AGENDA

Fish Passage O&M Coordination (FPOM) Team
John Day Dam 8th floor conference room
June 12, 2008 (0900-1230)
Call in #503-808-5199, passcode is 2580

1. Review/Approve Agenda and Minutes (Klatte)

2. Action Items (Klatte)

2.1. [long time ago] Switchgate seals at BON and JDA. **ACTION:** JDA will move forward with the airbladder seals. NOAA worries about fish being able to access areas under the gate. BON will continue moving forward with reducing leakage around and under the gate. ***STATUS:*** *JDA has turned the task over to the small projects team at RDP.*

2.2. [May 08] Shad Fishery Task Group. **ACTION:** Cordie will contact Roger and inform him we need the guidelines by 12 May. Cordie will send the draft to Klatte or Mackey. ***STATUS:*** *Draft was revised and sent to the task group on 5 June.*

2.3. [May 08] TDA grating replacement. **ACTION:** N. Richards will look into the possibility of painting galvanized grates. ***STATUS:*** *Doesn't look promising.*

2.4. [May 08] TDA grating replacement. **ACTION:** Cordie will look at the cost of water chemistry testing. ***STATUS:*** *cost for equipment is $140. Project Fisheries anticipates having results by 10 June.*

2.5. [May 08] ICH U1-6 1% tables. **ACTION:** Moody to send clean tables to FPOM. ***STATUS:*** *Sent on 12 May for inclusion in the May minutes.*

2.6. [May 08] McNary dewatering screen monitoring. **ACTION:** Swenson will provide some ideas about potential solutions to NWW bios. ***STATUS:*** *in progress.*

2.7. [May 08] McNary dewatering screens monitoring. **ACTION:** Dykstra will set up a meeting for an ad-hoc discussion with engineers and the Project. Dykstra will also make sure Swenson gets electronic copies of the channel and screen drawings. ***STATUS:*** *Swenson has received copies.*

2.8. [May 08] B2CC end of season closure date. **ACTION:** Fredricks will do a SIMPAS analysis for 29 August and 2 September. That will be presented at the June FPOM.

2.9. [May 08] PIT tag detection needs at JDA. **ACTION:** D. Benner will get the query information into a memo and send it to FPOM. ***STATUS: Sent on 9 June. To be discussed under item #11***

2.10. [May 08] PIT tag detection needs at JDA. **ACTION:** D. Benner (FPC) will explore the significance of the detected fish. If they run into any roadblocks, FPOM will provide assistance as necessary. ***STATUS: Sent on 9 June. To be discussed under item #11***

2.11. [May 08] PIT tag detection needs at JDA. **ACTION:** D. Wills will inquire about the Entiat releases in September 2006. ***STATUS: To be discussed under item #11***

2.12. [May 08] NWW fish release site at BON. **ACTION:** Dykstra will draft up the SOP for draining the flushing water line after each fish release. The flushing will be done by the truck drivers.

2.13. [May 08] BON B2CC closure for PNNL work. **ACTION:** Schwartz will inform Lorz once he figures out what the forebay will look like.

3. Updates.

3.1. Pinnipeds at Bonneville. Observations ended 31 May. Reports are available at: www.nwd-wc.usace.army.mil/tmt/documents/fish/2008/sea_lion_hazing2008.html

3.2. BON SLED removal.

3.3. BI exit dredging during winter maintenance.

3.4. BON spillway exploratory drilling.

4. BON AFF.

4.1. Memo from TAC requesting more sampling through the summer. (attached to the agenda)

4.2. Shad numbers and picket leads.

5. BON PH2 VBSs.

5.1. VBS drawdown transducer re-calibration update.
5.2. Proposed plan for re-installing screens. (attached to this agenda)
5.3. Bonneville PH2 VBS cleaning SOP change

The TIE crane will remain OOS until March 2009. Until that time, the PH2 VBSs will need to be cleaned using the +90' deck gantry crane. The gantry crane has height restrictions that prevent the VBSs being cleaned in the same manner as when done with the TIE crane. To accommodate those restrictions, the following procedures are recommended for cleaning VBSs with the gantry crane.

1. Do not install the spare screen.
2. Pull the main VBS up as far as the gantry crane allows, spray the debris off the screen.
3. Wait a few minutes to allow debris to circulate and go through the turbine intake slot.
4. Re-seat the screen and move to the next gatewell.

This process will cut cleaning time in a third and hopefully reduce the amount of debris remaining in the gatewell. It is understood this isn't to be the SOP when the TIE crane returns to service and the VBS can be cleaned more effectively and efficiently.

6. **BON Main Dam spillbay 15.** (memo attached to the agenda)
   6.1. BON Project needs approval to dog off several spillbays to get bay 15 operable. Timing and dogged bays will need to be discussed and approved.

7. **BON B2CC Closure.** The new crane arrived several months early. There is still a problem with getting volunteers to come in on the holiday weekend. The Project's preferred date is 2 September, followed by 29 August (only if volunteers are available).
   7.1. FPAC sent a memo to the FPOM chairs.

8. **TDA Unit 22 and the east fishway.**
9. **TDA spill pattern change.** (see documents attached to the agenda)

10. **JDA Avian abatement for the TSWs.**
11. **JDA PIT tag sampling.**

12. **McNary hoist modification.**
13. **MCN summer spill schedule.**

14. **Task Group updates**
    14.1. Fishway velocity (***Chair-Cordie****, Fredricks, Lorz, Meyer, Mackey*)
    14.2. Lamprey (***Chair-Cordie****, Clugston, Dykstra, Lorz, Mackey, Meyer, Moody, Moser, Peery, Rerecich, Zyndol*)
    14.3. Pinnipeds (***Chair-Stansell****, Bettin, Benner, Brown, Fredricks, Hausmann, Kruger, Stephenson, Richards, Wills*)
    14.4. Shad fishery (***Chair-Cordie****, Benner, Fredricks, Lorz, Mackey, R.Dick Jr., Welch, Wills*)
    14.5. TIES (***Chair-Klatte****, Bettin, Benner, Fredricks, Kruger, Mackey, Schwartz, Wills*)

15. **Water forecast**. (RCC). www.nwrfc.noaa.gov/water_supply/ws_fcst.cgi (attached to the agenda)
16. **FPP proposed changes**.
    16.1. BON sturgeon language. (incorporates changes from May meeting)
    16.2. BON 2.4.2.2.n.1 relocation
    16.3. TDA and JDA velocity measurement language.
    16.4. TDA spill pattern change
    16.5. Voluntary v involuntary spill definitions.

