FYI Items
July 14, 2020

Mr. Chet Perry / Mr. Jim Schroeder
PacifiCorp

Mr. Jay Hiner / Jonathan Hart
Eugene Water & Electric

Mr. Rahul Venkatesh
Puget Sound Energy, Inc.

Mr. Rick Applegate
Tacoma Power

Ms. Robin Cross
City of Seattle, City Light Dept.

Mr. Steve Lentini
Avista Corp.

Mr. Todd McConachie
Portland General Electric

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

Mr. Matt Boast
Kittitas County PUD

Ms. Jaime Phillips
McMinnville Water & Light

Mr. Mike Watkins
City of Milton-Freewater

Mr. Bob Essex
Cowlitz PUD

Subject: Priest Rapids Project Highlights for June

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

**Wanapum Generator Operations/Turbine Restoration:**

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

W-4 was removed from service July 15, 2019 for generator/governor replacement and turbine overhaul. W-4 is scheduled to return to service August 26, 2020.

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

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

P-8 was removed from service April 1, 2019 due to turbine/generator rehabilitation and governor replacement. P-8 is scheduled to return to service August 7, 2020.
GENERATION STATUS REPORTS: June Generation Reports are attached for your information and use.

ELECTRIC SERVICE INTERRUPTION REPORTS: June 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, September 16th 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: ccc

Attachments

C: HED Main Files 1.1.1.2
   Tom Flint
   Dale Walker
   Larry Schaapman
   Judy Wilson
   Nelson Cox
   Chief Operator/Wanapum
   Chief Operator/Priest Rapids

Kevin Marshall
   Rich Wallen
   Dale Campbell
   Tony Hardenbrook
   Ty Ehrman
   Phillip Law
   Bonnie Overfield
   Ben Pearson
Public Utility District of Grant County, Ephrata, Washington
MONTHLY REPORT OF POWER OPERATIONS

June 2020

Installed Capacity (A) 1,111,800 kW

Gross Generation (B) 499,306,200 kWh

Max. Hourly Generation (C) 787,800 kWh

Time of Max. Hourly Gen. 06/20/2020 1800

Plant Factor 62.37%

Utilization Factor 70.86%

Water Factor: 56.93%

Hours Plant Operated: 720

Plant Use 541,200 kWh

Net Generation 498,765,000 kWh

Water for Generation (D) 7,471,840 A.F.

Water Bypassed (E) 5,534,630 A.F.

Water for Fish (F) 119,100 A.F.

Average Hydraulic Head: 75.4 Feet

UNIT SERVICE RECORD

<table>
<thead>
<tr>
<th>Unit No</th>
<th>Monthly Gen. (mWH)</th>
<th>Hrs. Operation</th>
<th>Hrs Down For Maint.</th>
<th>Availability Factor (G)</th>
<th>Nature of Maintenance</th>
</tr>
</thead>
<tbody>
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<tr>
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<tr>
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<td>0.99</td>
<td>Transformer B Outage for W-04 GCB Testing Generator, Governor, and Exciter Replacement</td>
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<tr>
<td>W-4</td>
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<td>W-5</td>
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<td>W-6</td>
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<td>W-7</td>
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<td>W-8</td>
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<td>W-9</td>
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<td>W-10</td>
<td>57,658</td>
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<td>1.00</td>
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</tbody>
</table>

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

Utilization Factor = \(\frac{(C)}{(A)} \times 100\)

Water Factor = \(\frac{(D)}{(D) + (E) + (F)} \times 100\)

