

RECLAMATION

Managing Water in the West

Lessons Learned from the First HFE of the HFE Protocol

Bureau of Reclamation
Glen Canyon Dam
Adaptive Management Program
Technical Work Group Meeting
January 24, 2013



U.S. Department of the Interior
Bureau of Reclamation

HFE Decision Making Process

1. Planning and Budgeting Component

- Annual resource status assessment
 - Agency Report
 - GCDAMP Budget and Work Plan Process

2. Modeling Component

3. Decision and Implementation Component

- Review Modeling Component
- Review Status of Resources
- Consultation with agencies and tribes, AMWG input
- Staff Recommendation/DOI GCD Leadership Team Recommendation

HFE Protocol Parameters

Possible Timing

- March-April and October-November through 2020
- Spring HFEs will not be considered until 2015

Duration range

- 1 hr – 96 hrs (at full magnitude)
- 1 ½ days – 6 ½ days (including ramping)

Magnitude range

- 31,500 cfs – 45,000 cfs (depends on maintenance)

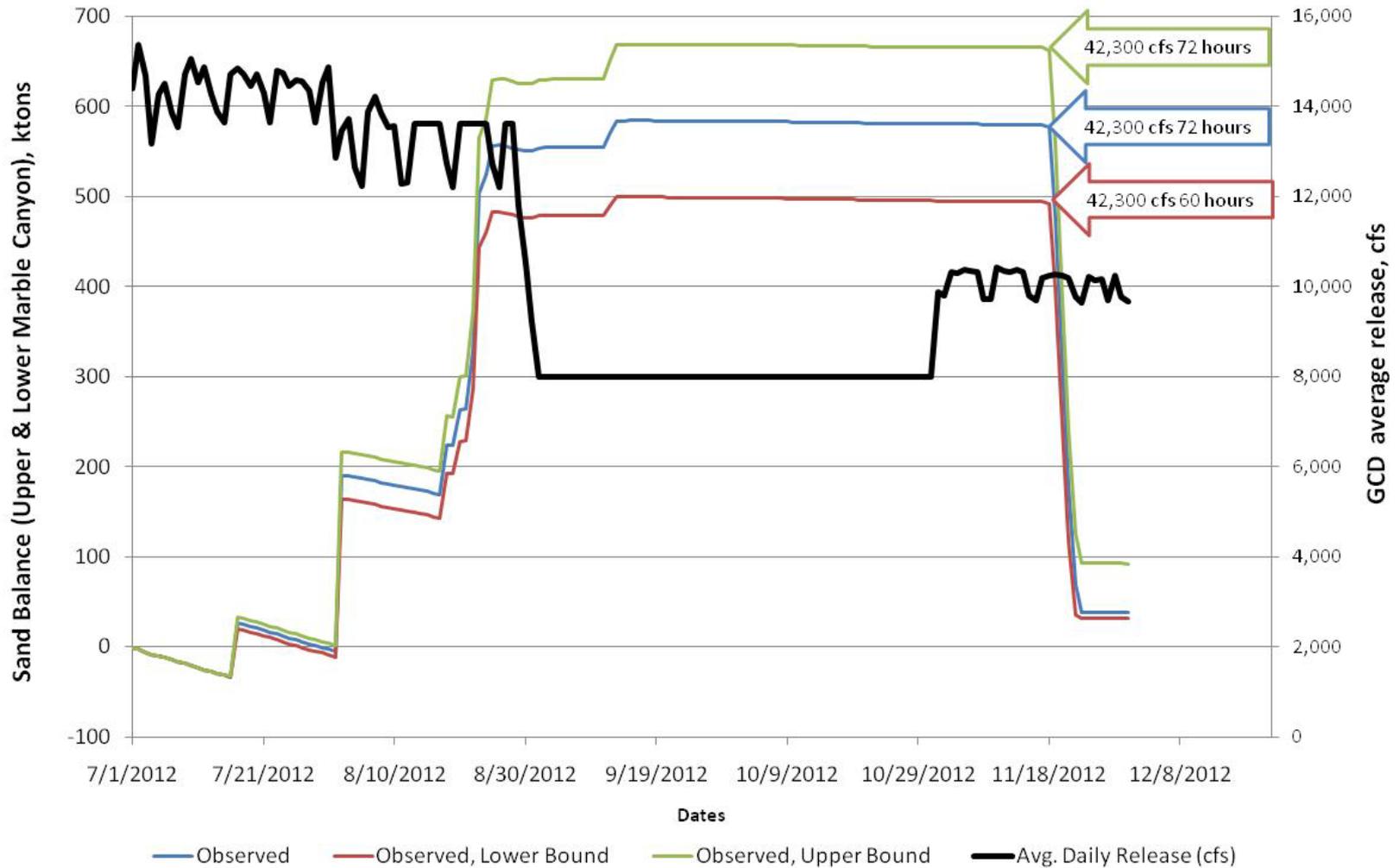
Ramping rates

- Ramping rates are defined by 1996 ROD and 1997 Glen Canyon Dam Operating Criteria (62 FR 9447, 4,000 cfs up and 1,500 cfs down)

