follow up on the referral:

Portland District Public Affairs Office
U. S. Army Corps of Engineers
P.O. Box 2946
Portland, OR 97208-2946
503-808-4521 Fax: 503-808-4526

Foia-nwp@usace.army.mil

The remaining 27 pages are released in their entirety.

You agreed to pay all fees associated with this request. Fees totaling \$37.10 are due. You will be billed separately for that amount.

Appeal:

You may still seek administrative appeal pursuant to Department of Energy FOIA regulations at 10 C.F.R. § 1004.8 if you feel the search was not adequate. If you choose to appeal, you must do so in writing within 30 days, and include the following information:

- (1) The nature of your appeal - denial of records, partial denial of records, adequacy of search, or denial of fee waiver;
- (2) Any legal authorities relied upon to support the appeal; and
- (3) A copy of this determination letter.

Clearly mark both your letter and envelope with the words "FOIA Appeal," and direct it to the following address:

Director, Office of Hearings and Appeals
Department of Energy
1000 Independence Avenue SW
Washington DC 20585-1615

I appreciate the opportunity to assist you. If you have any questions, please contact Kim Winn, Case Coordinator, at 503-230-5273.

Sincerely,



C. M. Frost
Freedom of Information/Privacy Act Officer

Enclosure: Responsive documents



Monday, April 6, 2015
1:00 pm – 4:30 pm
(T*((PST)

[Join WebEx meeting](#)

Meeting number: 795- 742- 260

Meeting password: Apr6@2015

Join by phone

Toll-free number: 1-866-919-8387

Leader passcode: 5162082

Participant passcode: 9371322

@ BPA Headquarters
Rm. 670

Hydro-Optimization
Team Meeting

CO-CHAIRS: Andrew Rasmussen (Corps); George Brown (BPA); Bent Mouritsen (USBR)

Agenda

1:00 pm – 4:30 pm

- Introductions (10 min) George Brown
- Review actions (10 min) George Brown
- Update from co-chairs (10 min) George Brown, Andrew Rasmussen, Bent Mouritsen
 - Less meeting time to be spent on implementation details, more time on brainstorming, planning, initiation of new projects, and oversight.
- BPA Energy Efficiency Presentation (15 min) Tom Osborn, Brad Miller
- Status of Ongoing Projects:
 - GBO Status – Plan for FY15 and beyond (15 min) Dan Patla
 - Brief status update of work that is underway
 - Lessons learned to share with HOT
 - 3D CAM Operation Surveys–FY14 results FY15 plan (15 min) Dan Patla
 - Lessons learned to share with HOT
 - Stand Alone T2 Software (15 min) Bent Mouritsen
 - Deployment status
 - Lessons learned to share with HOT
- GDACS/T2-Optimization (30 min) Dave Brown

- Where is the system turned on and where is it not?
- Reasons for it to be turned off?
- Demonstration of user interface

- Break (10 min)

- Discussion of new ideas/initiatives – potential topics: (up to 1.5 hrs) All
 - Choose some new ideas to start working on
 - Assign individuals/teams and set milestones
 - Optimizing outage time. Critical availability.
 - Optimization inventory.
 - Feedback. Surveys/audits/real-time optimization status.
 - User interface tools for T2 and other systems.
 - Incentives for operators to maximize efficiency.
 - Transformer losses – How much at each plant? Any way to reduce no-load loss.
 - Summer/fall opening of HV disconnect switches?

- Wrap Up (10 min) George Brown, Andrew Rasmussen, Bent Mouritsen
 - Review actions items today
 - Set next meeting date
 - Add new topics for next meeting

***** NEXT MEETING TBD*****

Hydro Optimization Team Consensus Decision Levels

1. I can say an unqualified “yes” to the proposed decision. I am satisfied that the decision is an expression of the wisdom of the group.
2. I find the proposed decision perfectly acceptable.
3. I can live with the proposed decision, although I am not especially enthusiastic about it.
4. I do not fully agree with the proposed decision and need to register my view about it. However, I do not choose to block the decision. I am willing to trust the wisdom of the group.
5. I do not agree with the decision and feel the need to stand in the way of acceptance.
6. I feel we have no clear sense of unity in the Team. We need to do more work before consensus can be reached.

