

System Condition Update

Spring Operations Review Forum Regional Conference Call

May 20, 2011

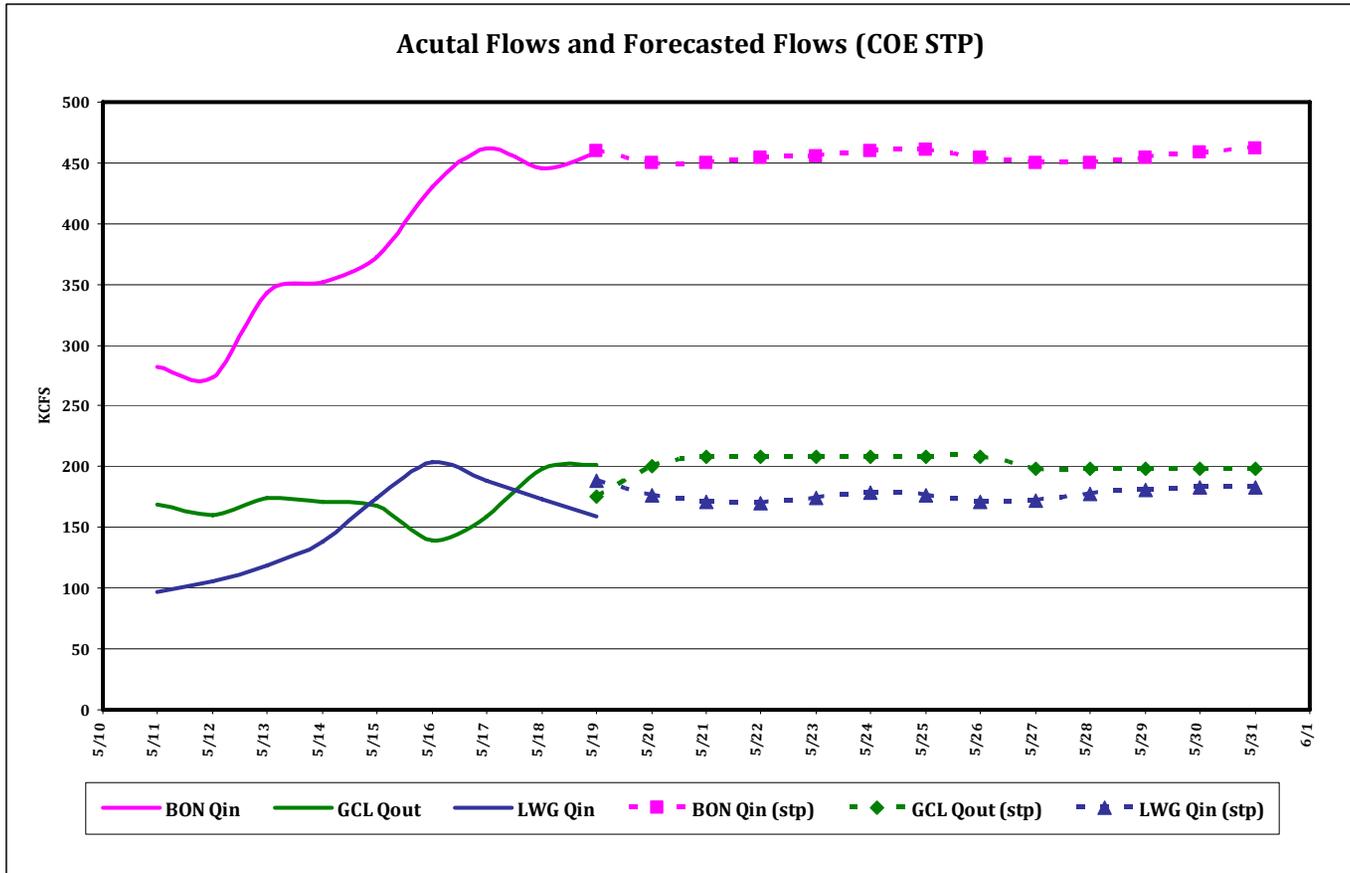
1:00 – 2:00 p.m.

