

**FYI Items**

July 18, 2019

Mr. Chet Perry / Mr. Jim Schroeder  
PacifiCorp

Mr. Bruce True  
Portland General Electric

Mr. Jay Hiner / Jonathan Hart  
Eugene Water & Electric

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

Mr. Rahul Venkatesh  
Puget Sound Energy, Inc.

Mr. Matt Boast  
Kittitas County PUD

Mr. Rick Applegate  
Tacoma Power

Ms. Jaime Phillips  
McMinnville Water & Light

Ms. Hina Arai  
City of Seattle, City Light Dept.

Mr. Mike Watkins  
City of Milton-Freewater

Mr. Steve Lentini  
Avista Corp.

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, 4, 5, 6, 8, 9, 10: Operational.

W-7 was removed from service December 11, 2018 for generator rotor rebuild and governor replacement. W-7 was returned to service July 11, 2019.

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

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

P-8 was removed from service April 1, 2019 due to turbine/generator rehabilitation. P-8 is scheduled to return to service June 17, 2020.

P-9 was forced out on May 8, 2019 for excessive oil head vibration. P-9 is expected to return to service July 23, 2019.

Priest Rapids Project Highlights  
July 18, 2019

**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 25<sup>th</sup> at 10:00 a.m. at the District's Ephrata Headquarters Building in Conference Room "E".

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

Sincerely,



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

DC:cec

Attachments

C:	HED Main Files 1.1.1.2	Kevin Marshall
	Tom Flint	Rich Wallen
	Dale Walker	Dale Campbell
	Larry Schaapman	Mark Beattie
	Judy Wilson	Ty Ehrman
	Nelson Cox	Phillip Law
	Chief Operator/Wanapum	Bonnie Overfield
	Chief Operator/Priest Rapids	Craig Marian

# Wanapum

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

**June 2019**

Installed Capacity (A)	1,111,800	kW	Hours Plant Operated:	720	
Gross Generation (B)	415,135,100	kWH	Plant Use	637,700	kWH
Max. Hourly Generation (C)	796,100	kWH	Net Generation	414,497,400	kWH
Time of Max. Hourly Gen.	06/07/2019 0100		Water for Generation (D)	6,035,770	A.F.
Plant Factor	51.86%		Water Bypassed (E)	1,247,280	A.F.
Utilization Factor	71.60%		Water for Fish (F)	125,100	A.F.
Water Factor:	81.47%		Average Hydraulic Head:	77.3	Feet

### UNIT SERVICE RECORD

Unit No	Monthly Gen. (mWH)	Hrs. Operation	Hrs Down For Maint.	Availability Factor (G)	Nature of Maintenance
W-1	20,084	250.55	0.00	1.00	
W-2	55,904	705.32	0.00	1.00	
W-3	31,900	403.42	0.00	1.00	
W-4	41,807	534.93	0.00	1.00	
W-5	47,456	609.48	0.00	1.00	
W-6	54,586	697.40	0.00	1.00	
W-7	695	0.00	720.00	0.00	Generator Rotor Replacement and Unit Governor Replacement
W-8	51,503	661.22	1.00	1.00	W-7 PT Testing
W-9	56,150	711.47	0.00	1.00	
W-10	55,050	696.90	0.00	1.00	

(G) Availability Factor =  $\frac{\text{Hours in Month} - \text{Hours Down for Maint.}}{\text{Hours in Month}}$

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

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

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

# Plant Service Interruptions

Plant: WANAPUM

June, 2019

Date	Time	Duration		Unit	Circuit Breaker Tripped	Relays Operated		Remarks
		Month	Total			Type	Cause	
06/01/2019	0000	720:00	4839:49	W-7	W-732	MAN	11	Generator Rotor Replacement and Unit Governor Replacement
06/19/2019	0857	1:00	1:00	W-8	W-832	MAN	11	W-7 PT Testing