DRAFT SUMMARY

HOT MEETING BPA HEADQUARTERS APRIL 6, 2015 BPA

Attendee List

Bent Mouritsen (phone) – USBR, co-chair
Erin Foraker (phone) – USBR, TSC
Brian Schmidtke (phone) - USACE
George Brown – BPA, co-chair
Andrew Rasmussen – USACE, co-chair
Larry Haas – USACE, HDC
Dan Patla – USACE, HDC
Jeff Sedgwick - USACE
Dan Ramirez – USACE, HDC
Lewis Dixon – USACE, ACCS (Automated Controls and Cyber Security)
John Yen – USACE, HDC
Doug Komoroski – USACE, HDC
Nathan Henshaw – USACE, HDC
Francis Halpin – BPA
Brad Miller – BPA
Tiffany Newton – BPA
Sean Walton – USACE, HDC
Steve Ernst – USACE, HDC

Partial attendance:

Luke Chase – BPA
Jeff Racicot – BPA
Jack Kolze – BPA
Sandra Takabayashi – BPA

INTRODUCTION SUMMARY

George Brown (BPA) led introductions and reviewed the agenda.



4-6-15 - HOT Team Agenda.pdf



Copy of RevisedHOT Team Actions-4-6-20

The actions list was reviewed and revised during the meeting.

HOT CHARTER



HOT Charter
10-30-2012.pdf

NOTES FROM CO-CHAIR CONFERENCE CALL

Less meeting time to be spent on implementation details, more time on brainstorming, planning, initiation of new projects, and oversight.

The focus of the Hydro Optimization Team (HOT) is a technical innovation, developing new ideas.

No charter updates or changes are necessary.

BPA ENERGY EFFICIENCY PRESENTATION

Brad Miller from BPA presented information about BPA's energy efficiency program for the federal sector. USACE and USBR could receive funding assistance to implement energy efficiency measures at dams/powerhouses that result in saving energy and reducing station service load.

\$2.5M - \$3M annual budget for energy efficiency at federal facility in the NW.

Example projects that have been completed or are underway: BON hatchery efficiency upgrades, DET lighting upgrades, DWK hatchery VFDs on circulation pumps.

Briefly discussed if surveys have been performed at all FCRPS and if EE priorities have been established. Much survey work has been performed but more could be done to consolidate and prioritize across the plants.

HOT and BPA EE collaboration could be beneficial.



FCRPS Meeting
040615.pdf

STAUS OF ONGOING PROJECTS:

GBO STATUS

Gate blade optimizer goals: stand alone, automated units to test for and determine individual unit performance curves and optimal gate/blade relationships for all conditions.

Prior GBO iterations had reliability issues largely due to data management issues.

The team discussed the plan for FY15 and beyond. The first quarter FY15 goal has been met, which was to update the PLC code to perform data logging on the PLC instead of a separate computer. HDC also streamlined the amount of data being collected based upon findings from previous GBO data. Third quarter FY15 goal to store data in a compact flash card in the PLC has been met ahead of schedule.

Future work may involve adding an HMI to the PLC, since the computer interface is no longer being used.

Work is focused on The Dalles. Two of the ten GBOs are currently deployed at The Dalles. Still working out kinks in data collection and analysis. TDA will continue to serve as the test plant.

When will be the time to assess whether or not GBO is working? Doug discussed that data for one family at TDA is showing good promise. The other family remains difficult. The thought among the group was that it could be several years before TDA GBO work is substantially complete.

The team discussed pursuing a parallel path at TDA to index test a number of units to provide a comparison to GBO results and to expedite the determination of the value of individual unit performance data.

3D CAM SURVEYS

The HOT Team discussed 3D cams survey results. Results are fair. Cam systems are operating relatively well. With the transition to digital governors, we need to establish new procedures and systems to track/audit the performance and accuracy of the digital governors. Team will transition to doing 3D Cam and digital governor surveys. Some work needs to be done to pull digital governor data into GDACS to allow historical audits.

The 3D Cam Operations Surveys will continue to be completed April and September each year and digital governor surveys will be added once the GDACS capability is completed.

