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Contact: Joan Moody - DOI (202) 208-6416

Kip White - Reclamation (202) 513-0684

Additional Water to be Released from Lake Powell to Lake Mead – Avoiding Shortages in Lower Basin in 2012

WASHINGTON, DC—The Department of the Interior announced today that over the next six months, the Bureau of Reclamation expects to release a projected additional 3.33 million acre-feet (maf) of water from Lake Powell in Utah and Arizona to Lake Mead in Nevada. This new projection, boosted by a significant snowpack in the Upper Basin of the Colorado River, supplements the previously projected release of 8.23 maf—for a total of 11.56 maf—to fulfill the guidelines of the historic agreement reached between the Department and the seven Colorado River Basin States in 2007.

“Drought conditions over the past 11 years had raised the possibility of water shortages in the Lower Basin over the next year, but thanks to good precipitation, wise planning, and strong collaboration among the states, we are able to release additional water and avert those shortages,” said Secretary of the Interior Ken Salazar.

After an intensive public review process, in 2007 the Department of the Interior approved the Colorado River Interim Guidelines for Lower Basin Shortages and the Coordinated Operations for Lake Powell and Lake Mead to address operation of the lakes, particularly under low-reservoir conditions. These Guidelines provide detailed rules that determine the amount of water released from Hoover and Glen Canyon Dams each year and are based on an operational framework agreed to by the Basin states. The Guidelines represent an important example of the ongoing collaborative partnership between the federal government and the seven states on Colorado River management issues.

“The Colorado River is an important resource for seven states in the Southwest as well as Mexico,” said Assistant Secretary of the Interior for Water and Science Anne Castle. “Continued engagement between the seven Colorado River Basin states and the Department of the Interior has ensured the management process continues to function as planned and will continue to be essential. Today’s announcement demonstrates the importance of having operational rules in place to guide management of the Colorado

River under varying conditions.”

In noting that total releases in Water Year 2011 (which ends September 30, 2011) are now projected to total 11.56 maf, Reclamation Commissioner Michael L. Connor pointed out that the current April-through- July inflow forecast for Lake Powell from the spring runoff is 9.5 maf, which is 120 percent of average. This is also an increase of 300,000 acre-feet over the March 2011 inflow forecast.

“The Colorado River Basin has experienced historic drought, and while this winter’s snowpack will benefit river flows, we cannot say that the drought is over,” cautioned Commissioner Connor. “Given the potential for extended dry years, and the effects of climate change on snowpack and runoff in the Colorado Basin, we must continue to work with the states, tribes and other stakeholders in the Basin to meet the water needs in the future.”

Under the terms of the operational guidelines, the snowpack conditions and expected inflows triggered what are called “equalization operations” under which the current annual release volume of 11.56 from Lake Powell has been projected. The projected annual release will be updated each month through the end of September 2011 to reflect changing hydrology. As a result, Lake Powell is expected to be at similar levels as last year, peaking in July at about elevation 3,643 feet above sea level. The additional water will increase Lake Mead elevation levels by more than 20 feet since October 2010, ending September 2011 at 1,105 feet above sea level.

Because of the continuation of spring storms and cooler temperatures in the Upper Basin, runoff will continue into the late spring. At the present time, Lake Powell is 52 percent full with 12.7 maf of water in storage. Forecasters warn that at this point in time, a rapid increase in temperatures may lead to very high flows once the runoff begins with the possibility of some localized flooding in the Upper Basin states.

NOTE: A fact sheet with additional specific information related to the coordinated operations of Lake Powell and Lake Mead is attached.

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Lake Powell Operations, Equalization and the Interim Guidelines

I. Background

- A. In 2007 the Colorado River Basin was facing the eighth drought year of the worst eight years in over a century of record keeping.
- B. In November 2007, after over two years of development through a public process, the Secretary of the Interior adopted the Colorado River Interim Guidelines for Lower Basin Shortages and the Coordinated Operations for Lake Powell and Lake Mead (Guidelines) in order to address water availability in the lower basin and operations of Lake Powell and Lake Mead during drought and low reservoir conditions. Reservoir operating decisions under the Guidelines are to remain in effect through 2026.
- C. Among other things, the Guidelines provide direction to Reclamation on operations of Glen Canyon Dam (which impounds Lake Powell) to better ‘equalize’ the contents of Lake Powell and Lake Mead.
- D. Reclamation has been operating Glen Canyon Dam in accordance with the Guidelines since their adoption.

II. Interim Guidelines

- A. The first five sections of the Guidelines address Lower Colorado River Basin issues including allocation of unused apportionment, Lake Mead operations, Lower Basin surplus and shortage operations and the implementation of California’s Colorado River Water Use Plan.
- B. Section 6. of the Guidelines addresses coordinated operation of Lakes Powell and Mead during the interim period.
- C. The objectives of the coordinated operations are; to avoid curtailment of uses in Upper Basin; minimize shortages in Lower basin and; not adversely affect yield for development in the Upper Basin through attempting to ‘Equalize’ or balance the contents of Lakes Powell & Mead as nearly as practicable by the end of each Water Year (September)
- D. Reclamation runs a 2-year computer model (24-Month Study) to project operations of the Colorado River reservoirs.

