BIGHORN LAKE (YELLOWTAIL DAM) ALLOCATIONS

Maximum Water Surface or Top of Surcharge Elev. 3660.00 (1,331,725 Acre - Feet)

Surcharge - 52,829 Acre - Feet
Top of Exclusive Flood Elev. 3657.00 (1,278,896 Acre - Feet)

Exclusive Flood Control - 258,323 Acre - Feet
Top of Joint Use Elev. 3640.00 (1,020,573 Acre - Feet)

Joint Use - 232,365 Acre - Feet
Top of Active Conservation Elev. 3614.00 (788,208 Acre - Feet)

Active Conservation - 318,298 Acre - Feet

Top of Inactive Conservation Elev. 3547.00 (469,910 Acre - Feet)

Inactive Conservation - 452,186 Acre - Feet
Powerplant Penstock Elev. 3450.00

Top of Dead Elev. 3296.50 (17,724 Acre - Feet)

Dead - 17,724 Acre - Feet
Streambed Elev. 3166.0

Revision Date: 10/15/2012
Reservoir Level Targets

<table>
<thead>
<tr>
<th>Date</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>March 31</td>
<td>3615-3619</td>
</tr>
<tr>
<td>April-July Rule Curve Low Point</td>
<td>3592-3617</td>
</tr>
<tr>
<td>July 31</td>
<td>3640</td>
</tr>
<tr>
<td>October 31</td>
<td>3635-3640</td>
</tr>
</tbody>
</table>
## Desired River Release Targets*

<table>
<thead>
<tr>
<th>Target</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preferred Flow Range</td>
<td>2,500 to 8,000</td>
</tr>
<tr>
<td>Optimum Fishery Flow</td>
<td>2,500</td>
</tr>
<tr>
<td>Standard Fishery Flow</td>
<td>2,000</td>
</tr>
<tr>
<td>Minimum Fishery Flow</td>
<td>1,500</td>
</tr>
<tr>
<td>Minimum DPR Flow</td>
<td>1,000</td>
</tr>
</tbody>
</table>

* As identified in 1986 letter from MTFWP and listed in the Steamflow and Lake Level Management Plan
November-March Operations

- Water Balance Equation Used to Calculate Nov-Mar Release Rate Based On:
  - Nov-Mar Release from Buffalo Bill and Boysen Reservoirs
  - Forecasted Nov-Mar River Gains based on Apr-Oct gains
  - Draft Reservoir to Elevation 3615-3619 by March 31
  - Preference to River Flow before setting releases below 2,000 cfs
  - Preference to Lake Level before setting releases above 2,500 cfs
### End of March Reservoir Target

<table>
<thead>
<tr>
<th>River Release</th>
<th>March 31 Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greater than 2,500 cfs</td>
<td>3619</td>
</tr>
<tr>
<td>2000-2500 cfs</td>
<td>3617</td>
</tr>
<tr>
<td>Less than 2,000 cfs</td>
<td>3615</td>
</tr>
</tbody>
</table>

In drought years when it becomes necessary to set release to a minimum of 1,500 cfs the reservoir will draft below these targets.
February-March

- Spring runoff forecasts are based primarily on mountain snowpack.

- Adjustments to the river release may be made if unusually high or low mountain snowpack conditions warrant and the reservoir elevation indicate a change is needed.

- Adjustments must also take into account downstream river ice conditions.
April-July Rule Curves

• April-July is the snowmelt runoff season and normally the wettest period of the year.

• Starting April 1 Rule Curves are established based on forecasted runoff. Forecasts and rule curve can be adjusted on the first and middle of each month.

• Operations are adjusted as needed to generally follow Rule Curve. Some deviation from rule curve is allowed to prevent frequent changes in release rate.
August-October

- In good runoff years a release of 2,500 cfs or more is set during this period if this can be done while attempting to meet the desired end of October target elevation of 3635 or higher.

- In years with lower runoff when the above goals cannot be met the river release is set to provide a stable flow through the end of March using the desired end of March target of near 3617.
Looking Beyond Each Period

• Operating plans address most, maximum and minimum expected runoff conditions for the next 12 months.

• Important to always look out beyond each specific period to assess how current operations will effect overall operating plan

• Operating plans are developed based on the operating criteria.
Questions or Comments