

April 14, 2022

Mr. Chet Perry / Mr. Jim Schroeder  
PacifiCorp

Ms. Ruth Burris  
Portland General Electric

Mr. Jonathan Hart  
Eugene Water & Electric

Mr. Paul Downey / Mr. Keith Hormann  
City of Forest Grove

Mr. Zac Yanez  
Puget Sound Energy, Inc.

Mr. Matt Boast  
Kittitas County PUD

Mr. Rick Applegate  
Tacoma Power

Ms. Jaime Phillips  
McMinnville Water & Light

Mr. Eric Espenhorst  
City of Seattle, City Light Dept.

Mr. Mike Watkins  
City of Milton-Freewater

Mr. Kevin Holland  
Avista Corp.

Mr. Chris Velat  
Cowlitz PUD

Subject: Priest Rapids Project Highlights for March

**UNIT STATUS:** Unit availability for the projects is as follows:

**Wanapum Generator Operations/Turbine Restoration:**

W-1, 2, 3, 4, 5, 6, 7, 8, 9, 10: Operational.

W-03 was removed from service January 3, 2022, for unit overhaul. W-03 returned to service March 30, 2022.

Line 2 (W-05, W-06, W-07, W-08) was removed from service March 23, 2022, for BPA maintenance request. Line 2 (W-05, W-06, W-07, W-08) returned to service March 24, 2022.

Line 3 (W-09, W-10) was removed from service March 29, 2022, for BPA maintenance request. Line 3 (W-09, W-10) returned to service March 31, 2022.

**Priest Rapids Generator Operations/Turbine Restoration:**

P-1, 2, 3, 5, 6, 7, 8, 9, 10: Operational.

P-04 was removed from service November 16, 2020, for turbine/generator rehabilitation and governor replacement. P-04 is scheduled to return to service June 30, 2022.

Priest Rapids Project Highlights  
April 14, 2022

P-06 was forced out of service March 3, 2022, due to an analog datalink failure. P-06 returned to service March 4, 2022.

**GENERATION STATUS REPORTS:** March Generation Reports are attached for your information and use.

**ELECTRIC SERVICE INTERRUPTION REPORTS:** March Electric Service Interruption Reports are attached for your information and use.

The regular monthly meeting of the Grant County P.U.D. Power Purchasers' Advisory Committee will be held on Wednesday, June 15<sup>th</sup> at 10:00 a.m. via Webex.

The District representative is Phillip Law. Phillip's telephone number is: 509-754-5090.

Sincerely,

*Dale Campbell*

Dale Campbell, P.E.  
Senior Manager of Power Production Engineering

DC:cec

Attachments

|    |                              |                  |
|----|------------------------------|------------------|
| C: | HED Main Files 1.1.1.2       | Dale Campbell    |
|    | Tom Flint                    | Phillip Law      |
|    | Larry Schaapman              | Bonnie Overfield |
|    | Judy Wilson                  | Ty Ehrman        |
|    | Nelson Cox                   | Shane Lee        |
|    | Terry Pyle                   | Ben Pearson      |
|    | Chief Operator/Wanapum       | Joseph Boitano   |
|    | Chief Operator/Priest Rapids | Rey Pulido       |

# Wanapum

## Public Utility District of Grant County, Ephrata, Washington MONTHLY REPORT OF POWER OPERATIONS

**March 2022**

|                            |                 |     |                          |             |      |
|----------------------------|-----------------|-----|--------------------------|-------------|------|
| Installed Capacity (A)     | 1,120,000       | kW  | Hours Plant Operated:    | 743         |      |
| Gross Generation (B)       | 469,406,200     | kWH | Plant Use                | 652,900     | kWH  |
| Max. Hourly Generation (C) | 924,600         | kWH | Net Generation           | 468,753,300 | kWH  |
| Time of Max. Hourly Gen.   | 03/24/2022 1900 |     | Water for Generation (D) | 6,643,780   | A.F. |
| Plant Factor               | 56.41%          |     | Water Bypassed (E)       | 233,660     | A.F. |
| Utilization Factor         | 82.55%          |     | Water for Fish (F)       | 114,680     | A.F. |
| Water Factor:              | 95.02%          |     | Average Hydraulic Head:  | 79.5        | Feet |

