HIGHLIGHTS FOR OCTOBER 2019

DAKOTAS AREA OFFICE

October precipitation was above average in the Heart River Basin with 103 percent and 210 percent of average precipitation at Dickinson and Heart Butte Dams, respectively. Within the Cheyenne, Grand and James River basins precipitation was varied, ranging from 59 percent of average at Angostura Reservoir to 209 percent of average at Shadehill Reservoir.

October inflows in the Heart River basin were well above average, with 573 percent of average inflow at Dickinson and 937 percent of average inflow at Lake Tschida. For the Cheyenne River basin, inflows were varied, ranging from six percent of average at Belle Fourche Reservoir to 342 percent of average at Keyhole Reservoir. The James and Grand River basins exhibited above average inflows, exacerbated by unseasonably saturated soils, with 8,798 percent of average at Jamestown Reservoir and 788 percent of average at Shadehill Reservoir.

Reservoir storage in the Heart River basin finished the month above average; 161 percent of average for Dickinson Reservoir, and 108 percent of average at Heart Butte Reservoir. Storage in the Cheyenne River basin was above average at the end of October, ranging from 113 percent of average at Deerfield Reservoir to 313 percent of average at Belle Fourche Reservoir. Storage at Shadehill and Jamestown Reservoirs was above average for the end of October, showing 115 percent and 319 percent of average, respectively.

EASTERN COLORADO AREA OFFICE

Precipitation was above average over the Colorado-Big Thompson Project (CBT) during October. The Willow Creek and Granby Reservoir watersheds reported the lowest precipitation at 98 percent of average, while Green Mountain Reservoir had the highest at 141 percent of average.

Inflows were below average over the CBT during October. The inflow to Lake Granby Reservoir was the lowest at 60 percent of average. The inflow to Green Mountain Reservoir was the highest at 98 percent of average.

The Lake Granby storage of 469,100 AF on November 1 was 42,000 AF above average and 29,100 AF higher than one year ago on this date. Terminal reservoir storage in Carter Lake and Horsetooth Reservoir was 130 and 162 percent of average, respectively. The October end-of-month CBT storage water in Green Mountain, Lake Granby, Carter Lake, and Horsetooth Reservoir was 757,400 AF; 77,700 AF above average.

Precipitation was above average over the Fryingpan-Arkansas Project (Fry-Ark) during October. Precipitation at Ruedi Reservoir was the lowest with 131 percent of average, while Pueblo Reservoir received the highest with 227 percent of average.

Native inflows were below average over the Fry-Ark during October. The inflow to Twin Lakes Reservoir was the lowest at 50 percent of average. The inflow to Turquoise Reservoir was the highest at 83 percent of average.

Reservoir storage is above average for the Fry-Ark. Ruedi Reservoir is the lowest at 94 percent of average. Pueblo Reservoir is the highest at 130 percent of average. The total October end-of-month storage in the four reservoirs is 515,300 AF, 114 percent of average.

MONTANA AREA OFFICE

Precipitation during October was varied in the Upper Missouri River basin, ranging from 59 percent of average at Clark Canyon Reservoir to 215 percent of average at Canyon Ferry Reservoir. Inflows were above average ranging from 108 percent of average at Clark Canyon Reservoir to 232 percent of average at Lake Elwell. Reservoir storage is about average, and ranges from 94 percent of average at Canyon Ferry Reservoir to 114 percent of average at Lake Elwell Reservoir.

For the Milk River Basin, the precipitation was varied, ranging from 18 percent of average at Fresno Reservoir to 116 percent of average at Sherburne Reservoir. The inflows were varied, ranging from 43 percent of average at Fresno Reservoir to 155 percent of average at Sherburne Reservoir. End-of-month storage ranges from 124 percent of average at Nelson Reservoir to 152 percent of average at Fresno Reservoir.

October precipitation was 99 percent of average at Yellowtail Dam. Inflows were 124 percent of average. Storage was normal at 106 percent of average.

NEBRASKA-KANSAS AREA OFFICE

October precipitation was below average in the Republican River Basin, ranging from 15 percent of average at Bonny Reservoir to 161 percent of average at Lovewell Reservoir. Inflows were varied and ranged from eight percent of average at Swanson Lake Reservoir to 297 percent of average at Lovewell Reservoir. Ignoring Bonny Reservoir, which has been drained for Compact compliance, storage ranges from 47 percent of average at Enders Reservoir to 198 percent of average at Keith Sebelius Reservoir.

For the Solomon Basin, the precipitation was varied, ranging from 45 percent of average at Webster Reservoir to 161 percent of average at Glen Elder Reservoir. The inflows were well above average, ranging from 279 percent of average at Kirwin Reservoir to 677 percent of average at Glen Elder Reservoir. End-of-month storage ranges from 107 percent of average at Glen Elder Reservoir to 223 percent of average at Webster Reservoir.

For the Smokey Hill, Niobrara, and Lower Platte Basins, precipitation was varied, ranging from 55 percent of average at Cedar Bluff Reservoir to 152 percent of average at Box Butte Reservoir. The inflows were varied, ranging from 12 percent of average at Box Butte Reservoir to 144 percent of average at Calamus Reservoir. End-of-month storage ranges from 90 percent of average at Calamus Reservoir to 288 percent of average at Box Butte Reservoir.

OKLAHOMA-TEXAS AREA OFFICE

October precipitation was varied over the Arkansas River Basin, ranging from 76 percent of average at Cheney Reservoir to 295 percent of average at Sanford Reservoir. Inflows were varied, ranging from four percent of average at Cheney Reservoir to 126 percent of average at Sanford Reservoir. Storage in the Arkansas River basin is above average and ranges from 110 percent of average at Sanford Reservoir to 123 percent of average at Cheney Reservoir.