STAND ALONE T2 SOFTWARE

Bent Mouritsen (USBR) – reported T2 software was implemented at Black Canyon last August 2013. Anderson Ranch was completed recently. Stand alone T2 is being deployed across USBR plants including Glen Canyon by early FY16.

They have not yet developed tools or systems to measure adoption of the T2 system or check how well it is working. Bent to ask Toby Steves about this but doesn't think they are measuring or tracking the success. The USACE also is not yet tracking the use/adoption of the T2 module in GDACS.

GDACS/ACCS PRESENTATION

Lewis Dixon presented and explained the user interface of the GDACS T2 software module.

BON, TDA, JDA, and CHJ are currently running T2. GCL will in the future, but there are some data management issues that ACCS is resolving before fully implementing at GCL. GDACS installation and commissioning is underway at GCL.

There may be some issues with the computational efficiency of the program. Lewis Dixon will survey the ACCS group and work with operators to determine any reasons why T2 may not be implemented to its fullest extent.

BRAINSTORMING – NEW INITIATIVES

The following were discussed:

- Optimizing outage time. Critical availability.
 - (Erin Foraker) Scoping effort. Include Matt Dau (BPA).
- Optimization inventory.
- Feedback. Surveys/automatic audits/real-time optimization status.
 - First step: bring digi governor inputs into GDACS (John Yen)
 - Developing tools and techniques to follow.
- User interface tools for T2 and other systems.
 - Interview plant and BPA operators to see if there would be benefit to a better understanding of optimal plant operation.
 - What are the barriers to T2 adoption right now?
 - Are there errors or problems with the interface?
- Incentives for operators to maximize efficiency.
 - Could happen later, after automatic audits/feedback techniques are developed.
- Energy losses.
 - Station service – collaboration with energy efficiency, pumps, large motors, hvac, lighting (incl. emergency DC)
 - Start working with BPA EE (George Brown).
 - Consolidated report of all survey results across all FCRPS plants. Identification of needed surveys.
 - Transformer losses – How much at each plant? Any way to reduce no-load loss (John Yen)
 - Summer/fall opening of HV disconnect switches?
- Parallel path to GBO, index tests?
 - Andrew Rasmussen to start preparing SSB for an AE to test up to 14 units at The Dalles. Perhaps 5 units base and 9 optional, performed in blocks of units.

REVIEW ACTION ITEMS

Reviewed and revised action items list.

NEXT MEETING

The next HOT meeting is scheduled for October 28, 2015 at BPA.

**HOT Team Actions List
11/17/11**

4/17/2015

SUBJECT AREA	STATUS	ACTION	RESPONSIBILITY	DATE INITIATED	DUE DATE	STATUS/COMMENTS
Operations	new	HOT to coordinate with Matt Dau on the topic of critical availability and optimizing outage time for maximum power generation. Participate in scoping, reviews, and solutions.	Erin Foraker	04/06/15	04/30/16	Coordinate over the next year, but implementation will likely extend far beyond that.
Operations	new	Spearhead the effort to bring digital governor data into GDACS, to facilitate digital governor surveys, and future automatic audits.	John Yen	04/06/15	TBD	Update 10/28 but not due
Operations	new	ACCS to investigate issue of T2 adoption and use. T2 is not in use at all plants where it is installed. Are there errors that need to be addressed? Are there user interface issues?	Lewis Dixon	04/06/15	10/28/15	
Operations	new	Begin coordinating with BPA Energy Efficiency for station loads and efficiencies. Produce a consolidated report with all survey results completed to data and identify any needed survey work. Work with BPA EE to prioritize projects.	George Brown	04/06/15	10/28/15 no end date	Initiate effort by 10/28/2015 meeting. Will be an ongoing effort.
Operations	new	Investigate transformer losses and ability to reduce no load loss, ex. Seasonal opening of HV disconnect switches when units are not needed. Determine plants with highest losses and highest potential for savings. Develop potential operational changes and quantify savings.	John Yen	04/06/15	04/30/16	
Operations	new	Spearhead a parallel path to GBO at The Dalles. Generate an SSB for index tests at TDA for 5 base units and 9 optional units. Work with NWP large cap manager to prepare a DSD for presentation at the CWG.	Andrew Rasmussen	04/06/15	10/28/15	
Administrative	on going	Invite Steve Kerns (BPA) to discuss Deterministic Model and Model with Uncertainty for FCRPS system optimization.	Brown, Haas	03/26/14		at next meeting
Administrative	on going	Distribute survey of ideas to HOT Team for feedback on future efficiency projects	Brown	03/26/14		
Administrative	on going	HDC will provide a document that will examine trending. Specifically, this document will address trending of major inputs (MW, blade angle, wicket gate stroke, gross head, and flow), as well as functions of these inputs. The document will provide the pros and cons of adding trending to each of these, including--as much as possible--anticipated dollar amounts, impacts on maintenance, and possible implementation. Moreover, HDC will provide a recommended path for implementation.	Bowers, Patla	05/16/12		
Administrative	completed	Invite Dave Brown (Corps) to next HOT Team meeting - background information about ACCS and T2	Brown, Haas	03/26/14		
Operations	Completed	Follow-up on breaker actions - decreases in efficiency gains for REC credits and how they apply. Impacts of Wind.	Brown	11/17/11	05/16/12	George Brown will give the presentation at next meeting.
Administrative	completed	Talk with Mike Alder and Terry Kent about level of team participation for Reclamation	Brown, Haas	05/16/12		
Administrative	completed	HOT Team will provide comments on the charter for next meeting	All	05/16/12	10/25/12	
Financial	completed	Follow up on Minidoka efficiency calculation	Mouritsen	03/26/14		
Administrative	completed	Charter Review	All	05/16/12		Provide comments on the charter and discuss at next meeting.