To participate in the call please dial: **(877) 322-9654**

When prompted, enter access code: 328457



Hydro Operations Update



Hydro Operations Update

- The Corps of Engineers (COE) requested that Bonneville outflows be regulated to within 1 foot of flood stage (16 feet measured at Vancouver)
 - Equivalent to about 460 kcfs at Bonneville dam
 - Note that discharges from Grand Coulee/Chief Joseph (GCL/CHJ) need to balance flows on the Lower Snake in order to meet a flow objective at Bonneville.
 - In other words, as Lower Snake flows recede, GCL/CHJ flows need to increase (and vice versa)
 - As Lower Snake flows receded by mid-week, GCL/CHJ outflows needed to be increased to 190-200 kcfs
 - Since the maximum turbine discharge is about 185 kcfs at GCL/CHJ, the resulting generation needs to be fairly flat across the day to minimize TDG
 - Graph on next page shows the actual flows at Lower Granite, Grand Coulee and McNary as well as the forecasted flows from the COE's STP study published on May 17th

Hydro Operations Update

- Overgeneration conditions in the Northwest
 - There was insufficient demand for the resulting generation in light load hours offered at zero cost, so the following steps were implemented to meet the flow objective:
 - DSO 216 INC reserves reduced to 400 MW and DEC reserves reduced to 300 MW
 - Spill up to Level 1 Spill (120% TDG system-wide) – discussed more on the next slide
 - Implement Environmental Displacement/Redispatch
 - Continue to spill up to higher Spill Levels
 - Environmental Displacement/Redispatch
 - Small amounts of thermal generation within BPA's balancing authority were displaced first
 - Over 12,000 MW-hrs of wind generation has been displaced since May 18th
 - 12-hour average TDG levels are 120% or higher across the FCRPS as measured in the tailrace
 - Use of Environmental Displacement/Redispatch was effective in minimizing the amount of TDG in the system
 - Links to TDG data can be found on BPA's Overgeneration webpage or the TMT website

Hydro Operations Update

- System TDG is managed by implementing the Spill Priority List supplied by the COE
 - Actual TDG routinely monitored by the COE and spill values updated as needed
 - Had Environmental Displacement/Redispatch not been implemented, spill due to lack of demand would have been well into Level 4 during light load hours
 - Table below indicates what levels of spill were achieved in light-load hours since May 18