17. **Other**
18. **Next Meeting**
19. **Tour of TSWs**

U.S. v. Oregon Technical Advisory Committee
Memorandum

To:	Tammy Mackey, COE
From:	Robin Ehlke, TAC Chair
Date:	May 20, 2008
Subject:	Bonneville Dam Sampling

The *U.S. v. Oregon* Technical Advisory Committee (TAC) urges the Corps of Engineers to support sampling protocols at the Bonneville Dam adult trap that ensure appropriately high sample rates on Chinook and steelhead for the 2008 sampling season. The TAC rely on data from the sampling program for a variety of purposes including in-season harvest management and collecting data for use in making future run forecasts. The CRITFC sampling program at Bonneville collects ad-clip and age data on Chinook and length and age data for steelhead as well as other information. These data are not readily available from other sources for a wide spectrum of the runs especially for wild fish. TAC and IDFG also use data at Bonneville to compare to sampling data at Lower Granite dam in assessing Snake Basin returns. TAC understands that other agencies and scientists also utilize these data for a variety of purposes.

If sample sizes in the Bonneville trap are not high enough, there is increased uncertainty associated with applying the sampling data to the runs at large. TAC believes that there are often issues with in-appropriately low sample sizes even when the sampling crew is trapping as many fish as they can. When the sampling program is restricted due to water temperatures and or issues with other species such as shad the utility of the sampling data is decreased. Increased statistical uncertainty regarding the data collected at Bonneville adds to uncertainty in estimates TAC makes with the data. For example, Bonneville sampling data are used in the estimates of the B-Index steelhead run size. The run size at Bonneville is the basis of B-Index steelhead harvest management. Increased uncertainty in the steelhead sampling data has a direct impact increasing the uncertainty in harvest rate estimation for mainstem fisheries.

TAC understands that the sampling program has done a good job of minimizing handling mortality to wild fish at the trap and that currently there is little to any known mortality to wild fish at the trap. TAC also accepts that it is possible that handling mortality could increase somewhat if sample rates are kept high throughout the summer. However, TAC believes that the importance of the data collected warrants some level of flexibility in sampling protocols to ensure good sample sizes. These protocols include the number of picket leads, days sampled per week, hours sampled, and temperature criteria. Since the sampling program has a good history of handling fish carefully, the risk to wild fish should be minimal while the benefits of better quality data will be high. We request that COE work with the sampling program to resolve issues surrounding how to balance the sampling protocols with the need to collect data. The data collected are very important.

Please feel free to contact me if you have any questions regarding TAC's data needs.

CENWP-OD-B 10 June 2008

MEMORANDUM FOR THE RECORD

SUBJECT: Bonneville Dam Heavy Debris Monitoring/ plan for re-installing STSs.

On 21-23 May, Bonneville Project pulled STSs due to high debris loads on the VBSs. Screens have remained out since that time.

Currently, the Project is using drawdowns over AWS and Fish Unit trashracks as an indicator of debris levels in the river. It is the recommendation from Project Fisheries that the use of Fish Unit trashrack drawdowns be the main method for determining the feasibility of re-installing STSs and maintaining clean VBSs.

Drawdown is the difference in water level between the upstream side of a screen/trashrack and the downstream side. The FPP refers to trashrack drawdown as gatewell drawdown. For trashracks, a drawdown of 1.5' results in either raking or nighttime floating of debris, as per the 2008 FPP. A drawdown of 3.0' or more will result in immediate cleaning. Cleaning of trashracks requires load reduction and the gantry crane. The cleaning criterion for the VBSs is 1.1' drawdown or .9' drawdown on Thursdays (in preparation for the weekend). If drawdown reaches 1.5', the unit will be forced out of service until the screens can be cleaned.

The use of the Fish Unit trashracks is justified based on the fact that these trashracks have 7/8" spacing and are located at the north end of PH 2. They have smaller spacing than any other trashracks and are closer in proximity to the STS/VBSs.

As per the FPP, the Project has been monitoring drawdowns at least once per week.. Due to the flows and debris loads, the Project has been measuring fish unit drawdown once per shift (twice a day). During this time, the fish units have been shut down nightly to float trash. To accomplish this, both units are shut down for 4 hours to allow debris to float off the trashracks and be pulled away by Unit 18 (or the nearest operating main unit). Floating trash is not a preferred operation and Bonneville would prefer to not have to float trash in this manner as it takes the adult ladder at Powerhouse 2 out of criteria. This past weekend, 6 June, when trash was not floated at night the resulting drawdown was 10'. This is an indication of a serious debris problem that would undoubtedly impact VBS clogging if we were to reinstall STSs.

The recommendation from Bonneville Fisheries is to allow the Project to continue to use the monitoring of the fish unit trashracks as an indicator of debris load. Once drawdown on the trashracks is no longer exceeding the FPP's 1.5' cleaning criteria within a 24 hour period, we would suggest returning STSs to two main units for 48 hours. When the VBS drawdown after 24 hours remains below 1.1', Bonneville project would proceed with the reinstallation of the remainder of the STSs.

Bonneville Fisheries

Bonneville Main Dam Hoist Failure

27 May, 2008 at approximately 10:45.

With an approved CBT message (BON R 052708 0944) Operations was in the process of passing debris through the spillway. Spill was 150 kcfs at the time. Bay 15 was placed in local/manual control. Gate control was placed in the raise position and the operator moved upstream and south to visually insure debris was starting to pass through the gate. He heard a loud unusual noise and turned to see the gate stop raising then start descending. The gear box was starting to make a lot of noise so he moved to a safe distance. The gate was approximately six to seven dogs equating to about 13.3 feet off of sill. The gate impacted the sill with catastrophic loss of the brake assembly with components scattered around the hoist area and roadway deck. Shrapnel went through the steel brake cover. The gear box had apparent damage to the shaft and drum for the brake. The motor showed cracking on the opposite end bell housing from the gear box. Wire rope partially unraveled but remained on main drums and did not part. Visual of upper gate did not identify any damage from areas that could be visually inspected. No visual damage to drums, drum bearings, shafts, beams or sheave packs.

