



## Department of Energy

Bonneville Power Administration  
P.O. Box 3621  
Portland, Oregon 97208-3621

FREEDOM OF INFORMATION ACT PROGRAM

November 6, 2017

In reply refer to: FOIA #BPA-2018-00008-F

Gary Spackman, Director  
Idaho Department of Water Resources  
P.O. Box 83720  
Boise, Idaho 83720-0098  
[gary.spackman@idwr.idaho.gov](mailto:gary.spackman@idwr.idaho.gov)

Dear Mr. Spackman:

This is a final response to your request for Bonneville Power Administration (BPA) records under the Freedom of Information Act (FOIA), 5 U.S.C. § 552. Your records request was received by the U.S. Bureau of Reclamation, Snake River Office, on September 11, 2017 and was assigned tracking number BOR-2017-00340 (PN-17-39). It was transferred to BPA on September 29, 2017 and was assigned the Department of Energy (DOE) tracking number BPA-2018-00008-F. Please use the BPA tracking number in any future communications regarding your FOIA request.

### **Request**

You requested the following:

"I request a copy of the Bonneville Power Administration's "standing operation order of 2013" for power system stabilization cited on slide eighteen of the PowerPoint presentation titled "Upper Snake Operations Review" presented by Corey Loveland at the Upper Snake Operations Meeting on August 3, 2017, at the USBR Upper Snake Field Office in Heyburn, Idaho."

### **Response**

The Bureau of Reclamation located six pages of material responsive to your request, and they referred the document to our office on October 2, 2017, for review/release determination. We reviewed this document, and we are releasing it in full.

In accord with the FOIA, BPA is herein releasing 6 pages of responsive agency records to you with no redactions. Pursuant to 10 C.F.R. § 1004.7(b)(2), I am the agency official responsible for the records release and the exemption determinations described above.

### **Fee**

There are no fees associated with this request.

**Appeal**

This decision, as well as the adequacy of the search, may be appealed within 90 calendar days from your receipt of this letter pursuant to 10 C.F.R. § 1004.8. Appeals should be addressed to:

Director, Office of Hearings and Appeals,  
HG-1, L'Enfant Plaza  
U.S. Department of Energy  
1000 Independence Avenue, S.W.  
Washington, D.C. 20585-1615

The written appeal, including the envelope, must clearly indicate that a FOIA appeal is being made. You may also submit your appeal to [OHA.filings@hq.doe.gov](mailto:OHA.filings@hq.doe.gov), including the phrase "Freedom of Information Appeal" in the subject line. The appeal must contain all of the elements required by 10 C.F.R. § 1004.8, including a copy of the determination letter. Thereafter, judicial review will be available to you in the Federal District Court either: 1) in the district where you reside; 2) where you have your principal place of business; 3) where DOE's records are situated; or 4) in the District of Columbia.

You may contact BPA's FOIA Public Liaison, Sarah Westenberg, at the address on this letter header for any further assistance and to discuss any aspect of your request. Additionally, you may contact the Office of Government Information Services (OGIS) at the National Archives and Records Administration to inquire about the FOIA mediation services they offer. The contact information for OGIS is as follows:

Office of Government Information Services  
National Archives and Records Administration  
8601 Adelphi Road-OGIS  
College Park, Maryland 20740-6001  
E-mail: [ogis@nara.gov](mailto:ogis@nara.gov)  
Phone: 202-741-5770; Toll-free: 1-877-684-6448; Fax: 202-741-5769

Questions about this communication may be directed to Jason E. Taylor, FOIA Case Coordinator, at [jetaylor@bpa.gov](mailto:jetaylor@bpa.gov) or 503-230-3537.

Sincerely,



C. M. Frost  
Freedom of Information/Privacy Act Officer

Enclosure: Responsive document

**CRITICAL INFORMATION - CONTROLLED DISTRIBUTION****BONNEVILLE POWER ADMINISTRATION  
SYSTEM DISPATCHER  
STANDING ORDER NO. 328****Teton Area Voltage Support**

Approved:   
Manager, Munro Control Center Dispatch

October 24, 2013  
Date

**I. Purpose**

Winter season voltage support from Palisades will be needed following an outage of the Swan Valley-Goshen 161-kV or Palisades-Snake River 115-kV lines. The winter season in the Teton area is considered to be from November through February, but most importantly it is the period that the Teton area load requires Palisades generation support. Indication of the Teton Area Load is located on the Swan Valley Substation and Idaho Falls Load Area SCADA displays. This quantity is the Lower Valley Power and Light load and is the sum of the flow on the Teton - Lower Valley Energy #1 & 2 115kV lines at Teton and the Palisade - Snake River 115kV line at Palisades. Palisades generation support is needed at load levels above 115MW, with all facilities in service.