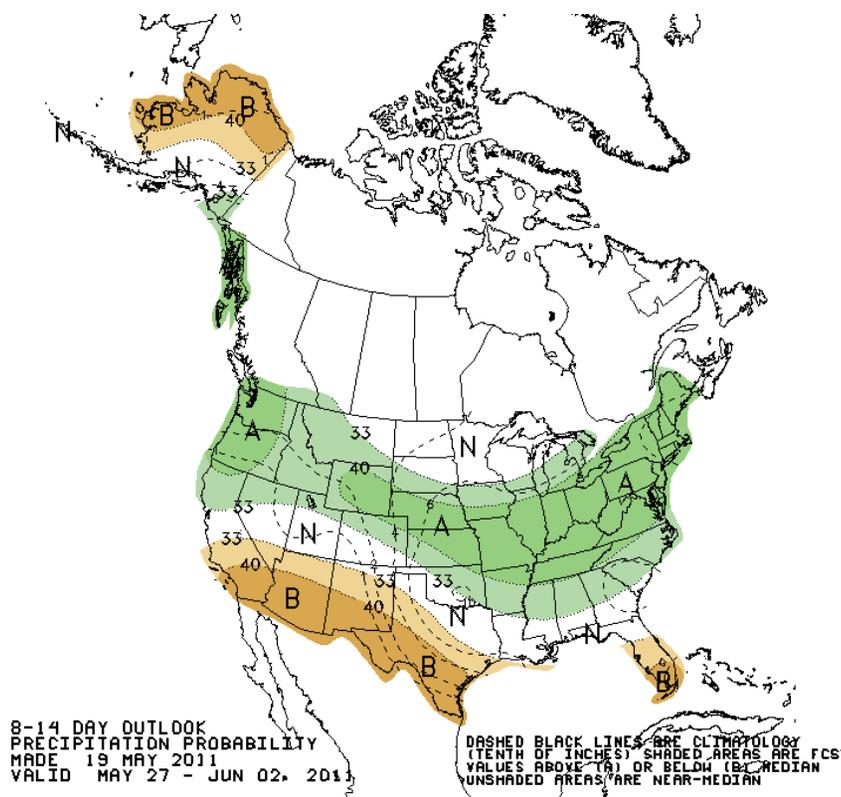
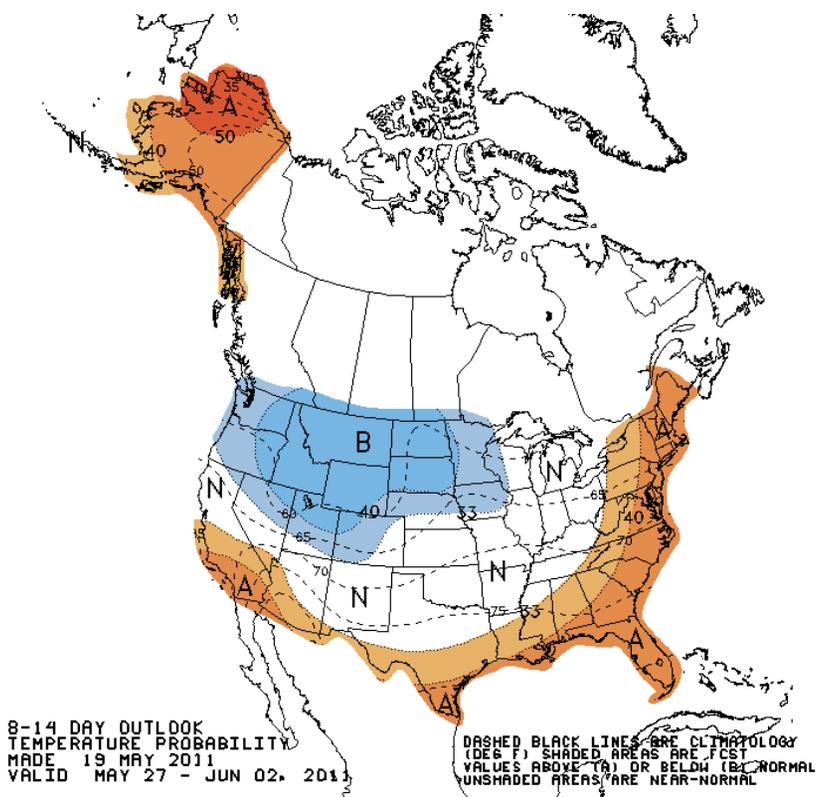
	Level 1 Spill (120% system wide)	Level 2 Spill (122% system wide)	Level 3 Spill (125% system wide)	Level 4 Spill (130% system wide)
Lower Monumental	28 kcfs	60 kcfs	80 kcfs	180 kcfs
Little Goose	40 kcfs	56 kcfs	91 kcfs	135 kcfs
McNary	190 kcfs	235 kcfs	280 kcfs	330 kcfs
Ice Harbor	85 kcfs	93 kcfs	110 kcfs	140 kcfs
Lower Granite	41 kcfs	61 kcfs	82 kcfs	125 kcfs
The Dalles	160 kcfs	181 kcfs	250 kcfs	360 kcfs
John Day	135 kcfs	177 kcfs	240 kcfs	450 kcfs
Bonneville	100 kcfs	120 kcfs	230 kcfs	250 kcfs
Chief Joseph	110 kcfs	120 kcfs	130 kcfs	165 kcfs
Grand Coulee	0 kcfs	5 kcfs	15 kcfs	21 kcfs

Maximum spill for each level (data from May 19, 2011 at 15:53)
 Generally speaking: **Red is fish passage/lack of turbine/carry reserves;**
Green is lack of demand