Failure of motor appears to have been the root cause resulting in loss of control of gear box and uncontrolled descent of gate. Eventually motor shorted out from damage as gate fell and tripped circuit breaker. Once voltage to the motor was lost the brake automatically set, but was unable to stop downward motion of gate. Brake is designed to hold gate in a static condition. Gate fell 13.3 feet in approximately one minute.

Failed Component Status:
Brake assembly is a total loss, with components on site to rebuild most but not all of brake assembly. Remainder of parts can be ordered. Date for brake assembly to be placed in service with estimate of 6-8 weeks for parts delivery and assembly. It may be in the projects best interest to purchase a new brake assembly and retain spare parts. Verification of delivery dates of repaired versus replacement components against lead time for new assembly will determine method.

Gear box experienced failure of shaft extension and gear to brake assembly. This is the same shaft and drive gear attached to the motor. That gear and shaft will have to be manufactured as there are no spares available on project or from vendor. Remainder of gears, shafts and bearings has experienced stresses from over speed and heating. Gear box will be shipped to Philadelphia gear shop in California for evaluation. Unknown return to service date for gear box; rebuild of brake shaft and gear, bearings may have long lead time and report of findings will determine time frame. Anticipate 2-3 months to have gear box placed in service, but could easily be as long as 6 months. There is no spare gear box on site.

Motor has been shipped to a local repair shop. Motor experienced catastrophic failure mostly resulting from over speed. It may still be possible to rebuild the motor. Style and frame type are obsolete so no replacements motors are available. Project does have one spare motor on site. Project is looking into purchase of a new motor with attached motor brake assembly identical to bays 1 and 18. Assume bed plate will require modifications for new style of motor. Installation of motor will be determined by gear box and brake installation. Spare motor could be installed now if all other components available.

Shafts and couplings attaching gear box to main drums appear to be in good condition with no repairs anticipated.

Main drums show no apparent damage.

Limit switches and transducer have not been evaluated yet, but should have replacement parts on site. Electrical panels show no evidence of damage, but will require controlled testing.

Bearings for main drums still need to be inspected for condition assessment resulting from over speed condition and possible excess heating.

Wire rope did not part, but is in poor condition and will require replacement. Old wire rope will need to be removed and new wire rope reeved onto drum and sheave packs.

Visual of gate 15 shows no signs of damage. An initial evaluation by structural engineers based on data from rate of descent over time and distance does not anticipate significant damage to gate or sill area. Full evaluation and engineering approval is still required prior to initial controlled testing or placing in service.

Gate main beam and sheave pack have not been inspected, but show no visual signs of damage. Unable to visually determine if pins or link beam attaching upper and lower gate assembly to beam is damaged or requires additional inspections.

Metal enclosure surrounding hoist was damaged. There are spare components on site and can be reinstalled at any time. Temporary cover was installed to eliminate potential fall protection issues.

Reviewed timing on and off cycle for south sump pump and have determined that cycle is the same as one week prior to failure of bay hoist 15. It does not appear that there is structural damage allowing additional water into tunnel and drainage system.

Longest lead time item is appears to be the gear box. Estimate 2-3 months to have gate and hoist fully operational, but could easily exceed 6 months.

Project has delayed scheduled maintenance on hoists until full evaluation is complete. Maintenance should resume within two weeks.

Plan to move forward:
In an effort to support the passage of juvenile fish and support summer spill program the project has developed a plan to restore spill pattern as close as possible and work towards fully restoring bay 15 to service. This method eliminates the necessity of accessing spare gates in north storage and repair pit. This method assumes engineering assessment will allow gate and sill to be placed back in service and no additional significant damage is encountered.

Project will look into purchasing new motors with secondary braking on the motor similar to bay 1 and 18 configuration.

Project has verified that bay 18 hoist can be placed at bay 15 or bay 11 location and electrically operate with only minimal modifications.

A bay hoist with components identical to bay 15 can be placed on dogs and drive train components moved to bay 15. Bays 14, 16 and 17 are the best choices for removal of components. Need regional input to determine best bay and dog setting.

Assume bay 17 hoist is chosen, any identical bay will suffice. Bay 17 hoist will be placed on dogs (setting to be determined). Hoist components from bay 17 to include brake assembly, gear box and motor will be removed and installed on bay hoist 15.

Bay 18 gate will need to be placed on dogs (setting to be determined), disconnected then moved to bay 11 location. Bay 11 will have to be set on dogs prior to moving gantry crane (setting to be determined). If possible it will be best for the project if bay 11 can remain on dogged setting until evolution is completed.

Bay hoist 15 will use borrowed drive train components to lift beam until cables are tight, but not to lift gate off of sill. Once cables are tight and beam is up off of the gate; beam can be removed from gate assuming no significant damage is encountered. There are significant fall protection issues that will need to be addressed. I will not allow safety of personnel to be compromised to accomplish this evolution. I will not allow bay 15 gate to be lifted with old potentially damaged wire rope. Once separated, bay 15

hoist will be moved to bay 18 location. Gantry crane can lift bay 15 gate and place on dogs once engineering approval is granted (setting to be determined). Low tail water or upcoming ROV inspection may be best time to evaluate sill area and lower portions of gate. Time frame would be early July.

At this time bay 18, 17, 15 and 11 will be on dogged setting, (settings to be determined).

Bay 18 will have concrete deck slabs installed over dogged off gate for safety of personnel to create a working platform for duration of repairs to bay hoist 15.

Wire rope will be removed and new wire rope installed on drum and beam. This work will be contracted out. Bay 15 hoist at bay 18 location is the only location that wire rope replacement and repairs can be performed safely.

Once new wire rope is installed on bay 15 hoist (located at bay 18) drive train components will be removed and reinstalled back on bay 17. Components are required to reeve wire rope.