Horse Butte Wind provides some voltage support in the Teton Area with the Vesta 100 1.8MW type 3 wind machines when active and three MVar shunt caps at the wind site. A description for Cattle Creek RAS scheme is included in this DSO.

**II. Procedure**

The Teton Area Load has two distinct load levels that require Palisades generation support. These net load levels can only be reached during winter load conditions. When the Teton Area Load monitor exceeds 150 MW, studies have shown that two units are required to be operating at Palisades. Normal winter operation at Palisades is to have two units generating approximately 2.5 MW each, so no alarm is given for this load level. When the Teton Area Load monitor exceeds the 170 MW alarm level, call the Black Canyon Control Center operator and request that a third unit be brought on-line.

Note: All communication is through the Black Canyon Control Center operator who will in-turn coordinate with the Palisades Dam operator.

The added unit should be operating in the condensing mode at zero MVAR or less (bucking). This will allow as many area shunt capacitors to be inserted as possible, and greater Palisades unit dynamic reactive boost capability for a critical contingency.

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Inform the operator that:

- This is not an emergency but a preventive measure.
- The third unit should generate close to zero MVARs of reactive power and as much real power as possible.
- The third unit should remain on until the Load monitor drops below 160 MW and the second unit should remain on until the Load monitor drops below 140 MW. Note: The second unit will, most likely, remain on throughout the winter season.
- The third unit is intended to operate as a synchronous condenser to support voltages in the event of a sudden and sustained voltage drop.

During the Winter Season: If a permanent outage of the Swan Valley-Goshen or Goshen-Drummond 161-kV line, or Swan Valley-Teton #1 or #2 115-kV line occurs, call the Black Canyon Control Center operator and ask him to provide as much real power and available units online as possible at Palisades, up to the maximum allowable limit until further notice. Insert as many area shunt capacitors that can be inserted as possible, so that Palisades units have greater dynamic reactive boost capability for the next critical contingency. Insert shunt capacitors in the preferred order described in section III: *Capacitor Switching Coordination*. Once the line is restored, call the Black Canyon Control Center operator and inform him that maximum allowable voltage support is no longer needed.

If a permanent outage of the Palisades-Snake River 115-kV line occurs, the Black Canyon Control Center operator will provide voltage support at Palisades, to the maximum allowable limit and then call MCC to inform of the line outage and action taken. When the Palisades-Snake River line is restored, the Black Canyon Control Center operator will adjust the exciter controls to normal and will then call MCC and inform that the line is restored and voltage control is returned to the normal schedule.

If any permanent outage was to occur, reference Attachment 1 for limit levels. These limits are for informational purpose only to indicate that we are running at a level of risk, and to notify Black Canyon Control Center. This is due to the fact that the only non invasive way to relieve loading is through Palisades units and if they are unavailable, then there is no recourse for levels above the stated limits except load dropping. If we get in this situation efforts need to be maximized to restore the failed facility if there is one.

Cattle Creek RAS unavailable: If the Cattle Creek RAS is unavailable, then Horse Butte Wind plant must be limited to 60MW total.

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### III. Description

Teton Area Load Monitor: This monitor is the indication of the raw area load, which is the real power flow on all lines that serve into the LVP&L system. SCADA displays – Stations\Swan Valley & Areas\Idaho Falls Load Area.

East of Goshen Load Monitor: This monitor is the indication of the net area load, which is the real power flow on all lines east of Goshen that serve the LVP&L and Fall River systems. This net load includes the total of the Palisades and Horse Butte Wind Generation. The net load value will be decreased by an increased Palisades generation and conversely, increased by a decreased Palisades generation. SCADA Stations displays – Goshen & Swan Valley.

The Problem: When the Teton Area Load monitor is at or above the MW value for two units required, the added third Palisades unit will provide improved voltage support in the event of a Swan Valley-Goshen 161-kV or Palisades-Snake River 115-kV outage. The reinforced system with the upgrade of the Goshen-Drummond line to 161-kV operation is capable of serving about 140 MW of actual Lower Valley load. The net load monitor includes the generation at Palisades, which is assumed to be at 5-10 MW through winter seasons, due to U.S.B.R. operating requirements. The peak raw load has reached 190 MW or greater for the 2010-11 winter season. The customer is aware of the problem.