Actions to manage overgeneration

- Offering Spill Exchange Agreements to counter-parties with hydro resources – none signed yet.
 - Entered into Mid-C Spill Exchange agreement and successfully tested concept. However, high Mid-C inflows are preventing this from being implemented.
- Positioning Banks Lake to have the maximum amount of pump load available during May and June
- Moved non-essential generator and transmission maintenance outages out of May and June.
- Began spilling due to lack of demand this week in light load hours.
- Initiated Environmental Redispatch beginning May 18.
- Requested federal hydro independents to reduce LLH generation (by spilling, if necessary)

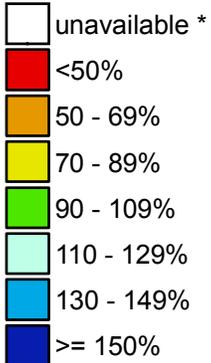
Weather and Streamflow



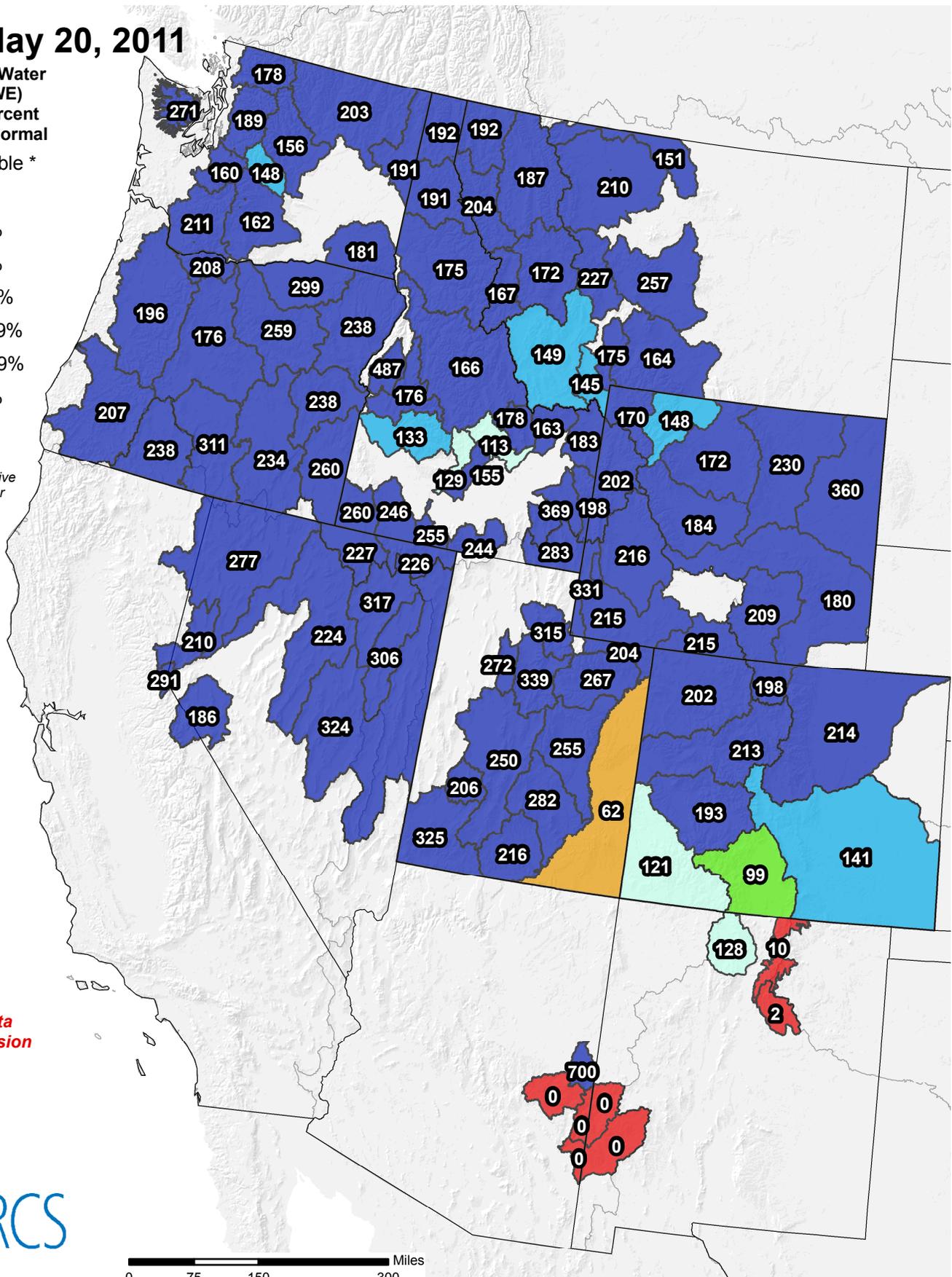
Westwide SNOTEL Current Snow Water Equivalent (SWE) % of Normal

