Scott Murdock

HONEYVILLE~MALAD STUDY

ROCKY MOUNTAIN POWER
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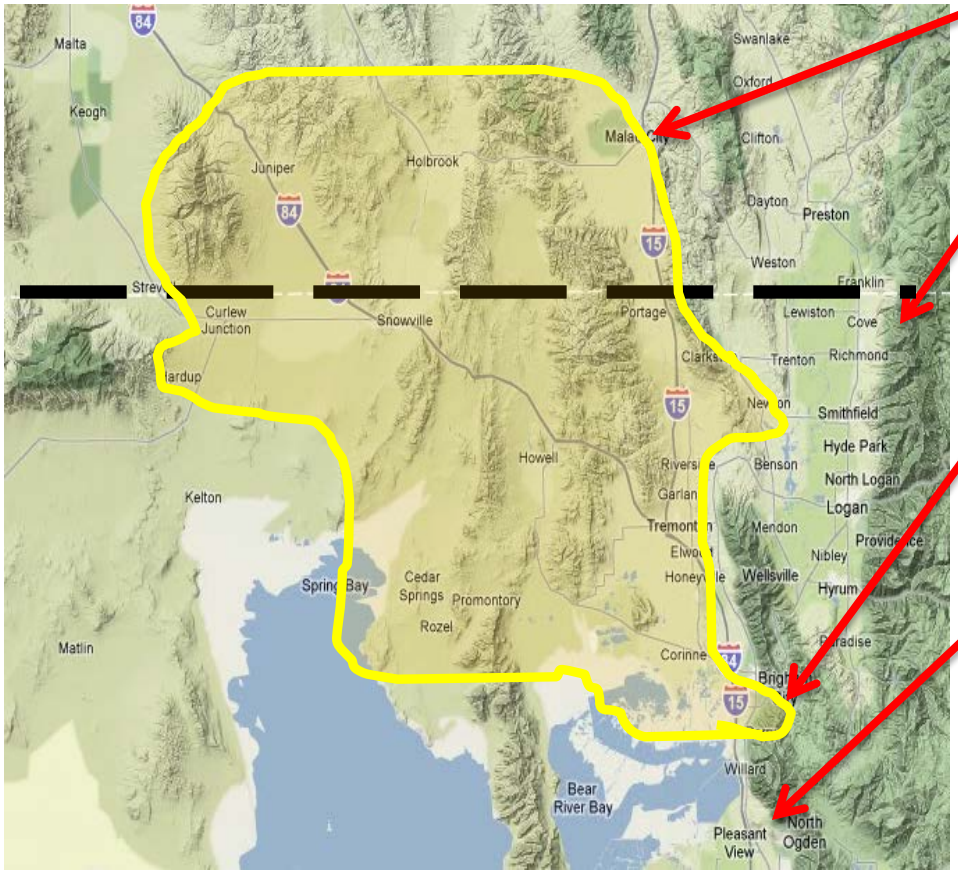
Honeyville~Malad Study Area



Malad City in the North

Dividing line to the East is the Cache Nation Forest

Brigham City to the South

Ben Lomond while outside of the area, is its main source for power.

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Honeyville~Malad Study Info

- There is one Municipality, Brigham City, in the study area
- There is a total of four Transmission Substations (138 kV) ,18 Distribution Substations, ten Transmission Customers
- Transmission Voltages are 138, 69 and 46 kV

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Area Transmission Sources

- Ben Lomond Substation
  - (1) 345-138kV, 448 MVA transformers
  - (2) 230-138kV, 299 MVA transformers
- Treasureton Substation (Idaho Power)

  (2) 230-138kV, 287MVA transformers
- (1) 138kV transmission line delivering power to/from Idaho to Utah.
- (3) 138kV transmission lines delivering power to/from Treasureton to Wheelon
- (3) 138kV transmission lines delivering power to/from Ben Lomond to Wheelon. One line goes through Honeyville.

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Study Service Area

- Urban and agricultural areas:
  - Service to portions of Box Elder, Cache and Oneida counties.
  - Larger Communities served:
  - Tremonton, Malad City and Brigham City (municipality)
  - Largest population center is Brigham City

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Load Growth

- Base System Loads
  - Summer 2009: 238 MW (includes industrial)
  - Winter 2009-10: 192 MW
- Growth
  - Summer: 2.8% (includes industrial)
  - Winter: 1.8%
- Projected System Loads
  - Summer 2014: 295 MW (includes industrial)
  - Winter 2014-15: 225 MW

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Area Generation

- (2) 18.75 MW hydro units (37.5 MW)
- Several small river hydro's near Mantua

- Average combined daily output is ~ 16 MW

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Area Distribution Capacity

The transmission system is normally sectionalized into four operating areas:

Malad, Cutler, Honeyville and Lampo

(4) 138-12.47kV transformers	104 MVA
(1) 138-4.16kV transformers	14 MVA
(2) 69-12.47kV transformers	14 MVA
(15) 46-12.47kV transformers	65 MVA

Total Distribution capacity is **197 MVA**

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N-0 System Improvements

Issue:

Deweyville transformer was overloaded in 2009.

Corrective action:

In 2010 distribution load transfer to Bear River substations.

Estimated Cost:

$25.000

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N-0 System Improvements

Issue:

Bush has regulators which will overload.

Corrective action:

Upgrade regulators at Bush from 250 kVA units to 509 kVA units (2011)

Estimated Cost:

$110,000

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N-0 System Improvements

Issue:

Low voltage on the 46 kV bus at Blue Creek in 2012.

Corrective action:

Review conditions in summer of 2010 and 2011 verify power factor, add distribution capacitors and change no-load taps

Estimated Cost:

$25,000

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N-0: Rocky Mountain Power

Issue:

Snowville 69-12.47 kV substation transformer (5/5.6) will be loaded to 97 % in 2015. It only has two fans.

Corrective action:

Add 3 additional sets of fans, one set on each side.

Estimated Cost:

$ 20,000

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N-1 Issue: 46 kV transmission system:

Issue:

In almost any of the N-1 conditions in the central part of the study area load is required to be shed during peak loading.

Corrective action:

Install a 10.8 Mvar capacitor at Bear River

Estimated Cost:

$1,500,000

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N-1 Conditions

- The fault interrupting ratings shows the calculated bus fault duty at all the substations within the scope of this study.

- Switch 133A on the tap to [customer sub] from the Wheelon – American Falls line has a bad whip and should be replaced as soon as possible.

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Construction Schedule Summary

	2010 $
2010 CONSTRUCTION	
Deweyville: Distribution load transfers. Requires Field Engineering design. Transfers to Bear River.	**$25,000**
2011 CONSTRUCTION	
Bush Substation: Increase Capacity: Install 509 kVA Regulators	**$110,000**
2012 CONSTRUCTION	
Blue Creek Substation: Correct voltage (Distribution capacitors and no-load tap change)	**$25,000**
2013 -2014 CONSTRUCTION	
No construction proposed for this year.	**$0**
2015 CONSTRUCTION	
Snowville substation: Add more fans on the transformer to conform to the FA rating	**$20,000**
Grand Total	**$180,000**

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Honeyville~Malad Study

Any Questions?

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