(G) Availability Factor = \(\frac{\text{Hours in Month} - \text{Hours Down for Maint.}}{\text{Hours in Month}}\)
<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Month</th>
<th>Total</th>
<th>Unit</th>
<th>Circuit Breaker</th>
<th>Relays Operated</th>
<th>Cause</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>06/01/2020</td>
<td>0000</td>
<td>720:00</td>
<td>8442:00</td>
<td>W-4</td>
<td>W-432</td>
<td>MAN 11</td>
<td>Generator, Governor, and Exciter Replacement</td>
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<tr>
<td>06/16/2020</td>
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<td>4:34</td>
<td>4:34</td>
<td>W-3</td>
<td>W-332</td>
<td>MAN 11</td>
<td>Transformer B Outage for W-04 GCB Testing</td>
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</tbody>
</table>

**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
11. Cause unknown
12. Prearranged outage
13. Computer control
14. Other
# WANAPUM POWERPLANT GENERATION SUMMARY

**JUNE 2020**

<table>
<thead>
<tr>
<th>UNIT</th>
<th>100% RATED INSTALLED CAPACITY</th>
<th>100% RATED CURRENT</th>
<th>100% RATED YTD</th>
<th>MAINTENANCE HOURS</th>
<th>MAINTENANCE HOURS</th>
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<tbody>
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<td>W-1</td>
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<td>276,746</td>
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<td>0</td>
<td>720.00 (B)</td>
<td>4,367.00</td>
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<td>W-5</td>
<td>112.00</td>
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<td>239,119</td>
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<td>W-6</td>
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<tr>
<td>W-7</td>
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<td>W-8</td>
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<td>56,799</td>
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<td>57,328</td>
<td>304,914</td>
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<td>W-10</td>
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<td>57,658</td>
<td>310,777</td>
<td>0.00</td>
<td>32.30</td>
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</table>

**PROJECT TOTAL**

<table>
<thead>
<tr>
<th>PROJECT TOTAL</th>
<th>1111.80</th>
<th>499,307</th>
<th>2,685,400</th>
<th>724.57</th>
<th>4,694.73</th>
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**PLANT USE:**

<table>
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<th>PLANT USE:</th>
<th>541</th>
<th>3,777</th>
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**NET GENERATION:**

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<th>NET GENERATION:</th>
<th>498,766</th>
<th>2,681,623</th>
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**PLANT RATING CURVE CAPACITY BASED ON 40 YR WATER**

996,910

(A) Transformer B Outage for W04 GCB Testing
(B) Generator, governor, and exciter replacement
## WANAPUM POWERPLANT
### WATER UTILIZATION
#### JUNE 2020

<table>
<thead>
<tr>
<th>Description</th>
<th>Water Utilized (Acre Feet)</th>
<th>Equivalent Energy (MWh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total River Flow</td>
<td>13,125,570</td>
<td>877,117</td>
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<tr>
<td>Water for Generation</td>
<td>7,471,840</td>
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<tr>
<td>Water for Fish Facilities</td>
<td>119,100</td>
<td>7,959</td>
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<tr>
<td>Water for Fish Spill</td>
<td>1,222,394</td>
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</tr>
<tr>
<td>Water Spilled</td>
<td>4,312,236</td>
<td>288,165</td>
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</table>
Wanapum Water Utilization Report
June 2020

MONTHLY WATER USAGE

WATER FOR GENERATION: 57%
WATER FOR FISH FACILITIES: 1%
WATER FOR FISH SPILL: 9%
WATER SPILLED: 33%

YEAR TO DATE WATER USAGE

WATER FOR GENERATION: 78%
WATER FOR FISH FACILITIES: 1%
WATER FOR FISH SPILL: 6%
WATER SPILLED: 15%
### UNIT SERVICE RECORD