**HOT Team Actions List
11/17/11**

4/17/2015

SUBJECT AREA	STATUS	ACTION	RESPONSIBILITY	DATE INITIATED	DUE DATE	STATUS/COMMENTS
Financial	completed	Follow-up on Lower Granite Flow Meter Clean Up contract and timing of funding	KNAAK	11/17/11	05/16/12	Project forces are funded and have been asked to repair the leaking system this FY.
Administrative	completed	Follow up on contact person at McNary to be involved with HOT activities and committee	Patla	11/17/11	05/16/12	there is a NWW POC for the HOT team - why do you need a separate person at MCN? In addition, MCN has a tremendous amount of work for the next several years (e.g. FY18) and is struggling with
Operations	completed	Follow up on fixing software and unit testing of software issue for McNary GBO	Patla and Bowers	11/17/11	05/16/12	3D Cams off line suspended. No data collection.
Administrative	completed	Follow up on coding issues and feasibility of modifying American Governor contract for Gate Blade Optimization Project	KNAAK	11/17/11	05/16/12	Each KO has their own way to approaching a modification like this. I talked with our KO Chief and she told me that if it was a programming change then it might be within scope of the current contract
Operations	completed	GBO Suspended Unit #19 at TDA - GBO testing at JDA for data collection, and fix units #5, #6, and #11 (other problems for time being)	Patla and Bowers	11/17/11	05/16/12	Pursue funding and modify existing or develop new contract. Need data collection.

Charter

Hydrogeneration Optimization Team

Bonneville Power Administration, U.S. Army Corps of Engineers, and
U.S. Bureau of Reclamation

Modified 29 October 2012

Establishment and Authority

In accordance with the goal of the Federal Columbia River Power System (FCRPS) Asset Management Strategy to maximize the value of the FCRPS, the Hydrogeneration Optimization Team (HOT) was created as a subcommittee of the Joint Operating Committee (JOC) in order to oversee FCRPS optimization efforts.

Purposes/Responsibilities

The HOT is a partnership between the Bonneville Power Administration (BPA), US Army Corps of Engineers (Corps), and Bureau of Reclamation (Reclamation) and functions to develop tools and strategies for enhancing net revenues through hydrogeneration optimization and efficiency improvements. HOT activities are limited to providing oversight and recommendations to the JOC, through the Capital Work Group (CWG), on matters that directly concern the optimization program. Implementation of optimization efforts will be accomplished through normal Corps and Reclamation project management business practices. HOT activities include the following:

1. Identify/prioritize optimization opportunities and provide program level recommendations;
2. Assist others, as needed, in developing project scope, schedule, budget, and/or other business case documentation;
3. Evaluate detailed program plans and provide recommendations to JOC/CWG;
4. Track costs/schedule of optimization projects and initiate/recommend changes, as needed, to detailed program plans;
5. Initiate studies in support of optimization priorities;
6. Analyze program/project success and recommends program/project improvements;
7. Serve as a forum for sharing knowledge, experience, and technology;
8. Evaluate/coordinate optimization efforts initiated by outside agencies.