May 20, 2011

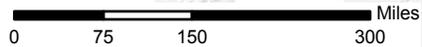
Current Snow Water Equivalent (SWE) Basin-wide Percent of 1971-2000 Normal



* Data unavailable at time of posting or measurement is not representative at this time of year



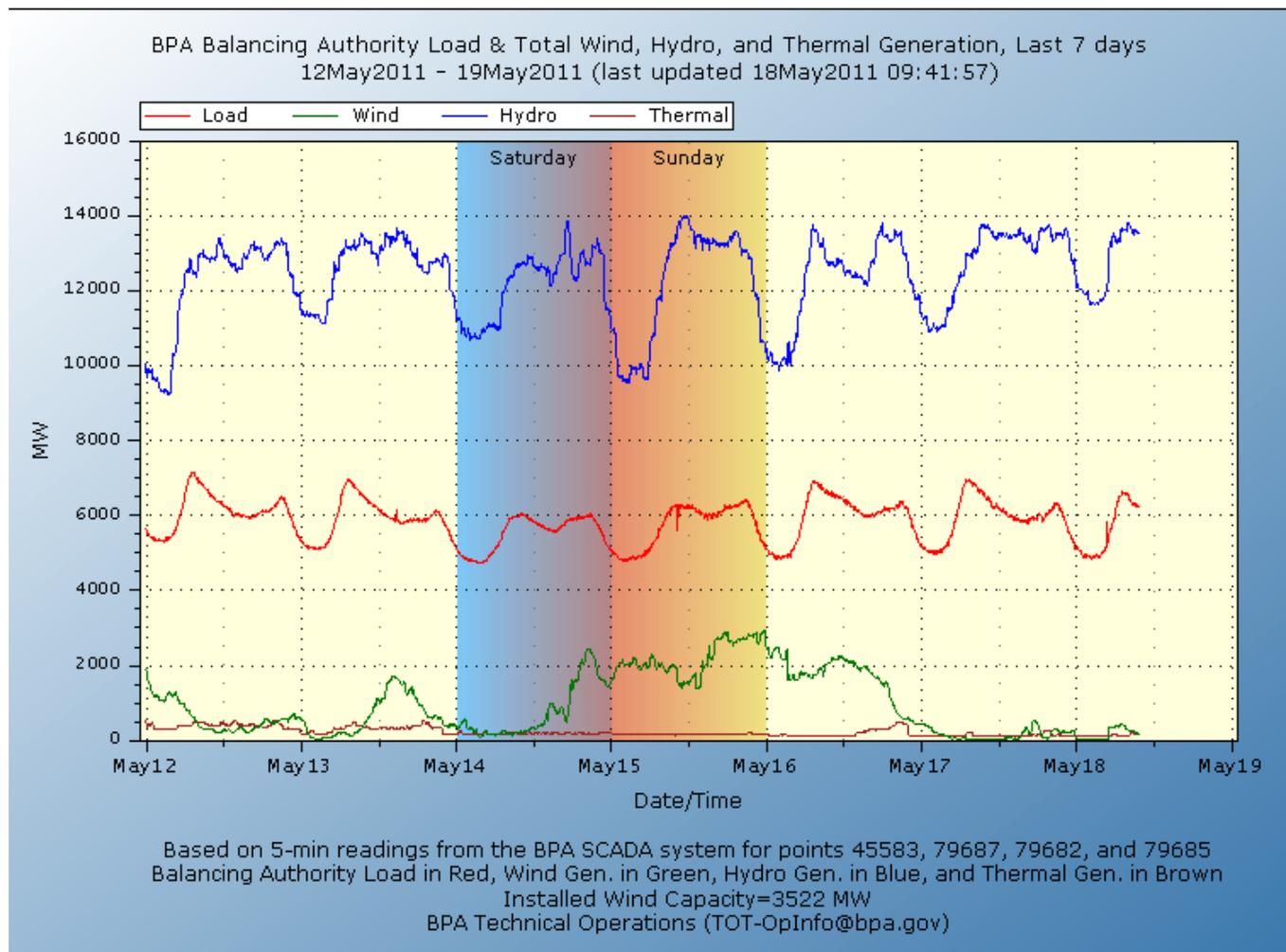
Provisional data subject to revision



The snow water equivalent percent of normal represents the current snow water equivalent found at selected SNOTEL sites in or near the basin compared to the average value for those sites on this day. Data based on the first reading of the day (typically 00:00).

Prepared by the USDA/NRCS National Water and Climate Center Portland, Oregon <http://www.wcc.nrcs.usda.gov/gis/>
 Based on data from <http://www.wcc.nrcs.usda.gov/reports/>
 Science contact: Jim.Marron@por.usda.gov 503 414 3047

Balancing Authority Load and Total Wind, Hydro, and Thermal Generation



Transmission Updates

■ COI N>S

- 5/16 to 5/20: 4516 MW due to BPA-Malin: PCB 4182 including 500kV Cap Group 3
- 5/24: 3850 MW due to CISO Tesla-Metcalf 500kv line
- 5/23 to 5/27: 4660 MW due to PACW Alvey-Dixonville #1 230kv line
- 5/26: 2950 MW due to CISO Round Mountain-Table Mountain #1 500kv line