For the Red River Basin, the October precipitation was varied, ranging from 22 percent of average at Altus Reservoir to 180 percent of average at McGee Creek Reservoir. The inflows ranged from zero at Mountain Park Reservoir to 337 percent of average at McGee Creek Reservoir. Storage in the Red River basin ranges from 97 percent of average at Altus Reservoir to 131 percent of average at Mountain Park Reservoir.

For the Nueces, Colorado and Washita Basins, the precipitation was varied, ranging from 28 percent of average at Nasworthy Reservoir to 206 percent of average at Choke Canyon Reservoir. The inflows were varied, ranging from zero at Foss Reservoir to 164 percent of average at Nasworthy Reservoir. Storage in these basins ranges from 76 percent of average at Choke Canyon Reservoir to 161 percent of average at Twin Buttes Reservoir.

WYOMING AREA OFFICE

Precipitation during October was below average in the North Platte River Basin, ranging from 49 percent of average at Guernsey Reservoir to 86 percent of average at Glendo Reservoir. Inflows were varied, ranging from zero at Pathfinder to 126 percent of average at Guernsey Reservoir. Reservoir storage is above average, and ranges from 115 percent of average at Glendo Reservoir to 164 percent of average at Pathfindert Reservoir.

October precipitation was varied in the Bighorn River Basin. October precipitation ranged from 40 percent of average at Buffalo Bill Reservoir to 157 percent of average at Boysen Reservoir. Reservoir inflow in the Bighorn basin was above average, ranging from 128 percent of average at Bull Lake Reservoir to 186 percent of average at Buffalo Bill Reservoir. Storage in the Bighorn Basin is above average, ranging from 109 percent of average at Boysen Reservoir to 121 percent of average at Bull Lake Reservoir.

CORPS OF ENGINEERS REPORT

Higher-than-average releases from all Missouri River Mainstem System projects, including Gavins Point Dam, will continue through November, the U.S. Army Corps of Engineers announced today.

Gavins Point releases will remain near 80,000 cubic feet per second (cfs) for the remainder of November to ensure flood control storage zones in all system reservoirs are emptied prior to the 2020 runoff season. This release rate is more than twice the average release for this time of the year.

Runoff in all reaches except for the Fort Randall reach was above average for the month of October. The Garrison to Oahe reach runoff was over six times the long-term average and runoff in the Gavins Point to Sioux City reach was more than 10 times the long-term average. The 2019 upper basin runoff forecast was lowered slightly to 60.2 million acre-feet. If realized, this runoff total would be 0.8 MAF less than 2011 (61.0 MAF), which is the highest runoff in 121 years of record-keeping. The January-October observed runoff (56.7 MAF) has already exceeded the second highest runoff, 49.0 MAF observed in 1997, with two months remaining.

The Missouri River Mainstem Reservoir System total storage was 60.9 MAF as of Nov. 1, occupying 4.8 MAF of the 16.3 MAF flood control zone.

Winter releases from Gavins Point Dam will be at least 17,000 cfs. Based on the latest reservoir studies, Gavins Point Dam releases will be reduced from 80,000 cfs to 22,000 cfs during December, reaching the winter release rate by the middle of December. Navigation flow support at the mouth of the Missouri River will end on December 11.

Reservoir Forecasts

- **Gavins Point Dam**
  - Average releases past month – 80,000 cfs
  - Current release rate – 80,000 cfs
  - Forecast release rate – 80,000 cfs
  - End-of-October reservoir level – 1206.7 feet
  - Forecast end-of-November reservoir level – 1206.7 feet

- **Fort Randall Dam**
  - Average releases past month – 75,000 cfs
  - End-of-October reservoir level – 1,348.2 feet (down 10.9 feet from September)
  - Forecast end-of-November reservoir level – 1,337.8 feet
  - Notes: Releases will be adjusted as necessary to maintain the desired reservoir elevation at Gavins Point. The reservoir is normally drawn down to 1,337.5 feet in the fall to provide space for winter hydropower generation at Oahe and Big Bend. The annual drawdown will continue in November.

- **Big Bend Dam**
  - Average releases past month – 60,300 cfs
  - Forecast average release rate – 64,600 cfs
  - Forecast reservoir level – 1,420.5 feet

- **Oahe Dam**
  - Average releases past month – 62,100 cfs
  - Forecast average release rate – 65,000 cfs
  - End-of-October reservoir level – 1,613.1 feet (falling 2.0 feet during October)
  - Forecast end-of-November reservoir level – 1,609.3 feet

- **Garrison Dam**
  - Average releases past month – 47,000 cfs
  - Current release rate – 48,000 cfs
  - Forecast average release rate – 42,000 cfs
  - End-of-October reservoir level – 1,842.4 feet (falling 3.3 feet during October)
  - Forecast end-of-November reservoir level – 1,839.6 feet
- **Notes** – Releases will be reduced starting around mid-November reaching 16,000 cfs prior to the river freeze-in at Bismarck. Once an ice cover is established, releases will be gradually increased to 24,500 cfs.

- **Fort Peck Dam**
  - Average releases past month – 14,700 cfs
  - Current release rate – 15,000 cfs
  - Forecast average release rate – 15,000 cfs
  - End-of-October reservoir level – 2,240.7 feet (down 2.1 feet from September)

- Forecast end-of-November reservoir level – 2,238.8 feet

The six mainstem power plants generated 1,366 million kWh of electricity in October. Typical energy generation for October is 810 million kWh. The power plants are projected to generate 13.1 billion kWh of electricity this year, 139 percent of the long-term average, 9.4 billion kWh.