### UNIT SERVICE RECORD

| Unit No | Monthly Gen. (mWH) | Hrs. Operation | Hrs Down For Maint. | Availability Factor (G) | Nature of Maintenance               |
|---------|--------------------|----------------|---------------------|-------------------------|-------------------------------------|
| W-1     | 53,696             | 670.00         | 9.97                | 0.99                    | Slip Ring Maintenance               |
| W-2     | 58,125             | 730.88         | 7.47                | 0.99                    | W2 Slip ring maintenance            |
| W-3     | 2,504              | 32.63          | 710.37              | 0.04                    | For unit overhaul.                  |
| W-4     | 48,942             | 614.18         | 7.28                | 0.99                    | Slip Ring Maintenance               |
| W-5     | 43,000             | 539.12         | 31.42               | 0.96                    | for Line 2 outage. (Cade)           |
| W-6     | 55,692             | 711.47         | 31.42               | 0.96                    | for Line 2 outage. (Cade)           |
| W-7     | 52,027             | 656.20         | 31.42               | 0.96                    | for Line 2 outage. (Cade)           |
| W-8     | 52,698             | 657.68         | 31.42               | 0.96                    | for Line 2 outage. (Cade)           |
| W-9     | 52,526             | 658.18         | 55.85               | 0.92                    | - Line #3 Outage for MCC (K. Morse) |
| W-10    | 50,196             | 627.68         | 52.95               | 0.93                    | - Line #3 Outage for MCC (K. Morse) |

(G) Availability Factor =

$$\frac{\text{Hours in Month} - \text{Hours Down for Maint.}}{\text{Hours in Month}}$$

$$\text{Plant Factor} = \frac{\text{(B)} * 100}{\text{(A)} * \text{Hours in Month}}$$

$$\text{Utilization Factor} = \frac{\text{(C)}}{\text{(A)}} * 100$$

$$\text{Water Factor} = \frac{\text{(D)}}{\text{(D)} + \text{(E)} + \text{(F)}} * 100$$

# Plant Service Interruptions

Plant: WANAPUM

March, 2022

| Date       | Time | Duration |         | Unit | Circuit Breaker Tripped | Relays Operated |       | Remarks                             |
|------------|------|----------|---------|------|-------------------------|-----------------|-------|-------------------------------------|
|            |      | Month    | Total   |      |                         | Type            | Cause |                                     |
| 03/01/2022 | 0000 | 7:10:22  | 2072:18 | W-3  | W-332                   | MAN             | 11    | For unit overhaul.                  |
| 03/07/2022 | 0600 | 9:58     | 9:58    | W-1  | W-132                   | MAN             | 11    | Slip Ring Maintenance               |
| 03/08/2022 | 0606 | 7:17     | 7:17    | W-4  | W-432                   | MAN             | 11    | Slip Ring Maintenance               |
| 03/09/2022 | 0606 | 7:28     | 7:28    | W-2  | W-232                   | MAN             | 11    | W2 Slip ring maintenance            |
| 03/23/2022 | 0814 | 31:25    | 31:25   | W-5  | W-532                   | MAN             | 11    | for Line 2 outage. (Cade)           |
| 03/23/2022 | 0814 | 31:25    | 31:25   | W-6  | W-632                   | MAN             | 11    | for Line 2 outage. (Cade)           |
| 03/23/2022 | 0814 | 31:25    | 31:25   | W-7  | W-732                   | MAN             | 11    | for Line 2 outage. (Cade)           |
| 03/23/2022 | 0814 | 31:25    | 31:25   | W-8  | W-832                   | MAN             | 11    | for Line 2 outage. (Cade)           |
| 03/29/2022 | 0708 | 52:57    | 52:57   | W-10 | W-1032                  | MAN             | 11    | - Line #3 Outage for MCC (K. Morse) |
| 03/29/2022 | 0709 | 55:51    | 55:51   | W-9  | W-932                   | MAN             | 11    | - Line #3 Outage for MCC (K. Morse) |

**Relay Types:** MAN - Manual OC - Overcurrent DIFF - Differential FREQ - Frequency GRD - Ground V - Voltage THER - Thermal TRIP - 86E Trip OTH - Other

**Causes:** 1 Lightning 2 All other weather 3 Trees, etc. into line 4 Malicious damage 5 Line down 6 Defective equipment 7 Inadequate system 8 Trouble on another system 9 Operation error 10 Relay error 12 Cause unknown 11 Prearranged outage 13 Computer control 14 Other