E. There is a table of equalization elevations for Lake Powell in the Guidelines that is used in the determination of an operating ‘tier‘ for Lake Powell.

F. The projected January 1 elevation for Lake Powell in the August 24-Month Study run determines the initial operating tier and annual release from Lake Powell for the upcoming Water Year (Oct. 1 – Sept. 30).

G. Each month, through the water year, releases are adjusted based on actual and forecasted inflows, the projected end of water year contents of Powell and Mead and the particular operating requirements for the tier under which Glen Canyon is operating.

III. **Operating Tiers:** There are several operating tiers defined in the Guidelines including Equalization, Upper Elevation Balancing, Mid-Elevation Release and Lower Elevation Balancing tiers each of which has specific operational directions.

A. **The Equalization Tier** applies when Lake Powell’s projected January 1 elevation is above the elevation in the equalization table. The tier provides for Lake Powell releases of more than 8.23 maf during the year until the content of the lakes equalizes or certain elevations are attained.

B. **The Upper Elevation Balancing Tier** applies when Lake Powell’s projected January 1 elevation is below the elevation in the equalization table but above 3575 ft above sea level. The tier defines several different operations that may occur based on the projected elevations of lakes Powell and Mead and annual releases from Powell vary between 7.0 maf and 9.0 maf

C. There is also a provision in the Upper Elevation Balancing Tier for a shift to operations under the *Equalization Tier* if the April 24-Month Study projects the elevation of Powell to reach a certain elevation. This can result in the potential of releases significantly greater than 9.0 maf.

D. **The Mid-Elevation Balancing Tier** provides direction when Lake Powell’s January 1 elevation is projected to be below 3575 feet above sea level. The annual releases in this tier are either 7.48 maf or 8.23 maf dependent upon the projected elevation of Lake Mead.

E. **The Lower-Elevation Balancing Tier** applies when Lake Powell’s January 1 elevation is projected to be below 3525 feet above sea level and provides for attempting to balance the contents of the two reservoirs by annual releases in the range of 7.0 maf to 9.5 maf.

Lake Powell Operational Tiers (subject to April adjustments or mid-year review modifications)		
Lake Powell Elevation (feet)	Lake Powell Operational Tier	Lake Powell Active Storage (maf)
3,700	Equalization Tier equalize, avoid spills or release 8.23 maf	24.32
3,636 – 3,666 (see table below)	----- Upper Elevation Balancing Tier release 8.23 maf; if Lake Mead < 1,075 feet, balance contents with a min/max release of 7.0 and 9.0 maf	15.54 – 19.29 (2008 – 2026)
3,575	----- Mid-Elevation Release Tier release 7.48 maf; if Lake Mead < 1,025 feet, release 8.23 maf	9.52
3,525	----- Lower Elevation Balancing Tier balance contents with a min/max release of 7.0 and 9.5 maf	5.93
3,370		0

The Lake Powell Operational Tiers Table above is from the Guidelines and depicts the relative elevations that determine the Operational Tier for Lake Powell and the general release ranges for the tiers. The table referred to for the Upper Elevation Balancing Tier is the Lake Powell Equalization Elevation Table which depicts the year to year Lake Powell elevation that triggers Equalization, which changes annually.

IV. Previous Equalization

A. In 2008, the first year of operating under the Guidelines, Reclamation faced a shift from the Upper Balancing Tier to the Equalization Tier in April. When Reclamation began operating under the Guidelines in January of 2008, the annual release was projected to be 8.23 maf.

B. The April 2008 24-Month Study projections put operations into the Equalization Tier and resulted in an additional 750,000 af being released over what had been previously projected for the 2008 water year.

V. 2011 Projected Operations

A. The April forecast for the April – July inflows to Lake Powell is 9.5 maf or 120% of average resulting in an annual projected inflow of approximately 13.1 maf . This represents the best year for inflows in the last decade and exceeds those of 2005 and 2008.

B. The August 2010 24-Month Study resulted in the Upper Elevation Balancing Tier being the operating tier for Glen Canyon Dam in water year 2011 but also projected a shift in operations where Equalization would govern the operation beginning in April 2011 in accordance with the Guidelines. This study projected an annual release of 11.58 maf.

C. In October, 2010, the 24-Month Study projected an annual release of 9.0 maf however, given the hydrologic variability of the Colorado River System, it was also projected that the water year release from Lake Powell in 2011 could be in the range of 8.23 maf (10,150 mcm) to 13.4 maf (16,500 mcm) or greater.

D. The April 2011 24-Month Study has resulted in operations shifting to the Equalization Tier under section 6.B.3 of the Guidelines for the remainder of the year.

E. The remainder of the year's operations under the Equalization Tier are targeted to release enough water from Lake Powell to bring Lake Mead up to elevation 1,105 ft above sea level by September 30 but not so much that would result in drawing down Lake Powell below 3623 (20 ft below the equalization level of 3643). This is projected to result in an annual release of 11.56 maf for water year 2011.

F. Since the operation is targeted at achieving a certain elevation at Lake Mead, inflows to and releases from Lake Mead may result in somewhat less or more than 11.56 maf being the final annual release from Lake Powell for water year 2011.

For further information on the Interim Guidelines and other documents that makeup the 'Law of the River' visit <http://www.usbr.gov/lc/riverops/>