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  
JUNE 2019**

UNIT	GENERATION (MWH)			MAINTENANCE HOURS	
	100% RATED INSTALLED CAPACITY	CURRENT	YTD	CURRENT	YTD
W-1	112.00	20,084	197,010	0.00	34.42
W-2	112.00	55,904	288,782	0.00	94.48
W-3	112.00	31,900	216,549	0.00	11.10
W-4	103.80	41,807	253,468	0.00	12.22
W-5	112.00	47,456	193,883	0.00	11.60
W-6	112.00	54,586	299,769	0.00	12.44
W-7	112.00	695	695	720.00 (A)	4,343.00
W-8	112.00	51,503	280,449	1.00 (B)	18.02
W-9	112.00	56,150	285,742	0.00	11.35
W-10	112.00	55,050	276,108	0.00	9.22
<b>PROJECT TOTAL:</b>	<b>1111.80</b>	<b>415,135</b>	<b>2,292,455</b>	<b>721.00</b>	<b>4,557.85</b>
<b>PLANT USE:</b>		<b>638</b>	<b>4,228</b>		
<b>NET GENERATION:</b>		<b>414,497</b>	<b>2,288,227</b>		

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

996,910

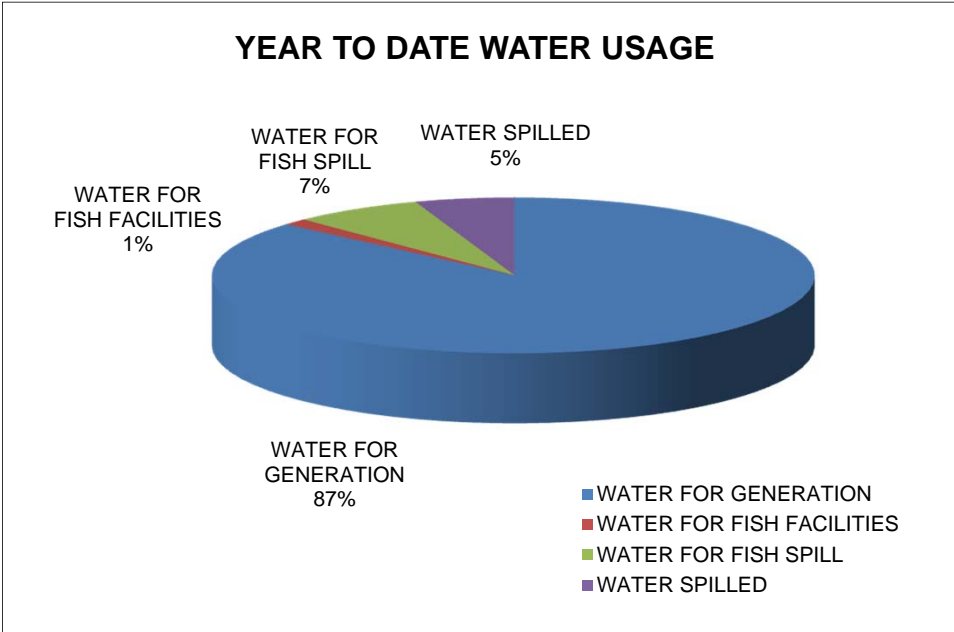
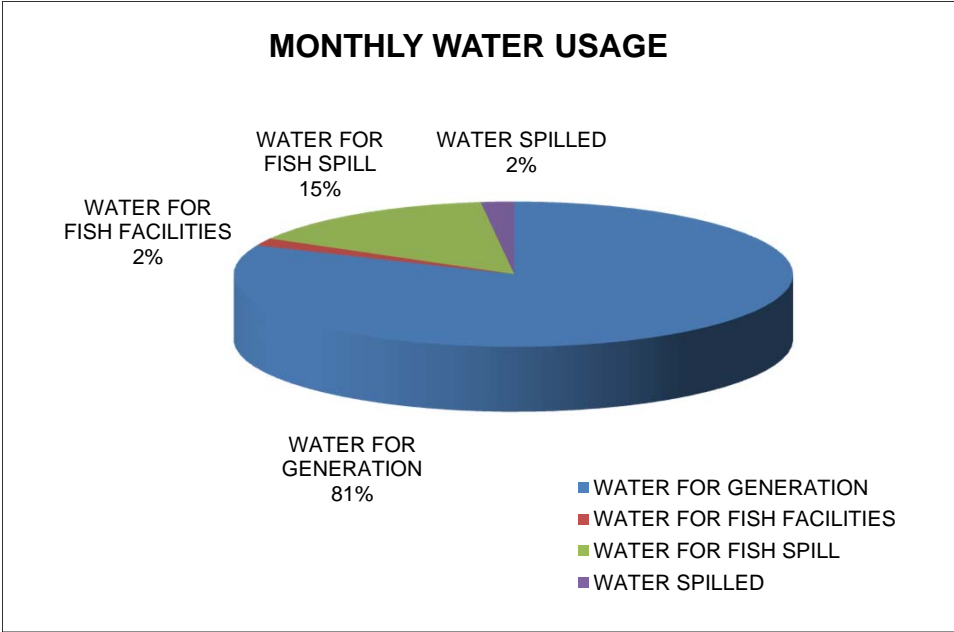
(A) Generator Rotor/Unit Governor Replacement