**WANAPUM POWERPLANT GENERATION SUMMARY  
MARCH 2022**

| UNIT | 100% RATED<br>INSTALLED CAPACITY | GENERATION (MWH) |         |            | MAINTENANCE HOURS |  |
|------|----------------------------------|------------------|---------|------------|-------------------|--|
|      |                                  | CURRENT          | YTD     | CURRENT    | YTD               |  |
| W-1  | 112.00                           | 53,696           | 182,313 | 9.97 (A)   | 9.97              |  |
| W-2  | 112.00                           | 58,125           | 186,850 | 7.47 (A)   | 7.47              |  |
| W-3  | 112.00                           | 2,504            | 7,221   | 710.37 (B) | 2,072.30          |  |
| W-4  | 112.00                           | 48,942           | 153,898 | 7.28 (A)   | 228.98            |  |
| W-5  | 112.00                           | 43,000           | 168,260 | 31.42 (C)  | 41.20             |  |
| W-6  | 112.00                           | 55,692           | 181,680 | 31.42 (C)  | 41.30             |  |
| W-7  | 112.00                           | 52,027           | 179,763 | 31.42 (C)  | 31.42             |  |
| W-8  | 112.00                           | 52,698           | 181,539 | 31.42 (C)  | 31.42             |  |
| W-9  | 112.00                           | 52,526           | 174,049 | 55.85 (D)  | 115.17            |  |
| W-10 | 112.00                           | 50,196           | 177,322 | 52.95 (D)  | 52.95             |  |

**PROJECT TOTAL 1120.00 469,406 1,592,895 969.57 2,632.18**  
**PLANT USE: 653 2,043**  
**NET GENERATION: 468,753 1,590,852**

**PLANT RATING CURVE CAPACITY BASED ON 40 YR WATER**

996,910

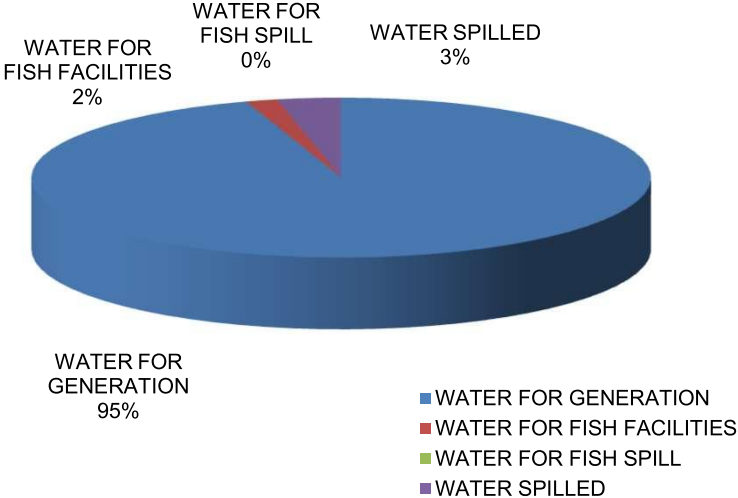
- (A) Slip ring maintenance
- (B) Unit overhaul
- (C) Line 2 outage
- (D) Line 3 outage for MCC

**WANAPUM POWERPLANT  
WATER UTILIZATION  
MARCH 2022**

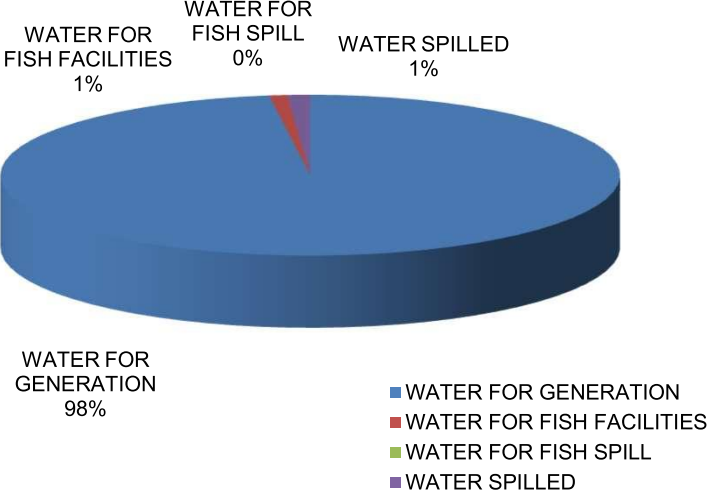
|                           | WATER UTILIZED (ACRE FEET) | EQUIVALENT ENERGY (MWH) |
|---------------------------|----------------------------|-------------------------|
| TOTAL RIVER FLOW          | 6,992,120                  | 494,018                 |
| WATER FOR GENERATION      | 6,643,780                  | 469,406                 |
| WATER FOR FISH FACILITIES | 114,680                    | 8,103                   |
| WATER FOR FISH SPILL      | 0                          | 0                       |
| WATER SPILLED             | 233,660                    | 16,509                  |

