

Possible Impacts to Hydro Load Following From Reduced Operational Flexibility At Hells Canyon Dam

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Current FERC License Operational Constraints

- Tailwater Ramping Rate = 1 ft/hr at Johnson Bar (1.3 ft at Hells Canyon)
 - No daily limit
- Minimum Flow = 5,000 cfs
- Navigation Flow = 13,000 cfs at Lime Pt.
 - No specific Hells Canyon Dam release

IPC Proposed FERC License Operational Constraints

- Tailwater ramping rate = 1 ft/hr at Johnson Bar (1.3 ft at Hells Canyon)
- Minimum flow = 6,500 cfs (typical)
- Navigation flow = 13,000 cfs at Lime Pt.
 - No specific Hells Canyon Dam release

IPC FERC AIR Operational Constraints

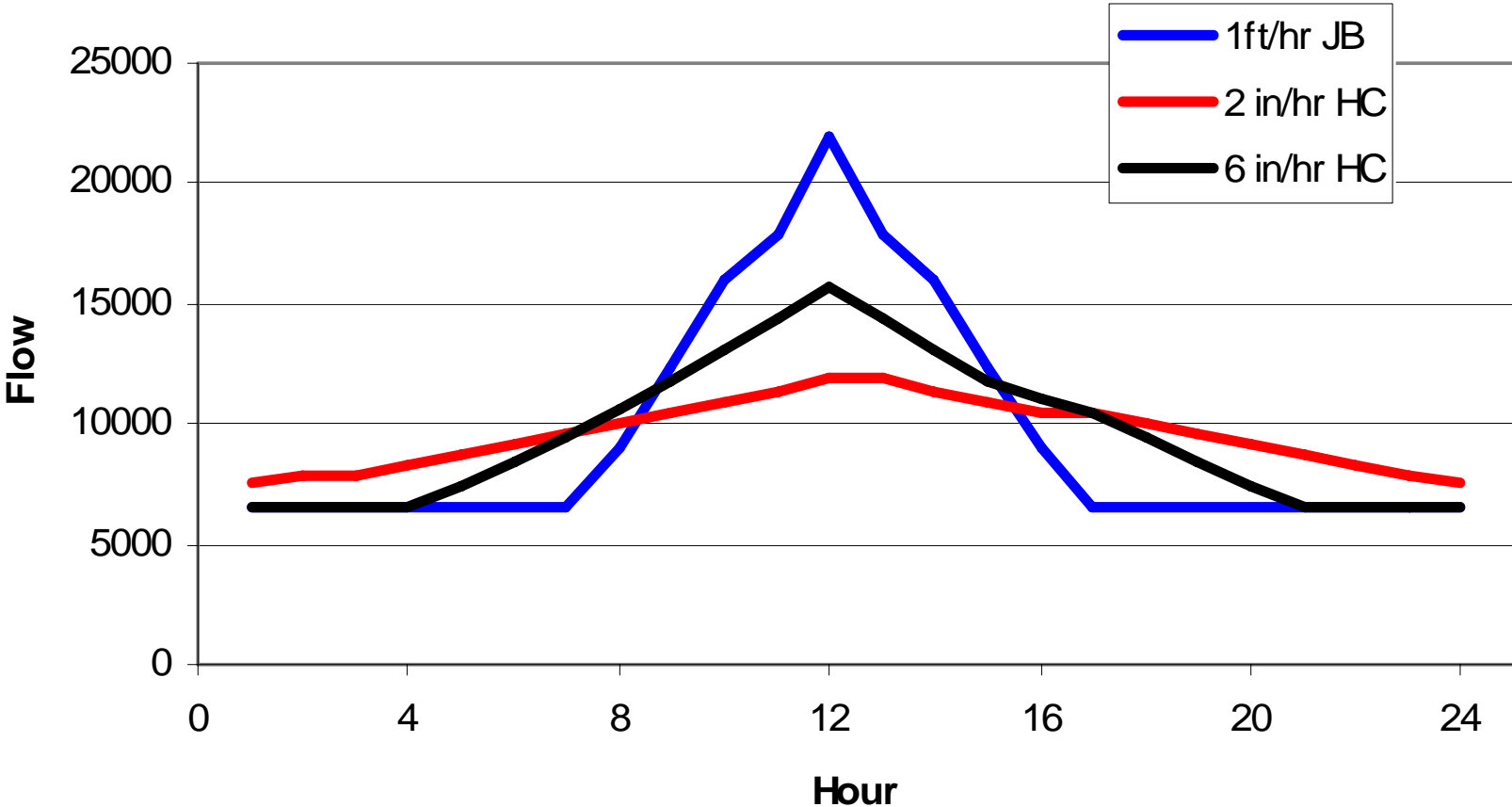
- Tailwater ramping rate = 2 in/hr and 6 in/hr at Hells Canyon Dam
- 4,500 cfs daily change limit
- Minimum navigation flow = 11,500 cfs at Lime Point
 - 8,500 cfs specific Hells Canyon Dam release

Impact From Reduced Tailwater Ramping

- Reduced peaking capacity
 - 2 in/hr = 56% at Hells Canyon Dam
 - 6 in/hr = 46% at Hells Canyon Dam
- Increased off-peak generation
- Reduced peak period generation

Hells Canyon Ramp Rates

9,500 cfs Daily Average Flow



Impact From Increased Minimum Flow

- Reduced peaking capacity
- Increased off-peak generation
- Reduced peak period generation

Replacing Lost Peaking Capacity

- Market purchases
 - Limited availability
 - Transmission constraints
- Construct gas peakers
 - High capital cost
 - High operation and maintenance costs
 - Reduced ramping speed