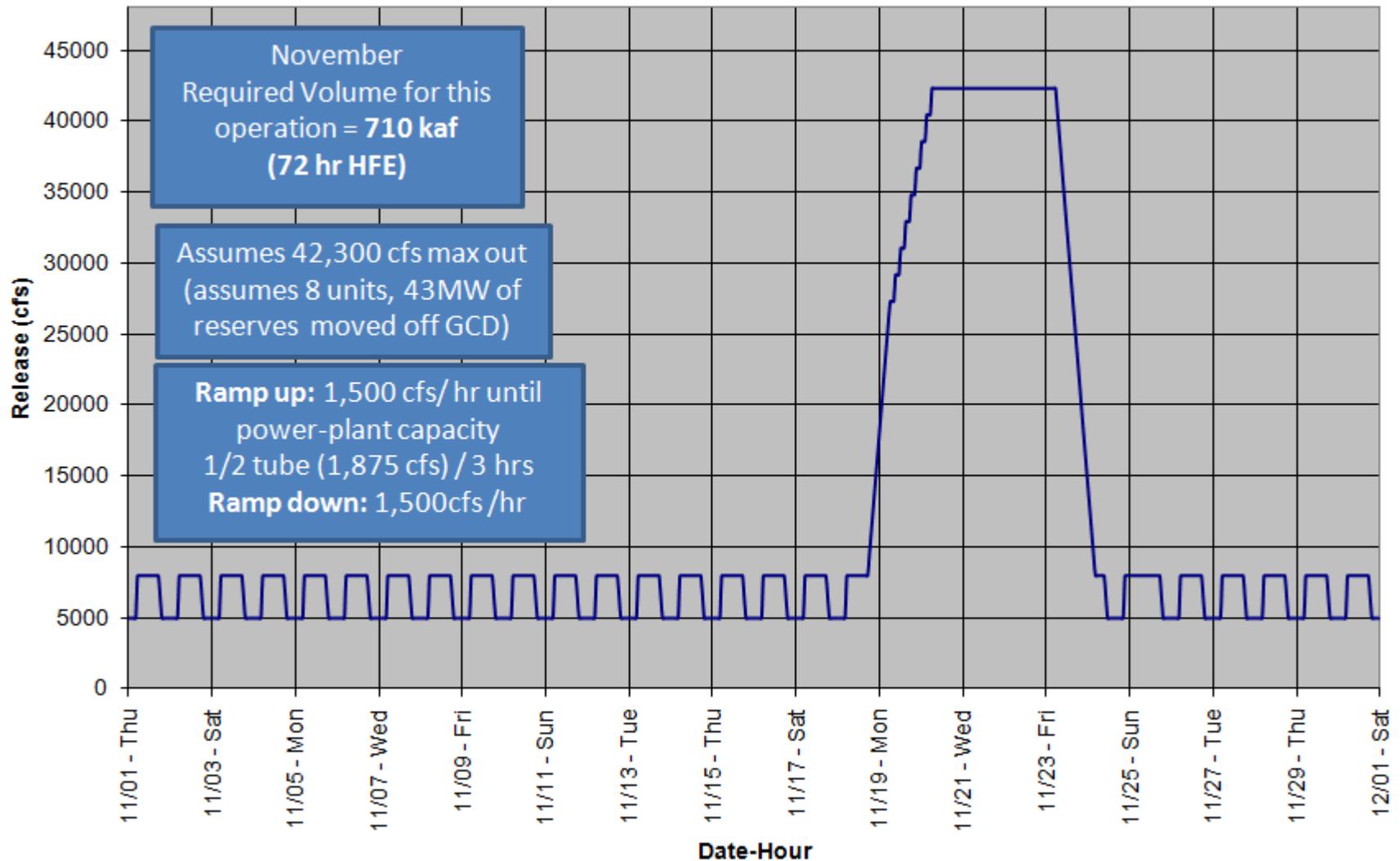
Model Constraints

- “the Leadership Team's view is that it would be inappropriate to adjust the model output in a way that would increase the amount of water to be released or increase power costs associated with an HFE release.” November 7, 2012 memo from Anne Castle