Hoist from bay 18 can be moved from stored position at bay 11 and installed at bay 15 then placed in service. Bay 15 (assuming engineering approval) can be placed in service utilizing bay 18 hoist. This also assumes there is no damage to any other area of gate or link mechanisms. Bay 15 can be moved from dogged sttting and placed in spill pattern or it can remain at dogged position. It is the projects preference to remain at dogged position to eliminate the necessity of re-latching beam to gate and exposing personnel to fall hazards.

Gantry crane will be located back to bay 11 and placed in service. Bay 11 will then be removed from dogged position and placed in spill pattern.

At this time only bay 18 gate will remain on dogs, and or bay 15. Bay 18 is the only location to safely perform repairs and cable replacement. As components are received they will be installed.

Once installed and tested a reverse procedure will be required to place all bays back to original position. Time frame for bay 15 hoist to be placed in service could be as early as late August or September (after summer spill ceases) and could easily be into November. This will negate the requirement for having bays on dogged position to support spill.

Estimated time to complete repairs and return all bays to service is 2-3 months, but could easily go as long as 6 months if long lead time components require replacement. Assumes gate and sill evaluation is sufficient to place back in service.

CENWP-EC-H (1110-1-8a) 3 June 2008

MEMORANDUM THRU CHIEF, CENWP-OD

FOR CENWP-OD-D (Operations Manager)

Subject: Spillway Operations at The Dalles

1. Relatively high seasonal Columbia River flow may require the use of red-tagged spillway gates. This memorandum provides recommendations for when red tagged bays should be operated and the sequence in which they should be opened. Currently, spillway gates 10 through 23 are red tagged because of concerns related to trunnion friction. In addition, spillway gates 10, 11 and 13 are further red tagged due to wire rope condition and spillway gate 20 is red tagged due to delamination of the trunnion anchor. In 2005/2006 the wire ropes on gates 1 through 9 were replaced and each gate was greased and exercised through its full operating range. Gates 1 though 9 are fully operational.

2. The goal during the original design work on the spillway, stilling basin and spillway shelf was to keep the depth average velocity on the basalt at 20 fps or less. This was achieved by spilling uniformly over all 23 bays. Thus as the spill volume increased the total river and tailwater elevation increased keeping the depth average velocity at 20 fps or less. With the construction of the 6/7 spillwall in 2003 new spill patterns were developed that concentrated the spill in the northern 6 bays. This increased the depth average velocity on the spillway shelf to a value closer to 25 fps with some instances where the depth average velocity reached 30 fps. Erosion has occurred on the spillway shelf but not at a rate that has been alarming or raised any dam safety concerns.

3. Given the condition of the spillway gates and risk of failing a gate on demand, the decision was made to maximize the spill through bays 1-9 during periods of high river flow. Erosion will occur but the consequences can be mitigated whereas the consequences and mitigation of a failed tainter gate or tainter gate component are less certain.

4. The 2008 spring runoff season has provided some high flows but all indications are the project can safely pass these flows through the project without opening a red tagged bay. However, if the powerhouse is shut down for any reason, red tagged bays will need to be opened at a total river discharge of approximately 375 Kcfs. For this condition, when red tagged bays need to be opened, they should be opened incrementally to a maximum of 6 feet prior to the next gate being operated. The priority sequence of opening is: Bay 16, Bay 17, Bay 18, and Bay 19. These bays will be open to the maximum allowable as discussed in paragraph 4. If additional bays are needed the order is: Bay 14, Bay 12 and Bay 21.

5. The 1:25 spillway model at ERDC was used to identify when sheet flow would be expected at the vertical end sill. Sheet flow at the end sill is considered to be a hydraulically un-acceptable condition and therefore is the limiting criteria for maximum flow through the spillway gates.

The model suggested that the maximum flow through a single bay was 55 Kcfs to 65 Kcfs at a forebay elevation of 168 feet. Since the forebay elevation cannot exceed elevation 160, the unacceptable hydraulic condition does not limit the spill per bay. Thus, spill per bay will be limited to the maximum gate opening while maintaining a controlled flow condition. The original model reports suggest that the maximum gate opening is 28 feet with a forebay elevation of 160 feet. If the forebay elevation is less than 160 feet, the maximum gate opening will be less. (The spillway gates are currently equipped with limit switches that reduce the maximum gate opening that can be executed from the control room. To override the limit switch the gate has to be operated from the spillway deck. Thus the operator will be able to verify that flow is being controlled by the gate and uncontrolled flow has not been initiated.)

6. Table 1 is the revised spill table to account for red tagged bays. Between spill volumes of 24 Kcfs and 180 Kcfs fish passage criteria is being met, however, it is not clear how greater flows per bay will impact total dissolved gas. Table 2 provides estimated depth average velocities assuming 0 Kcfs, 100 Kcfs, 150 Kcfs, 200 Kcfs and 250 Kcfs through the powerhouse. Depth average velocities of 30 fps should not be exceeded unless an emergency is declared and gate openings can approach the uncontrolled level. Table 3 identifies the maximum powerhouse load necessary to pass different spill volumes.

7. If spill through gates 1 through 9 is expected to exceed the fish passage criteria of 180 Kcfs, or if depth average velocities of 30 fps are anticipated to be exceeded for more than 4 hours, project staff are requested to contact Laurie Ebner at 503-250-3404. A multi-beam hydrosurvey of the basalt shelf and a dive survey to measure undercutting should be performed at the end of the 2008 spill season.

Donald R. Chambers

Encl

DONALD R. CHAMBERS, P.E.
Chief, Engineering and Construction Division

CF:
CENWD-PDW-R (Buchholz)
CENWP-PM-E (Langsley)
CENWP-PM-PM (Helwig)

The Dalles Lock and Dam
Spillway

The far right column identified the minimum powerhouse flow required to maximize the spill through bays 1-9 and maintain a depth average velocity on the spillway shelf of 30 fps. For example at a 409,500 cfs total river you need a minimum of 134,100 cfs through the powerhouse and you can put 275,400 cfs through the spillway (bays 1-9).