<table>
<thead>
<tr>
<th>Unit No</th>
<th>Monthly Gen. (mWH)</th>
<th>Hrs. Operation</th>
<th>Hrs Down For Maint.</th>
<th>Availability Factor (G)</th>
<th>Nature of Maintenance</th>
</tr>
</thead>
<tbody>
<tr>
<td>P-1</td>
<td>54,530</td>
<td>720.00</td>
<td>0.00</td>
<td>1.00</td>
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</tr>
<tr>
<td>P-2</td>
<td>53,288</td>
<td>720.00</td>
<td>0.00</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>P-3</td>
<td>51,914</td>
<td>720.00</td>
<td>0.00</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>P-4</td>
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<td>P-7</td>
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<td>1.00</td>
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<tr>
<td>P-8</td>
<td>0</td>
<td>0.00</td>
<td>720.00</td>
<td>0.00</td>
<td>Turbine Replacement and Generator Upgrade.</td>
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<tr>
<td>P-9</td>
<td>44,526</td>
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<td>1.00</td>
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<tr>
<td>P-10</td>
<td>49,005</td>
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<td>0.00</td>
<td>1.00</td>
<td></td>
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</table>

### Equations

- **Plant Factor** = \( \frac{(B) \times 100}{(A) \times \text{Hours in Month}} \)
- **Utilization Factor** = \( \frac{(C)}{(A)} \times 100 \)
- **Water Factor** = \( \frac{(D)}{(D) + (E) + (F)} \times 100 \)

### Formulas

- **(G) Availability Factor** = \( \frac{\text{Hours in Month} - \text{Hours Down for Maint.}}{\text{Hours in Month}} \)
### Plant Service Interruptions

**Plant:** PRIEST RAPIDS

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Month</th>
<th>Total</th>
<th>Unit</th>
<th>Circuit Breaker</th>
<th>Relays Operated</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>06/01/2020</td>
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<td>720:00</td>
<td>10961:43</td>
<td>P-8</td>
<td>832</td>
<td>MAN 11</td>
<td>Turbine Replacement and Generator Upgrade.</td>
</tr>
</tbody>
</table>

**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
- 11 Cause unknown
- 12 Prearranged outage
- 13 Computer control
- 14 Other
## PRIEST RAPIDS POWERPLANT GENERATION SUMMARY
### JUNE 2020

<table>
<thead>
<tr>
<th>UNIT</th>
<th>100% RATED</th>
<th>INSTALLED CAPACITY</th>
<th>CURRENT</th>
<th>YTD</th>
<th>MAINTENANCE HOURS</th>
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</thead>
<tbody>
<tr>
<td>P-1</td>
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<td>54,530</td>
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<td>39.13</td>
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<tr>
<td>P-8</td>
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<td>0</td>
<td>720.00 (A)</td>
<td>4,367.00</td>
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<tr>
<td>P-9</td>
<td>97.80</td>
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<td>P-10</td>
<td>95.00</td>
<td>49,005</td>
<td>286,269</td>
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</table>

**PROJECT TOTAL**: 955.60 463,738 2,548,805 720.00 4,746.10

**PLANT USE**: 1,321 6,217

**NET GENERATION**: 462,417 2,542,588

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

912,300

(A) P-08 turbine/generator rehabilitation
<table>
<thead>
<tr>
<th>Description</th>
<th>Acre Feet</th>
<th>Energy (MWh)</th>
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</thead>
<tbody>
<tr>
<td>TOTAL RIVER FLOW</td>
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<td>824,562</td>
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<tr>
<td>WATER FOR GENERATION</td>
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<tr>
<td>WATER FOR FISH FACILITIES</td>
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<tr>
<td>WATER FOR FISH SPILL</td>
<td>1,783,727</td>
<td>110,925</td>
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<tr>
<td>WATER SPILLED</td>
<td>3,924,063</td>
<td>244,026</td>
</tr>
</tbody>
</table>
PRIEST RAPIDS WATER UTILIZATION REPORT
JUNE 2020

MONTHLY WATER USAGE

- WATER FOR GENERATION: 56%
- WATER FOR FISH FACILITIES: 1%
- WATER FOR FISH SPILL: 13%
- WATER SPILLED: 30%

YEAR TO DATE WATER USAGE

- WATER FOR GENERATION: 79%
- WATER FOR FISH FACILITIES: 1%
- WATER FOR FISH SPILL: 8%
- WATER SPILLED: 12%