Capacitor Switching Coordination: Teton and Tincup each have two capacitor sections, and Targhee has one capacitor section. Switching coordination following an outage is designed to be by automatic relay action. Targhee capacitors should be switched on (via SCADA) first to allow Teton capacitors to switch on a contingency. For optimal automatic capacitor switching coordination prior to an outage, Targhee capacitors should be SCADA switched on only if the Targhee voltage declines to 115-kV. Targhee capacitors will provide about a 3.4-kV voltage boost at Targhee. Teton capacitors should not be SCADA switched on unless the Teton voltage declines below 115-kV. Each section of Teton capacitors will provide about a 2.5-kV voltage boost. Although Munro Dispatch has control of the Tincup shunt capacitor, SCADA switching of these capacitors should be done only if required after Targhee and Teton capacitors are in. Section 1 of the Tincup capacitors will switch on in 2 seconds if the Tincup voltage drops below 113-kV. If Tincup capacitors are needed, SCADA switch on section 2 so that the faster switching section 1 is available to switch for contingencies. Note: Targhee has a 7.5 second delay at 110-kV and Teton has a 3 second delay on section 1, at 110-kV.

Minimizing Loss of Load: The automatic reclosing times on both the Palisades-Snake River and Swan Valley-Targhee-Teton lines are relatively slow (5 seconds). If an outage occurs, the voltage will instantly drop 12% and cause loss of sensitive load if capacitor switching waits until the test for successful reclosure. For this reason, the capacitor coordination involves fast switching at Tincup (2 seconds) before the attempted line reclosure. If the line successfully recloses, the Tincup capacitors could switch off 9 seconds later.

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SCADA Controlled UVLS from LVP&L: Loads at Hoback, Snake river, Freedom, Grover, Dry Creek, Afton, Kelly, and Moran have under voltage load shedding controlled by LVP&L SCADA. This function is completed by a low voltage alarm, that is fed through their SCADA system (3-5 second scan). If there is a low voltage sensed, then a trip signal is sent to arm the corresponding breakers. Then another 30 second to a minute delay before SCADA sheds the loads. This delay is to allow station regulators to operate. This UVLS system is not factored into the studies that were performed, because the area is prone to rapid voltage collapse. Further analysis will have to be done with the UVLS system and its viability to prevent voltage collapse for the area.

Cattle Creek RAS: Horse Butte Wind plant is interconnected at the Cattle Creek Substation and is tripped in stages by a local RAS. The following describes the conditions needed to trigger the scheme and the responding actions.

**Initial Condition:**

Horse Butte Wind generation above 60MW.

**Triggering Conditions:**

1. Cattle Creek - Goshen 115kV line loading is above 700Amps monitored at Goshen (B705)
2. Palisades - Snake River 115kV line loading is above 700Amps monitored at Palisades (762)
3. Palisades - Swan Valley 115kV line loading is above 700Amps monitored at Palisades (562)
4. Palisades - Swan Valley 115kV line loading is above 635A at Palisades (562) and loss of Swan Valley - Goshen 161kV line.
5. Swan Valley - Cattle Creek & Goshen - Cattle Creek communication path failure in either controller (A or B side) and opposite side N60 controller at Cattle Creek is out of service.
6. Palisades - Cattle Creek Communication path failure in either controller (A or B side) and opposite side N60 controller at Cattle Creek is out of service.

If conditions 1,2, 3, 4, 5 or 6 above are triggered, then

- a. If condition persists for 5 sec, a warning will be sent to Horse Butte.
- b. If condition persists for 30 sec, trip half of the generation.
- c. If condition persists for 60 sec, trip all generation.
- d. If condition persists for 90 sec, open Horse Butte - Cattle Creek.

SCADA Display - RAS/IPS\MCC Misc Gen\Cattle Creek RAS

**CRITICAL INFORMATION - CONTROLLED DISTRIBUTION**

**IV. History**

January 2001: Revised procedure for Palisades operation to include two net load levels for generation support.

November 2002: Revised for the upgrade of the Goshen-Drummond line to 161-kV operation.

December 2003: Updated for the latest study requirements for Palisades generation support to provide a third unit option.

December 2004: Updated for changes in shunt capacitor switching.

May 8, 2012: Updated for new area load data, East of Goshen Load Monitor, LVP&L UVLS and load monitor limits.

October 24, 2013: Updated for Cattle Creek RAS, Change of monitoring to Teton Area Load, and studies for the area.

Technical Approval:	<u><i>John H. Anais</i></u>	<u>October 24, 2013</u>
	Technical Operations Process Manager	Date

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**CRITICAL INFORMATION - CONTROLLED DISTRIBUTION****DSO 328, Attachment 1****Outages and Palisades Units Availability Limits**

Configuration	No Units	1 Unit	2 Units	3 Units	Critical Contingency
All Lines in Service	115	150	170	170	Palisades - Snake River/ Swan Valley - Goshen
Swan Valley - Teton #2 O/S	110	120	125	135	Palisades - Snake River
Palisades - Snake River O/S	105	130	135	135	Swan Valley - Teton #2
Swan Valley - Teton #1 O/S	90	105	115	120	Palisades - Snake River
Goshen - Drummond #1 O/S	70	105	115	125	Swan Valley - Goshen
Swan Valley - Goshen #1 O/S	55	85	95	110	-Palisades - Cattle Creek