Table 3 - Discharge Per Bay Given a Tailwater and 30 fps Depth Average Velocities on the Spillway Shelf

Tailwater Elevation	Total River Flow Based on Bonneville Forebay Elevation of 74 feet	Critical Depth (TW-68) Assuming critical depth occurring on apron downstream of end sill	Maximum Q per Bay given a depth average velocity of 30 fps	Q through spillway assuming bays 1-9 and 30 fps	Minimum Flow Through Powerhouse - Assuming Spill in Bays 1-9 to 30 fps
ft	cfs	ft	cfs	cfs	cfs
75	70,000	7	12,600	113,400	0
76	103,900	8	14,400	129,600	0
77	137,900	9	16,200	145,800	0
78	171,800	10	18,000	162,000	9,800
79	205,800	11	19,800	178,200	27,600
80	239,700	12	21,600	194,400	45,300
81	273,700	13	23,400	210,600	63,100
82	307,600	14	25,200	226,800	80,800
83	341,600	15	27,000	243,000	98,600
84	375,600	16	28,800	259,200	116,400
85	409,500	17	30,600	275,400	134,100
86	443,500	18	32,400	291,600	151,900
87	477,400	19	34,200	307,800	169,600
88	511,400	20	36,000	324,000	187,400
89	545,300	21	37,800	340,200	205,100
90	579,300	22	39,600	356,400	222,900

2 June 2008; Ebner;CENWP-EC-HD

Table 1 - 2008 Spill Patterns

Note: The following is provided as the spill pattern at The Dalles, which acknowledges the fact that spillbays 10 through 23 are red tagged and can not be used.

The Dalles

Discharge Distribution Patterns

											40% Spill
Spillway Bay Number									Total	Total	Total
1	2	3	4	5	6	7	8	9	Feet	Spill	River
vertical gate opening (ft.)									(ft)	Kcfs	Kcfs
4									4	6	15.0
4	4								8	12	30.0
6	6								12	18	45.0
		4	4	4	4				16	24	60.0
	4	4	4	4	4				20	30	75.0
4	4	4	4	4	4				24	36	90.0
4.5	4.5	4.5	4.5	4.5	4.5				27	41	101.3
5	5	5	5	5	5				30	45	112.5
5.5	5.5	5.5	5.5	5.5	5.5				33	50	123.8
6	6	6	6	6	6				36	54	135.0
6.5	6.5	6.5	6.5	6.5	6.5				39	59	146.3
7	7	7	7	7	7				42	63	157.5
7.5	7.5	7.5	7.5	7.5	7.5				45	68	168.8
8	8	8	8	8	8				48	72	180.0
8.5	8.5	8.5	8.5	8.5	8.5				51	77	191.3
9	9	9	9	9	9				54	81	202.5
9.5	9.5	9.5	9.5	9.5	9.5				57	86	213.8
10	10	10	10	10	10				60	90	225.0
11	11	11	11	11	11				63	95	236.3
11	11	11	11	11	11				66	99	247.5
12	12	12	12	12	12				69	104	258.8
12	12	12	12	12	12				72	108	270.0
13	13	13	13	13	13				75	113	281.3
13	13	13	13	13	13				78	117	292.5
14	14	14	14	14	14				81	122	303.8
14	14	14	14	14	14				84	126	315.0
14	14	14	14	14	14	4			88	132	330.0
14	14	14	14	14	14	6			90	135	337.5
14	14	14	14	14	14	8			92	138	345.0
14	14	14	14	14	14	10			94	141	352.5
14	14	14	14	14	14	12			96	144	360.0
14	14	14	14	14	14	10	4		98	147	367.5
14	14	14	14	14	14	10	6		100	150	375.0
14	14	14	14	14	14	10	8		102	153	382.5
14	14	14	14	14	14	10	10		104	156	390.0
14	14	14	14	14	14	12	10		106	159	397.5
14	14	14	14	14	14	10	10	4	108	162	405.0
14	14	14	14	14	14	12	10	4	110	165	412.5
14	14	14	14	14	14	12	10	6	112	168	420.0
14	14	14	14	14	14	12	10	8	114	171	427.5
14	14	14	14	14	14	12	10	10	116	174	435.0
14	14	14	14	14	14	12	12	10	118	177	442.5
14	14	14	14	14	14	12	12	12	120	180	450.0
14	14	14	14	14	14	13	13	13	123	185	
14	14	14	14	14	14	14	14	14	126	189	
14	14	15	15	15	15	14	14	14	130	195	
14	14	15	15	15	15	15	15	15	133	200	
14	14	16	16	16	16	15	15	15	137	206	
14	14	16	16	16	16	16	16	16	140	210	
14	14	17	17	17	17	16	16	16	144	216	
14	14	17	17	17	17	17	17	17	147	221	
14	14	18	18	18	18	17	17	17	151	227	
14	14	18	18	18	18	18	18	18	154	231	
14	14	19	19	19	19	18	18	18	158	237	
14	14	19	19	19	19	19	19	19	161	242	
14	14	20	20	20	20	19	19	19	165	248	
14	14	20	20	20	20	20	20	20	168	252	
14	17	21	21	21	21	21	21	21	178	267	
14	17	22	22	22	22	22	22	22	185	278	
14	17	23	23	23	23	23	23	23	192	288	
14	17	24	24	24	24	24	24	24	199	299	
14	17	25	25	25	25	25	25	25	206	309	
14	17	26	26	26	26	26	26	26	213	320	
14	20	26	26	26	26	26	26	26	216	324	
14	20	27	27	27	27	27	27	27	223	335	
14	23	27	27	27	27	27	27	27	226	339	
14	23	28	28	28	28	28	28	28	233	350	
14	28	28	28	28	28	28	28	28	238	357	
18	28	28	28	28	28	28	28	28	242	363	
22	28	28	28	28	28	28	28	28	246	369	
28	28	28	28	28	28	28	28	28	252	378	