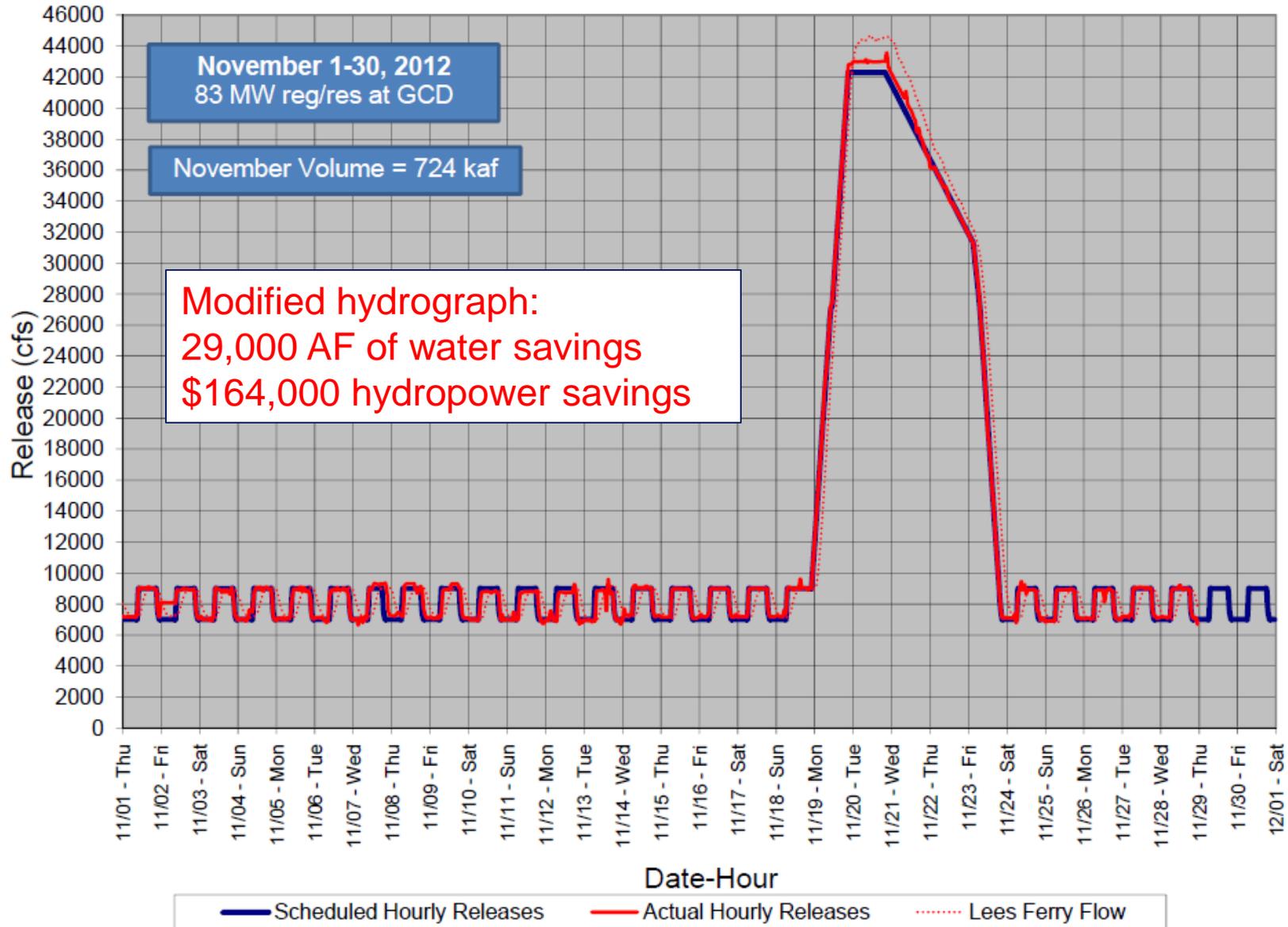
Sand Budget Model Results, 2012 Jul - Nov
Observed (incl. Upper & Lower est.) Paria Sand Input through 10/4/2012
Zero Future Paria Sand Input (10/5 - 11/30) **PROVISIONAL******



Possible Glen Canyon Dam Hourly Release Pattern



Glen Canyon Dam Hourly Release Pattern NOV 2012



Issues Raised and Lessons Learned during the 2012 HFE Planning Process

- More opportunity for more input sooner
- Modifying the hydrograph from the model output
- Effect of HFE spreading Whirling Disease
- Impacts of 5,000 to 8,000 background operation
 - Food base and Lees Ferry rainbow trout fishery
 - Whitewater rafting safety concerns
- Monitoring of sand bars
- Covering of, and access to, archaeological sites
- Hydropower costs – impacts to ratepayers