# Wanapum Water Utilization Report March 2022

## MONTHLY WATER USAGE



## YEAR TO DATE WATER USAGE



# Priest Rapids

## Public Utility District of Grant County, Ephrata, Washington MONTHLY REPORT OF POWER OPERATIONS

March 2022

|                            |                 |     |                          |             |      |
|----------------------------|-----------------|-----|--------------------------|-------------|------|
| Installed Capacity (A)     | 950,000         | kW  | Hours Plant Operated:    | 743         |      |
| Gross Generation (B)       | 449,591,200     | kWH | Plant Use                | 1,028,600   | kWH  |
| Max. Hourly Generation (C) | 816,300         | kWH | Net Generation           | 448,562,600 | kWH  |
| Time of Max. Hourly Gen.   | 03/06/2022 1800 |     | Water for Generation (D) | 6,689,660   | A.F. |
| Plant Factor               | 63.70%          |     | Water Bypassed (E)       | 58,890      | A.F. |
| Utilization Factor         | 85.93%          |     | Water for Fish (F)       | 47,480      | A.F. |
| Water Factor:              | 98.43%          |     | Average Hydraulic Head:  | 76.7        | Feet |

### UNIT SERVICE RECORD

| Unit No | Monthly Gen. (mWH) | Hrs. Operation | Hrs Down For Maint. | Availability Factor (G) | Nature of Maintenance                                      |
|---------|--------------------|----------------|---------------------|-------------------------|--|
| P-1     | 43,702             | 566.13         | 0.00                | 1.00                    |  |
| P-2     | 55,261             | 743.00         | 0.00                | 1.00                    |  |
| P-3     | 50,641             | 712.80         | 0.00                | 1.00                    |  |
| P-4     | 0                  | 0.00           | 743.00              | 0.00                    | Unit Upgrade   |
| P-5     | 52,590             | 737.95         | 0.00                | 1.00                    |  |
| P-6     | 51,743             | 729.05         | 11.38               | 0.98                    | - Analog Datalink Failure (D. Gehling)                     |
| P-7     | 50,494             | 708.40         | 0.00                | 1.00                    |  |
| P-8     | 48,333             | 646.88         | 0.00                | 1.00                    |  |
| P-9     | 49,211             | 662.52         | 0.00                | 1.00                    |  |
| P-10    | 47,618             | 670.68         | 3.83                | 0.99                    | Removing rotational device. Dispatch Informed (D. Gehling) |

(G) Availability Factor =

$$\frac{\text{Hours in Month} - \text{Hours Down for Maint.}}{\text{Hours in Month}}$$

$$\text{Plant Factor} = \frac{\text{(B)} * 100}{\text{(A)} * \text{Hours in Month}}$$

$$\text{Utilization Factor} = \frac{\text{(C)}}{\text{(A)}} * 100$$

$$\text{Water Factor} = \frac{\text{(D)}}{\text{(D)} + \text{(E)} + \text{(F)}} * 100$$



# Plant Service Interruptions

Plant: PRIEST RAPIDS

March, 2022

| Date       | Time | Duration |          | Unit | Circuit Breaker Tripped | Relays Operated |       | Remarks  |
|------------|------|----------|----------|------|-------------------------|-----------------|-------|--|
|            |      | Month    | Total    |      |                         | Type            | Cause |  |
| 03/01/2022 | 0000 | 743:00   | 12016:47 | P-4  | 432                     | OTH             | 11    | Unit Upgrade   |
| 03/03/2022 | 2048 | 11:23    | 11:23    | P-6  | 632                     | MAN             | 6     | - Analog Datalink Failure (D. Gehling)                     |
| 03/08/2022 | 0800 | 3:50     | 3:50     | P-10 | 1032                    | MAN             | 11    | Removing rotational device. Dispatch Informed (D. Gehling) |

