



# United States Department of the Interior

BUREAU OF RECLAMATION

Great Plains Region

Montana Area Office

P.O. Box 30137

Billings, Montana 59107-0137



IN REPLY REFER TO: MT-450

April 6, 2012

## **FAXOGRAM: Water Order Change**

To: Chief, Power Supply and Billing Division, WAPA, Watertown, South Dakota  
Attention: F-6001  
Chief, Power Dispatching Branch, WAPA, Loveland, Colorado  
Attention: J-4120  
Facilities Manager, Hardin, Montana  
Attention: MT-300: Tom Tauscher  
Project Manager, Mills, Wyoming  
Attention: WY-4000, WY-4100, WY-6400  
Assistant Superintendent, National Park Service, Lovell, Wyoming  
Attention: Valerie Newman

From: Reservoir and River Operations, Billings, Montana

Subject: **Yellowtail Water Release Order - BHR No. 12-25**

### **CURRENT RESERVOIR CONDITIONS**

Elevation: 3619.30 Storage: 824,116 acre-feet; River Release: 2,880 cfs; Inflow: 2,725 cfs;

### **GENERAL COMMENTS:**

As part of an ongoing study of the hydraulic analysis of the Bighorn River side channels, a flushing flow for the Bighorn River is scheduled for April 9-12. To conduct the planned flushing flow, the following operation changes are required at Yellowtail Dam and Powerplant.

### **YELLOWTAIL TURBINE RELEASE:**

#### **On Monday, April 9, 2012:**

*Maintain average daily turbine release at 3,735 cfs ( $\approx$  2,525 MW-Hrs/day using 35.5 cfs/mw).  
(At  $\approx$  1300 hour, increase turbine release to  $\approx$  4,320 cf & maintain through remainder of day).*

#### **On Tuesday, April 10, 2012:**

*Maintain average daily turbine release at  $\approx$  4,320 cfs ( $\approx$  2,920 MW-Hrs/day using 35.5 cfs/mw).*

#### **On Wednesday, April 11, 2012:**

*Maintain average daily turbine release at 4,160 cfs ( $\approx$  2,810 MW-Hrs/day using 35.5 cfs/mw).  
(At  $\approx$  1400 hour, decrease average daily turbine release to a release rate less than 4,320 cfs as scheduled by Western Area Power Administration (WAPA)).*

#### **On Thursday, April 12, 2012:**

*Decrease & maintain average daily turbine release at 3,020 cfs ( $\approx$  2,040 MW-Hrs/day using 35.5 cfs/mw).*

### **YELLOWTAIL BYPASS RELEASE:**

#### **At 1300 hour on Monday, April 9, 2012:**

*Initiate and maintain release through evacuation outlet gates at 610 cfs.*

#### **At 1800 hour on Monday, April 9, 2012:**

*Increase release through evacuation outlet gates to 1,610 cfs.*

#### **At 0800 hour on Tuesday, April 10, 2012:**

*Increase release through evacuation outlet gates to 2,610 cfs.*

#### **At 2000 hour on Tuesday, April 10, 2012:**

*Decrease release through evacuation outlet gates to 1,610 cfs.*

#### **At 0800 hour on Wednesday, April 11, 2012:**

*Decrease release through evacuation outlet gates to 780 cfs.*

#### **At 1400 hour on Wednesday, April 11, 2012:**

*Decrease release through the evacuation outlet gates to 0 cfs.*

**AFTERBAY RELEASE AND OPERATION:**

**At 0800 hour on Monday, April 9, 2012:**

*Maintain diversions to the Bighorn Canal at 0 cfs (gage height = 68.50 with 0.00 shift).  
Increase river release to 4,000 cfs (gage height = 61.15 with -0.09 shift).  
Increase total release from the Afterbay to 4,000 cfs.*

**At 1300 hour on Monday, April 9, 2012:**

*Maintain diversions to the Bighorn Canal at 0 cfs (gage height = 68.50 with 0.00 shift).  
Increase river release to 5,000 cfs (gage height = 61.72 with -0.09 shift).  
Increase total release from the Afterbay to 5,000 cfs.*

**At 1800 hour on Monday, April 9, 2012:**

*Maintain diversions to the Bighorn Canal at 0 cfs (gage height = 68.50 with 0.00 shift).  
Increase river release to 6,000 cfs (gage height = 62.23 with -0.09 shift).  
Increase total release from the Afterbay to 6,000 cfs.*

**At 0800 hour on Tuesday, April 10, 2012:**

*Maintain diversions to the Bighorn Canal at 0 cfs (gage height = 68.50 with 0.00 shift).  
Increase river release to 7,000 cfs (gage height = 62.69 with -0.09 shift).  
Increase total release from the Afterbay to 7,000 cfs.*

**At 2000 hour on Tuesday, April 10, 2012:**

*Maintain diversions to the Bighorn Canal at 0 cfs (gage height = 68.50 with 0.00 shift).  
Decrease river release to 6,000 cfs (gage height = 62.23 with -0.09 shift).  
Decrease total release from the Afterbay to 6,000 cfs.*

**At 0800 hour on Wednesday, April 11, 2012:**

*Maintain diversions to the Bighorn Canal at 0 cfs (gage height = 68.50 with 0.00 shift).  
Decrease river release to 5,170 cfs (gage height = 61.81 with -0.09 shift).  
Decrease total release from the Afterbay to 5,170 cfs.*

**At 1400 hour on Wednesday, April 11, 2012:**

*Maintain diversions to the Bighorn Canal at 0 cfs (gage height = 68.50 with 0.00 shift).  
Decrease river release to 4,330 cfs (gage height = 61.35 with -0.09 shift).  
Decrease total release from the Afterbay to 4,330 cfs.*

**At 2000 hour on Wednesday, April 11, 2012:**

*Maintain diversions to the Bighorn Canal at 0 cfs (gage height = 68.50 with 0.00 shift).  
Decrease river release to 3,500 cfs (gage height = 60.82 with -0.09 shift).  
Decrease total release from the Afterbay to 3,500 cfs.*

**At 0800 hour on Thursday, April 12, 2012:**

*Maintain diversions to the Bighorn Canal at 0 cfs (gage height = 68.50 with 0.00 shift).  
Decrease river release to 2,880 cfs (gage height = 60.39 with -0.09 shift).  
Decrease total release from the Afterbay to 2,880 cfs.*

**Special Note:** To avoid or minimize the potential for high levels of nitrogen gas super-saturation in flows released out of the Afterbay to the Bighorn River, it is most desirable to provide a mixing flow ratio of 75/25 or higher (75% through the spillway gates and 25% through the sluiceway gates) whenever possible. Because discharge values are determined from theoretical gate-discharge tables and curves, actual river flows and shift may vary from those listed and scheduled above during the special flushing operation.

/S/ Tim H. Felchle