

## **Attachment 1**

### **Power System Emergency Action Plan June 6, 2018**

If hydropower generation must be adjusted to support power system reliability, and this adjustment will alter planned fish operations specified in applicable biological opinions (and other guiding operative documents), Bonneville will attempt to implement the actions in the preemptive actions list below, where practicable. If these preemptive actions are unavailable, insufficient, or cannot be implemented in time, then Bonneville may implement additional actions as necessary to address the power system reliability need. The list of contingency actions below are examples of actions that can be taken to address the reliability conditions described in Section 4.4.2 of the FOP.

Where contingency action is necessary, notification to the region will be made as soon as practical, and will follow the protocols for notification, reporting, and documentation as specified in the *Technical Management Team Emergency Protocols, Appendix 1 – Emergency Protocols of the TMT Water Management Plan*.

**Pre-emptive Actions** (not in priority order)

- Purchase Energy and/or reserves at prices up to the applicable FERC WECC price cap.
- Request that Corps and Reclamation return all possible units to service by canceling or postponing scheduled generator or equipment outages (e.g., makes all units available).
- Request the transmission dispatcher consider adjusting transmission system maintenance or other possible actions that would allow increases or decreases in FCRPS generation as appropriate.
- Put into service (on line) all possible generators (e.g., Grand Coulee pump-generators) while preserving sufficient energy storage to maintain reserve capability in subsequent hours
- Reshape flows within objectives at specific projects to meet immediate generation needs e.g., spill upstream projects to position water downstream.
- Cut any interruptible power commitments (e.g., PNCA storage return).
- Request adjustment of pumping schedule at Banks Lake.
- Request variance from non-power operational objectives or limits at FCRPS hydro projects (e.g., forebay draft limits, tailwater rate of change, recreation, irrigation, Treaty fishing, etc.)
- Reduce the amount of balancing reserves provided by the FCRPS to the minimum amount necessary for power system stability and reliability.
- Acquire any resources made available through the issuance of a “Merchant Alert”.
- After exhausting all available reserve sharing opportunities ask the transmission dispatcher to request the Reliability Coordinator to declare an Energy Emergency ALERT 1 when there is concern about sustaining required operating reserves.

## **Contingency Actions List**

(Updated by TMT June 6, 2018)

When routine reliability tools and preemptive actions are insufficient or unavailable to resolve the power system condition, the following is a list of contingency actions that may be taken to provide reserves, voltage, energy or inertia. The order and extent of the actual implementation of the actions in this list will be dictated by each specific condition but if possible the order at each individual dam will be followed. The actions on the list may be updated as necessary through coordination with TMT.

## **April – August period**

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Contingency Actions are prioritized by tier and within each tier.

**Tier 1** - Generate outside 1% up to full load in the following order if possible:

BON PH1

JDA

TDA

MCN (Up to 14.4 kcfs/unit)

IHR

LMN

LGS

LWG

Allow MOP excursion up to: 2 feet at IHR, LMN, LGS, and LWG

### **Tier 2**

LWG 20 kcfs

LGS 30% of flow

IHR 30% of flow

MCN 40% of flow

JDA 30% of flow

TDA 40% of flow

BON 100 kcfs

MCN generate outside 1% up to full load

BON2 operate outside 1% up to full load

Allow MOP excursion up to 3 feet at IHR, LMN, LGS, and LWG

### **Tier 3**

LWG 18 kcfs of spill

LMN 30% of flow

MCN 30% of flow

TDA 30% of flow

BON 95 kcfs

**Tier 4** – Reduce Spill to Spillway weir(s) only

LWG 7 kcfs

LGS 7 kcfs

LMN 7 kcfs

IHR 7 kcfs

TDA 20% of flow

BON 75 kcfs

## Attachment 1 – TMT Emergency Protocols

### **Tier 5**

50 kcfs at BON

### **Tier 6** - Reduce spill to zero

LWG

LGS

LMN

IHR

MCN

JDA

TDA

BON

Shut off sluiceways at TDA, Bonn PH1 first then Bonn CC

### **Sept-March period**

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JDA increase generation outside 1% up to full load

JDA shutoff adult attraction flow

MCN increase generation outside 1% up to full load.

TDA increase generation outside 1% up to full load

TDA shut off sluiceway

BON increase generation outside 1% up to full load

BON shutoff adult attraction flow

BON shut off sluiceway

HGH & LIB modify ramping rates

HGH, LIB, DWR, ALF, GCL: increase project drafts which might impact **April – August period**

## Definitions

Balancing Authority - The responsible entity that integrates resource plans ahead of time, maintains load-interchange-generation balance within a Balancing Authority Area, and supports Interconnection frequency in real time.

Balancing Authority Area - The collection of generation, transmission, and loads within the metered boundaries of the Balancing Authority. The Balancing Authority maintains load resource balance within this area.

BPA Power system – This term includes the Federal Columbia River hydropower projects and transmission system.

Energy Emergency Alerts – Procedures by which a Load Serving Entity can obtain capacity and energy when it has exhausted all other options and can no longer provide its customers' expected energy requirements. An Energy Emergency Alert may be initiated by Reliability Coordinator at 1) the Reliability Coordinator's own request, or 2) upon the request of a Balancing Authority, or 3) upon the request of a Load Serving Entity. 1

Energy Emergency Alert 1 - All available resources in use.

- Balancing Authority, Reserve Sharing Group, or Load Serving Entity foresees or is experiencing conditions where all available resources are committed to meet firm load, firm transactions, and reserve commitments, and is concerned about sustaining its required Operating Reserves, and
- Non-firm wholesale energy sales (other than those that are recallable to meet reserve requirements) have been curtailed.

Energy Emergency Alert 2 – Load management procedures in effect.

- Balancing Authority, Reserve Sharing Group, or Load Serving Entity is no longer able to provide its customer' expected energy requirements, and is designated an Energy Deficient Entity.
- Energy Deficient Entity foresees or has implemented procedures up to, but excluding, interruption of firm load commitments.

Energy Emergency Alert 3 – Firm load interruption imminent or in progress.

- Balancing Authority or Load Serving Entity foresees or has implemented firm load obligation interruption. The available energy to the Energy Deficient Entity, as determined from Alert 2, is only accessible with actions taken to increase transmission transfer capabilities.

Energy Emergency Alert 0 - Termination

- When the Energy Deficient Entity believes it will be able to supply its customers' energy requirements, it shall request of its Reliability Coordinator that the Energy Emergency be terminated.

## Attachment 1 – TMT Emergency Protocols

Merchant Alert – The WECC Merchant Alert is a communication tool that provides load serving entities a means to exchange information regarding issues that could impact the reliable operation of the power system when there is a concern that an entity may not have sufficient resources to meet its obligations.

Redispatch – The intentional incrementing of location-specific generation and the corresponding decrementing of different location-specific generation to mitigate loading on constrained transmission facilities.