Charge

The HOT is expected to offer recommendations and oversight for optimization initiatives as well as provide technical information/direction relevant to optimization efforts.

Membership

Membership will include a JOC authorized co-chair from each agency. Team members shall consist of representatives from each agency and shall constitute both a technical and administrative cross-section. Each agency shall determine the respective number of representatives participating as Team members, provided at least one representative is designated to represent each respective agency.

Procedural Rules

Meetings: The Team shall determine the frequency of its meetings, provided that it shall meet at least twice annually. Email notice of the time and location of all Team meetings shall be provided to each member no later than 15 days prior to the meeting. A meeting agenda with items for which action may be taken shall be provided no later than 7 days prior to the meeting.

BPA shall assume all administrative functions associated with HOT meetings including coordinating meeting facilities and general distribution of information.

Meeting Notes: Draft meeting notes shall be provided to members no later than 14 days after the meeting with request for corrections, corrections being provided back within 7 days of request. Final meeting notes shall be provided to members no later than 30 days after the meeting. Action items shall be included with the meeting notes.

Reporting: The HOT shall report to and update the JOC and Capital Work Group on the progress of its program and the status of individual program plans. Program updates shall be provided during the schedule joint/tri-agency JOC meetings or at each agencies JOC meeting.

Charter Review: The HOT shall review this charter on an annual basis and update/modify as required.

FCRPS Meeting

Energy Efficiency at Hydro Facilities

Presented by:

Brad Miller -Tom Osborn
Energy Efficiency
BPA

April 06, 2015



BPA's Energy Smart Reserved Power

- What:** Energy-Saving Assistance (both technical and financial)
- Who:** Federal Facilities that receive Reserved Power of Station Service
- Where:** Almost anywhere in the Pacific Northwest
- When:** Open application period June-August
- Why:** Reduce energy usage and increase hydro capabilities within the Region to reduce the Administrators obligation to meet load
- How:** Contact BPA Energy Efficiency Federal Sector to participate



Energy Savings: Results to Date

Number of Projects:

Total Projects Completed – Army Corps = 61,
USBR = 22

Fed Irrigation District Projects – 16 projects

BPA Investment – over **\$5 Million**

Energy Saved:

Total Energy Savings – **50,000,000 kWh/yr**

Cost Avoided:

Total Cost Avoided – **\$2,500,000/yr** (assuming \$0.05/kWh)

Note: Totals include projects completed from 2001 through March 2010



Current Program Offering

Energy Audits:

No-cost preliminary energy site assessments are available.

Incentives:

Cash or co-funding incentives of up to 70% are available (some up to \$100%). Actual incentives are based on each project's electric energy savings.

Performance Assurance:

Projects will be monitored to verify savings.



Potential Projects



Compressed Air System with VFD



New Compressed Air System



Levey Pumping



Fish Water Pumps



Dewatering Pump



Chiller Upgrade



HMU Pumping



Lateral Replacement



Building Energy Modeling

BPA performs energy modeling of buildings.

Building specs and zoning entered into eQuest

Hourly weather data a performance

Compare to consumption data if available

Analyze 'what if' scenarios to estimate savings



Energy Data Logging

BPA can perform energy monitoring

Records data on subsystem (pump, chiller, etc)

Can add in other trend data (such as water temp)

Estimate potential long term energy savings



Lighting

HP T-8/5/LED and More



For more information

For more details about how EE can partner together to make our hydroelectric facilities more energy efficient, you can contact:

Tom Osborn – Mech Engr - Walla Walla
Email: trosborn@bpa.gov
Phone: 509-527-6211

or

Brad Miller – Active Federal Sector Lead - Portland
Email: bdmiller@bpa.gov
Phone: 503.230.3764