Table 2 - Depth Average Velocities on The Dalles Spillway Shelf while Maximizing Spill through Bays 1-9																	
			Powerhouse = 0 Kcfs			Powerhouse = 100 Kcfs			Powerhouse = 150 Kcfs			Powerhouse = 200 Kcfs			Powerhouse = 250 Kcfs		
Gate Opening	Q per bay	Total Spill	Total River	Tailwater	Depth Average Velocity	Total River	Tailwater	Depth Average Velocity	Total River	Tailwater	Depth Average Velocity	Total River	Tailwater	Depth Average Velocity	Total River	Tailwater	Depth Average Velocity
ft	Kcfs	Kcfs	Kcfs	ft	fps	Kcfs	ft	fps	Kcfs	ft	fps	Kcfs	ft	fps	Kcfs	ft	fps
14.0	21.0	180.0	180.0	77.0	39.1	280.0	79.4	30.6	330.0	80.8	27.4	380.0	82.1	24.8	430.0	83.5	22.5
14.0	21.0	184.5	184.5	77.1	38.6	284.5	79.6	30.3	334.5	80.9	27.2	384.5	82.2	24.6	434.5	83.7	22.3
14.0	21.0	189.0	189.0	77.2	38.2	289.0	79.7	30.0	339.0	81.0	26.9	389.0	82.4	24.4	439.0	83.8	22.2
15.0	22.5	195.0	195.0	77.3	40.3	295.0	79.8	31.7	345.0	81.2	28.5	395.0	82.5	25.8	445.0	84.0	23.5
15.0	22.5	199.5	199.5	77.4	39.8	299.5	79.9	31.4	349.5	81.3	28.2	399.5	82.7	25.6	449.5	84.1	23.3
16.0	24.0	205.5	205.5	77.6	41.8	305.5	80.1	33.1	355.5	81.4	29.8	405.5	82.8	27.0	455.5	84.3	24.6
16.0	24.0	210.0	210.0	77.7	41.3	310.0	80.2	32.7	360.0	81.6	29.5	410.0	83.0	26.7	460.0	84.4	24.4
17.0	25.5	216.0	216.0	77.8	43.3	316.0	80.4	34.3	366.0	81.7	31.0	416.0	83.1	28.1	466.0	84.6	25.6
17.0	25.5	220.5	220.5	77.9	42.8	320.5	80.5	34.0	370.5	81.9	30.7	420.5	83.3	27.9	470.5	84.7	25.4
18.0	27.0	226.5	226.5	78.1	44.6	326.5	80.7	35.6	376.5	82.0	32.1	426.5	83.4	29.2	476.5	84.9	26.6
18.0	27.0	231.0	231.0	78.2	44.1	331.0	80.8	35.2	381.0	82.1	31.8	431.0	83.6	28.9	481.0	85.0	26.4
19.0	28.5	237.0	237.0	78.3	45.9	337.0	80.9	36.7	387.0	82.3	33.2	437.0	83.7	30.2	487.0	85.2	27.6
19.0	28.5	241.5	241.5	78.5	45.4	341.5	81.1	36.4	391.5	82.4	32.9	441.5	83.9	29.9	491.5	85.3	27.4
20.0	30.0	247.5	247.5	78.6	47.1	347.5	81.2	37.8	397.5	82.6	34.2	447.5	84.0	31.2	497.5	85.5	28.5
20.0	30.0	252.0	252.0	78.7	46.6	352.0	81.3	37.5	402.0	82.7	33.9	452.0	84.2	30.9	502.0	85.7	28.3
21.0	31.5	267.0	267.0	79.1	47.3	367.0	81.8	38.2	417.0	83.2	34.6	467.0	84.6	31.6	517.0	86.1	29.0
22.0	33.0	277.5	277.5	79.4	48.4	377.5	82.0	39.2	427.5	83.5	35.6	477.5	84.9	32.5	527.5	86.4	29.8
23.0	34.5	288.0	288.0	79.6	49.4	388.0	82.3	40.1	438.0	83.8	36.5	488.0	85.2	33.4	538.0	86.8	30.7
24.0	36.0	298.5	298.5	79.9	50.3	398.5	82.6	41.0	448.5	84.1	37.3	498.5	85.6	34.2	548.5	87.1	31.4
25.0	37.5	309.0	309.0	80.2	51.3	409.0	82.9	41.9	459.0	84.4	38.2	509.0	85.9	35.0	559.0	87.4	32.2
26.0	39.0	319.5	319.5	80.5	52.1	419.5	83.2	42.7	469.5	84.7	39.0	519.5	86.2	35.7	569.5	87.7	32.9
26.0	39.0	324.0	324.0	80.6	51.6	424.0	83.4	42.3	474.0	84.8	38.7	524.0	86.3	35.5	574.0	87.9	32.7
27.0	40.5	334.5	334.5	80.9	52.4	434.5	83.7	43.1	484.5	85.1	39.4	534.5	86.6	36.2	584.5	88.2	33.4
27.0	40.5	339.0	339.0	81.0	52.0	439.0	83.8	42.7	489.0	85.3	39.1	539.0	86.8	35.9	589.0	88.4	33.1
28.0	42.0	349.5	349.5	81.3	52.7	449.5	84.1	43.5	499.5	85.6	39.8	549.5	87.1	36.6	599.5	88.7	33.8
28.0	42.0	357.0	357.0	81.5	51.9	457.0	84.3	42.9	507.0	85.8	39.3	557.0	87.3	36.2	607.0	88.9	33.4
28.0	42.0	363.0	363.0	81.6	51.3	463.0	84.5	42.4	513.0	86.0	38.9	563.0	87.5	35.8	613.0	89.1	33.1
28.0	42.0	369.0	369.0	81.8	50.7	469.0	84.7	42.0	519.0	86.2	38.5	569.0	87.7	35.5	619.0	89.3	32.8
28.0	42.0	378.0	378.0	82.1	49.8	478.0	84.9	41.3	528.0	86.4	37.9	578.0	88.0	35.0	628.0	89.6	32.4
Tailwater Elevation computed assuming a Bonneville Forebay Elevation of 74 feet.																	
Tailwater Elevation is estimated for the spillway shelf.																	