(B) W-7 PT testing

**WANAPUM POWERPLANT  
WATER UTILIZATION  
JUNE 2019**

	WATER UTILIZED (ACRE FEET)	EQUIVALENT ENERGY (MWH)
TOTAL RIVER FLOW	7,408,150	509,526
WATER FOR GENERATION	6,035,770	415,135
WATER FOR FISH FACILITIES	125,100	8,604
WATER FOR FISH SPILL	1,105,137	76,010
WATER SPILLED	142,143	9,776

# Wanapum Water Utilization Report June 2019





# Priest Rapids

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

June 2019

Installed Capacity (A)	955,600	kW	Hours Plant Operated:	720	
Gross Generation (B)	369,665,800	kWH	Plant Use	1,336,600	kWH
Max. Hourly Generation (C)	704,400	kWH	Net Generation	368,329,200	kWH
Time of Max. Hourly Gen.	06/26/2019 0700		Water for Generation (D)	5,600,560	A.F.
Plant Factor	53.73%		Water Bypassed (E)	1,555,130	A.F.
Utilization Factor	73.71%		Water for Fish (F)	65,590	A.F.
Water Factor:	77.56%		Average Hydraulic Head:	76.1	Feet

### UNIT SERVICE RECORD

Unit No	Monthly Gen. (mWH)	Hrs. Operation	Hrs Down For Maint.	Availability Factor (G)	Nature of Maintenance
P-1	50,126	720.00	0.00	1.00	
P-2	50,907	702.73	0.00	1.00	
P-3	47,713	684.55	9.03	0.99	to Investigate Thrust Brearing Oil Leak. (M. Stussy) Unit will not sync, Grounding Issue, Notified Dispatch (Bingham)
P-4	48,632	680.40	0.02	1.00	Tripped on a low gov oil alarm due to station service interruption
P-5	49,440	695.40	1.83	1.00	Per Dispatch Request to Facilitate work on Line 2 A-1000 (Mike Stussy) Zone 2 Line 2 B Phase to ground
P-6	45,804	657.52	1.83	1.00	Per Dispatch Request to Facilitate work on Line 2 A-1000 (Mike Stussy) Zone 2 Line 2 B Phase to ground
P-7	40,650	579.82	1.83	1.00	Fire in Smyrna tripped Line 2 (Stussy) Per Dispatch Request to Facilitate work on Line 2 A-1000 (Mike Stussy)
P-8	0	0.00	720.00	0.00	Turbine Replacement and Generator Upgrade.
P-9	0	0.00	720.00	0.00	Excessive Vibration
P-10	36,395	517.12	0.02	1.00	Line 3 Transfer Tripped Due to Fire Near Wanapum Switchyard.

# Priest Rapids

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

June 2019

(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

June, 2019

Date	Time	Duration		Unit	Circuit Breaker Tripped	Relays Operated		Remarks
		Month	Total			Type	Cause	
06/01/2019	0000	720:00	2177:43	P-8	832	MAN	11	Turbine Replacement and Generator Upgrade.
06/01/2019	0000	720:00	1279:47	P-9	932	MAN	6	Excessive Vibration
06/03/2019	2256	0:01	0:01	P-10	1032	OTH	14	Line 3 Transfer Tripped Due to Fire Near Wanapum Switchyard.
06/04/2019	1342	1:43	1:43	P-5	532	OTH	5	Zone 2 Line 2 B Phase to ground
06/04/2019	1342	1:43	1:43	P-6	632	OTH	5	Zone 2 Line 2 B Phase to ground
06/04/2019	1342	1:43	1:43	P-7	732	MAN	14	Fire in Smyrna tripped Line 2 (Stussy)
06/05/2019	1407	0:07	0:07	P-7	732	MAN	14	Per Dispatch Request to Facilitate work on Line 2 A-1000 (Mike Stussy)
06/05/2019	1407	0:07	0:07	P-6	632	MAN	14	Per Dispatch Request to Facilitate work on Line 2 A-1000 (Mike Stussy)
06/05/2019	1407	0:07	0:07	P-5	532	MAN	14	Per Dispatch Request to Facilitate work on Line 2 A-1000 (Mike Stussy)
06/05/2019	1443	0:01	0:01	P-4	432	OTH	9	Tripped on a low gov oil alarm due to station service interruption
06/19/2019	0628	6:52	6:52	P-3	332	MAN	6	Unit will not sync, Grounding Issue, Notified Dispatch (Bingham)
06/24/2019	0905	2:10	2:10	P-3	332	OTH	14	to Investigate Thrust Bearing Oil Leak. (M. Stussy)