■ PDCI N>S

- 2990 MW: Studied at rated capacity for various outages over next seven days

■ NI S>N

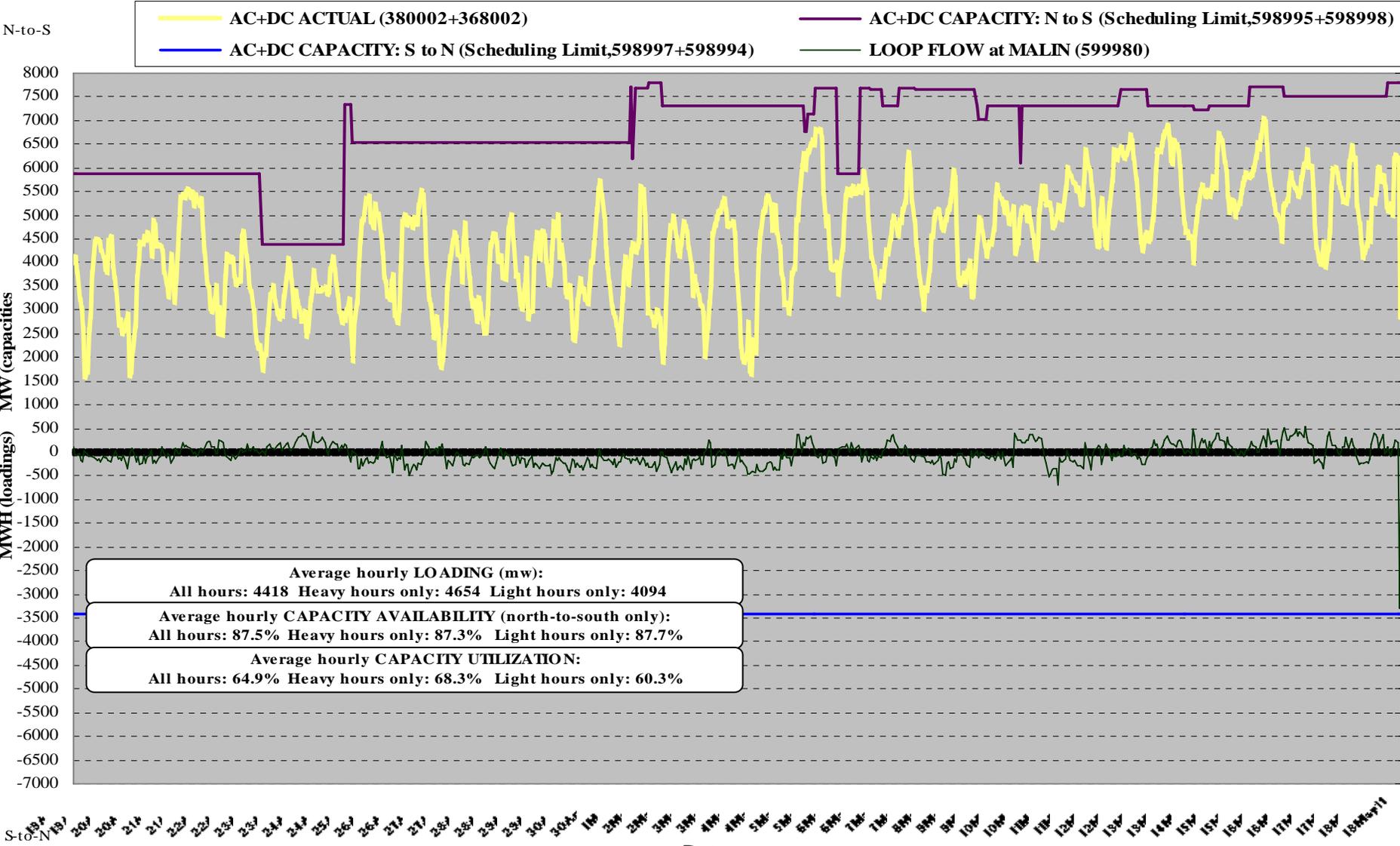
- 5/18 to 5/23: 1500 MW : due to BCH - Custer-Ingledow 1 500kV Line, Ingledow 500kV Main Bus 2 and 500kV Transformer 4

Transmission Updates

- **COI + PDCI (N to S) Capacity Utilization (04/18– 05/17)**
 - All Hours: 64.5%
 - Heavy Load Only: 67.8%
 - Light Load Only: 59.9%
- **Northern Intertie (S to N) Capacity Utilization (04/18– 05/17)**
 - All Hours: 44.6%
 - Heavy Load Only: 36.5%
 - Light Load Only: 55.8%
 - ***** Many hours last week with actual NI flows N to S*****
- **Montana-PNW Average Utilization (04/18– 05/17)**
 - All Hours: -515 MW
 - Heavy Load Only: -596 MW
 - Light Load Only: -420 MW
 - ***The PNW is a net importer of energy from Montana***

AC+DC INTERTIE AVAILABILITY & UTILIZATION: 19APR11 - 18MAY11 (30 days)

ACTUAL LOADINGS and CAPACITIES, BY HOUR



capacity availability = actual capacity/rated capacity, capacity utilization = actual loading/actual capacity
 Source: Hourly data via RODS; Capacities are those at COB or NOB and reflect total path scheduling limit

Actuals may exceed scheduling limit as long as conditions remain within North-of-John-Day vs. COI & PDCI operating nomogram limits

Contact Information

- To discuss commercial operations, please contact Alex Spain at (503) 230-5780, ajspain@bpa.gov.
- For additional information on Overgeneration, please contact:
Project Manager: Nita Burbank - (503) 230-3935, nmburbank@bpa.gov
Public Engagement: Kurt Lynam - (503) 230-5218, kolynam@bpa.gov
- Overgeneration Web site:
<http://www.bpa.gov/corporate/AgencyTopics/ColumbiaRiverHighWaterMgmt/>