2008 Water Supply Forecast Summary* - 6/12/2008

Basin	Station	Period	Jan. Final		Feb. Final		Mar. Final		Apr. Final		May Final		June Final	
			Probable	%	Probable	%	Probable	%	Probable	%	Probable	%	Probable	%
Columbia River	*Grand Coulee, WA*	Jan-Jul	61900	98	61100	97	62300	99	61200	97	59800	95	59800	95
		Apr-Sep	63000	98	62700	98	65000	102	65200	102	63500	99	63500	99
	The Dalles, OR	Jan-Jul	102000	95	103000	96	103000	96	101000	94	97300	91	98200	92
		Apr-Aug	88200	95	91800	99	94300	101	94700	102	90900	98	91900	99
		Apr-Sep	93500	95	97300	99	99900	101	100000	101	96300	98	97400	99
Kootenai River	*Libby Inflow, MT*	Jan-Jul	5960	95	5960	95	6190	98	6080	96	5820	92	5840	93
		Apr-Aug	5900	94	5960	95	6240	100	6210	99	5920	95	5940	95
		Apr-Sep	6270	94	6330	95	6620	100	6590	99	6280	95	6300	95
SF Flathead River	*Hungry Horse Inflow, MT*	Jan-Jul	1960	88	2050	92	2100	94	2140	96	2030	91	2200	99
		Apr-Sep	1870	88	1970	93	2040	96	2120	100	2010	95	2190	103
Snake River	*Lower Granite Inflow, WA*	Jan-Jul	27200	91	29500	98	29200	97	28000	93	26500	88	26600	89
		Feb-Sep	27500	91	30800	101	30500	100	29200	96	27600	91	27700	91
		Apr-Jul	19500	90	22200	103	23000	107	23300	108	21800	101	21900	102
		Apr-Sep	21800	90	24700	102	25600	106	25700	106	24100	100	24200	100
NF Clearwater River	*Dworshak Inflow, ID*	Jan-Jul	3500	99	3600	101	3580	101	3550	100	3320	94	3270	92
		Apr-Jul	2610	99	2780	105	2920	110	3160	120	2930	111	2880	109
		Apr-Sep	2770	99	2970	106	34140	112	3350	120	3110	111	3050	109
Willamette River	*Salem, OR*	Apr-Sep	4720	98	5450	113	5440	113	5650	118	5720	119	5510	115

*Data courtesy of Northwest River Forecast Center available at: http://137.161.65.209/water_supply/ws_fcst.cgi

FPP Change Forms

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Change Request Number:
Date: April 16, 2008
Proposed by: Bonneville Project
Location of Change- BON 5.4.6-5.4.7 and BON 6.5.1-6.5.2 (sections re-numbered as required)
Proposed Change:

5.4.6. *From 1 December through 30 April, non-priority turbine units will not be voluntarily scheduled for extended outages. Priority units are 1, 10, 11, and 18.*

5.4.7. *From 1 December through 30 April, turbines which have been idle/out of service for more than 12 hours will be started by slow rolling the unit after manually tipping turbine blades from flat to steep back to flat.*

After including the two sections above as 6.5.1 and 6.5.2-
The current 6.5.2 will be re-numbered to 6.5.4. Add "*bottom tail logs should be placed first."*
The current 6.5.3 will be re-numbered to 6.5.5. Add "*It is recommended adjacent units be operated to flush fish prior to placing tail logs in the unit to be OOS. It is also recommended that units located adjacent to OOS units not be voluntarily taken out of service until the adjacent units return to service."*

Reason for Change: To better protect sturgeon in the draft tube and turbine environment.

Comments from others: FPOM doesn't want priority units OOS during fish passage season.

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Change Request Number:
Date: 6/4/2008
Proposed by: Project Fisheries
Location of Change: BON-18 2.4.2.2.n.1
Proposed Change: 2.4.2.2.n.1 says "coordinate gatewell cleaning with smolt monitoring personnel operating the downstream juvenile sampling facilities". It should be moved to 2.4.2.2.m.3, which is the section on what to do when cleaning gatewells.

Reason for Change:
2.4.2.2.n.1 is in the wrong location.

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Change Request Number:
Date: 5/27/2008
Proposed by: The Dalles John Day Project
Location of Change- TDA 2.5.1.2.4 and JDA 2.5.1.2.a.4
Proposed Change: Omit from TD- 'Water velocities will be measured at one location directly and monitored during fishway inspections to verify channels are operating within velocity crtieria'.
Add to TD and JD – 'Water velocities will be monitored weekly during as part of the fishway inspection program. Project biologist will determine method. Results will be provided in weekly status report. (JD did not have the same wording as TD)

Reason for Change: Discussion and resolution determined through FPOM velocity task group

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Change Request Number:
Date: 6/4/08
Proposed by: NWP
Location of Change TDA spill patterns
Proposed Change: The spill pattern was modified to reflect the unavailability of bays 10-23.

Reason for Change: In 2006, the District Dam Safety Team analyzed the condition of TDA spillbays, and produced a memo that outlined operational restrictions to the spillway and reflected a change to the FPP pattern. The pattern in the 2006, 2007, and 2008 FPP were incorrect for spill discharge above 189 Kcfs. Up to this point, spill discharge has not exceeded 189 Kcfs, and the correct pattern has been used. Bays 10-23 are unavailable for use, except in an emergency. The spill pattern was modified to reflect spill through available bays.

Comments from others:
Record of Final Action:
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Change Request Number:
Date: 6/5/08
Requested by: BON Control Room operators
Location of Change- Section I- Acronyms
Proposed Change: include definitions and define voluntary and involuntary spill.
Voluntary spill- spill provided for juvenile salmonid passage and for adult salmonid attraction to fish ladders associated with spillways.

Involuntary spill- spill resulting from flows exceeding the capacity of the powerhouse and miscellaneous flow. This spill would normally occur during high water events.

Reason for Change: To better clarify what is meant by voluntary and involuntary spill.
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Change Request Number:
Date: May 8, 2008
Proposed by: NWW Operations
Proposed Change: Ice Harbor Dam. 1% Operating tables. HDC has developed for IHR units; one table applies to U1 & U-3, another table just for U-2 (the one with the welded blades) and another table for U-4 to U-6.