Relay Types: MAN - Manual    OC - Overcurrent    DIFF - Differential    FREQ - Frequency    GRD - Ground    V - Voltage    THER - Thermal    TRIP - 86E Trip    OTH - Other

Causes:    1 Lightning    2 All other weather    3 Trees, etc. into line    4 Malicious damage    5 Line down    6 Defective equipment    7 Inadequate system    8 Trouble on another system    9 Operation error    10 Relay error    12 Cause unknown    11 Prearranged outage    13 Computer control    14 Other

**PRIEST RAPIDS POWERPLANT GENERATION SUMMARY  
MARCH 2022**

| UNIT | 100% RATED<br>INSTALLED CAPACITY | GENERATION (MWH) |         |            | MAINTENANCE HOURS |  |
|------|----------------------------------|------------------|---------|------------|-------------------|--|
|      |                                  | CURRENT          | YTD     | CURRENT    | YTD               |  |
| P-1  | 95.00                            | 43,702           | 157,488 | 0.00       | 39.72             |  |
| P-2  | 95.00                            | 55,261           | 165,392 | 0.00       | 39.80             |  |
| P-3  | 95.00                            | 50,641           | 160,309 | 0.00       | 34.65             |  |
| P-4  | 95.00                            | 0                | 0       | 743.00 (A) | 2,159.00          |  |
| P-5  | 95.00                            | 52,590           | 165,803 | 0.00       | 0.00              |  |
| P-6  | 95.00                            | 51,743           | 164,886 | 11.38 (B)  | 11.38             |  |
| P-7  | 95.00                            | 50,494           | 163,339 | 0.00       | 0.00              |  |
| P-8  | 95.00                            | 48,333           | 157,746 | 0.00       | 39.87             |  |
| P-9  | 95.00                            | 49,211           | 159,603 | 0.00       | 7.65              |  |
| P-10 | 95.00                            | 47,618           | 159,385 | 3.83 (C)   | 11.48             |  |

**PROJECT TOTAL 950.00 449,593 1,453,951 758.21 2,343.55**  
**PLANT USE: 1,029 2,411**  
**NET GENERATION: 448,564 1,451,540**

**PLANT RATING CURVE CAPACITY BASED ON 40 YR WATER**

912,300

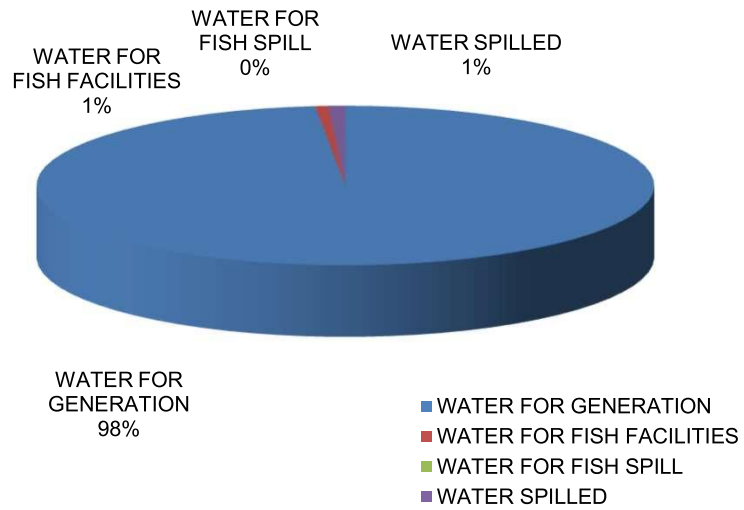
- (A) Turbine/generator rehabilitation
- (B) Analog dataink failure
- (C) Removing rotational device

**PRIEST RAPIDS POWERPLANT  
WATER UTILIZATION  
MARCH 2022**

|                           | WATER UTILIZED (ACRE FEET) | EQUIVALENT ENERGY (MWH) |
|---------------------------|----------------------------|-------------------------|
| TOTAL RIVER FLOW          | 6,796,030                  | 456,740                 |
| WATER FOR GENERATION      | 6,689,660                  | 449,591                 |
| WATER FOR FISH FACILITIES | 47,480                     | 3,191                   |
| WATER FOR FISH SPILL      | 0                          | 0                       |
| WATER SPILLED             | 58,890                     | 3,958                   |

# PRIEST RAPIDS WATER UTILIZATION REPORT MARCH 2022

## MONTHLY WATER USAGE



## YEAR TO DATE WATER USAGE