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  
JUNE 2019**

UNIT	GENERATION (MWH)			MAINTENANCE HOURS	
	100% RATED INSTALLED CAPACITY	CURRENT	YTD	CURRENT	YTD
P-1	95.00	50,126	258,653	0.00	13.29
P-2	97.80	50,907	179,643	0.00	1,838.52
P-3	95.00	47,713	284,659	9.03 (A)	129.01
P-4	95.00	48,632	224,198	0.02 (B)	43.24
P-5	95.00	49,440	233,566	1.83 (C, D)	113.33
P-6	95.00	45,804	289,646	1.83 (C, D)	4.83
P-7	95.00	40,650	259,387	1.83 (C, E)	11.56
P-8	95.00	0	105,618	720.00 (F)	2,260.29
P-9	97.80	0	129,087	720.00 (G)	2,084.81
P-10	95.00	36,395	221,654	0.02 (H)	9.10
<b>PROJECT TOTAL:</b>	<b>955.60</b>	<b>369,667</b>	<b>2,186,111</b>	<b>1,454.56</b>	<b>6,507.98</b>
<b>PLANT USE:</b>		<b>1,337</b>	<b>6,499</b>		
<b>NET GENERATION:</b>		<b>368,330</b>	<b>2,179,612</b>		

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

912,300

- (A) Investigate thrust bearing oil leak and grounding issue. Unit will not sync notified dispatch.
- (B) Tripped low governor oil alarm due to station service interruption.
- (C) Dispatch request to facilitate work on Line 2 A-1000.

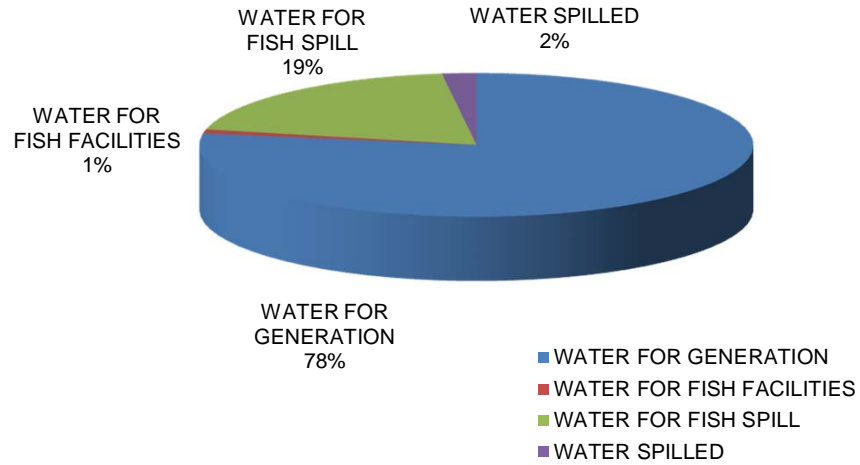
- (D) Zone 2 Line 2 B phase to ground.
- (E) Fire in Smyrna tripped Line 2.
- (F) P08 Turbine/Generator Rehabilitation.
- (G) Excessive vibration.
- (H) Line 3 transfer tripped due to fire near Wanapum switchyard.

**PRIEST RAPIDS POWERPLANT  
WATER UTILIZATION  
JUNE 2019**

	WATER UTILIZED (ACRE FEET)	EQUIVALENT ENERGY (MWH)
TOTAL RIVER FLOW	7,221,280	476,642
WATER FOR GENERATION	5,600,560	369,666
WATER FOR FISH FACILITIES	65,590	4,329
WATER FOR FISH SPILL	1,410,808	93,121
WATER SPILLED	144,322	9,526

# PRIEST RAPIDS WATER UTILIZATION REPORT JUNE 2019

## MONTHLY WATER USAGE



## YEAR TO DATE WATER USAGE