Reason for Change: Updating the 1% operating tables for 2008

Comments from others:

Record of Final Action: Presented to FPOM May 8, 2008. Action: send in new tables for meeting notes and for inclusion into the 2008 FPP.

June 2008

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2 LGO ERDC trip	3 FPAC LGO ERDC trip	4 TMT LGO ERDC trip	5 LGO ERDC trip	6 LGO ERDC trip	7 LGO ERDC trip
8 LGO ERDC trip	9 LGO ERDC trip	10 FPAC LGO ERDC trip AFEP 1-pg review	11 TMT LGO ERDC trip	12 FPOM Meeting-JDA NWD tour of JDA	13 NWD tour of BON	14
15	16	17 FPAC	18 TMT	19	20	21
22	23 LGO ERDC trip-agencies	24 FPAC LGO ERDC trip-agencies	25 TMT LGO ERDC trip-agencies AFEP comments due	26 NWP FFDRWG LGO ERDC trip-agencies Lamprey allocation mtg- BON	27 LGO ERDC trip-agencies AFEP 1-pg prioritization	28
29	30					

July 2008

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1 FPAC	2 TMT	3	4 Independence Day	5
6	7	8 FPAC	9	10 FPOM Meeting-NOAA	11	12
13	14	15 FPAC	16 TMT	17	18	19
20	21	22 FPAC	23 TMT	24	25	26
27	28	29 FPAC	30	31		

FINAL draft 2008 shad fishery guidelines. March 2008

PROPOSAL FOR THE 2008 YAKAMA NATION SHAD FISHERY

The Yakama Nation proposes to continue in 2008 the successful shad fishery conducted at The Dalles Dam east fish ladder exit in 1996. In 20 days of fishing that year, tribal fishers harvested over 500,000 lbs of shad having an *ex vessel* value of about $65,000. This was an unprecedented volume of commercial shad harvest in the Columbia River, made all the more remarkable by the fact that not one salmonid was killed in the process.

In 1996, the Shad Fishery Task Team (a sub-group of FPOM) jointly developed a set of recommended terms and conditions under which the shad fishery should operate that were intended to minimize potential impacts of the fishery to salmonids. Since this is a task group of FPOM, final recommendations will be at the discretion of the full FPOM team. In addition, safety requirements for boat operation within the BRZ were included at the request of the USACE. The proposed "rules of conduct" for the tribal shad fishery in 2008 can be broken into categories relating to the conduct of the fishery itself (e.g., time, area, gear), safety, incidental impact guidelines, and monitoring. These are considered in turn below.

Fishery Design

The 2008 fishery will be similar to the 1996 activity in terms of gear design, fishing times, and dates, but minor changes may be incorporated on the basis of information gathered since 1996.

Gear

1. The fishery will first utilize an L shape design containment net to increase distance from the exit while dipping. If this fails to accumulate shad, they will then utilize a modified version of the trapnet used in 1996. The net will be anchored adjacent to one of the two exit portals at the east fishladder. The trapnet measures approximately 20 feet long by 10 feet in width.. Floor depth tapers from 6 feet at the net entrance near the fishladder exit to about 12 feet at the upstream end to ensure that not more than half of the exit portal is occluded. The trapnet is emptied of trapped fish by dipnets fished from small boats moored to the sides of the net.
2. The net will be set and removed each day beginning no earlier than 10 a.m., and fishing will end no later than 9 p.m. The fishery may operate between those hours on Monday through Friday of each week.
3. Salmonids incidentally captured in the trapnet will be allowed to swim out of the net over the floatline. If adult salmon must be netted, a water to water sanctuary net will be used.
4. Fishers are required to keep all foreign odors from entering the fishladder by wearing rubber gloves to block human scent, and by ensuring that outboard motors and other sources of petroleum-based odors are kept out of the water inside a radius of 50 feet from the fishladder exit (except during emergencies).
5. The fishery timeframe is expected to run from late May to early July. Shad fishing may begin when shad counts at The Dalles east fishladder exceed 3,000 per day.

Safety

FINAL draft 2008 shad fishery guidelines. March 2008

Tribal fishers are required to comply with boating safety requirements for operations within the BRZ. These include the following:

1. Approved Type I or Type III personal flotation devices for each person on board, to be worn at all times within the BRZ.
2. At least one fire extinguisher aboard each boat at all times.
3. At least one anchor and 200 feet of line aboard each boat at all times.
4. Boats within the BRZ must carry a red and white flag to identify them as being part of the shad fishery.
5. Radios, cellular phones, or pagers (as required by the USACE) must be taken into the BRZ in case of the need for emergency contact by the dam operations controller.

Salmonid Impact Limitations

The SFTT also has developed limits for impacts to salmonids by which the shad fishery should be managed. The intent of these limits is to minimize the incidental take of listed salmon and steelhead while allowing a reasonable opportunity for a shad fishery at this critical fish passage location. The parties agree that the shad fishery close for the day if:

1. The incidental catch of salmon in the shad trapnet exceeds 1 per 1,000 pounds of shad in the net.
2. The fallback rate for any salmonid species at the counting station increases by more than 10% of the baseline (pre-fishing) fallback rate for that species in twonon-consecutive hourly counting periods during the daily fishing period.

The parties also agree that the shad fishery close for the week if:

1. incidental catch or fallback criteria is exceeded on 2 consecutive days.

The shad fishery will close for the year if:

1. incidental catch or fallback criteria is exceeded any time after the fishery has closed for a week.
2. daily shad counts drop below 3,000 a day.

Fishery Monitoring

Monitoring plans for 2008 include the following:

1. Fallback rates will be recorded daily by the fish counter at the east fishladder counting station. This monitoring will begin on May 1, to obtain baseline conditions of fallback for chinook and steelhead prior to fishing and will continue during and after the fishery.
2. A tribal monitor will be present on the forebay deck during periods of active fishing to record the incidence of salmonids caught in the trapnet during the fishery. The tribal fishers participation will be by YN permit only, which will require clear understanding of the regulations, and may be revoked for non-compliance. Incidental catch will be recorded by species, date, and time of occurrence.
3. The tribal monitor will record criteria infractions and fishing will stop when limits are exceeded according to the agreed terms above.