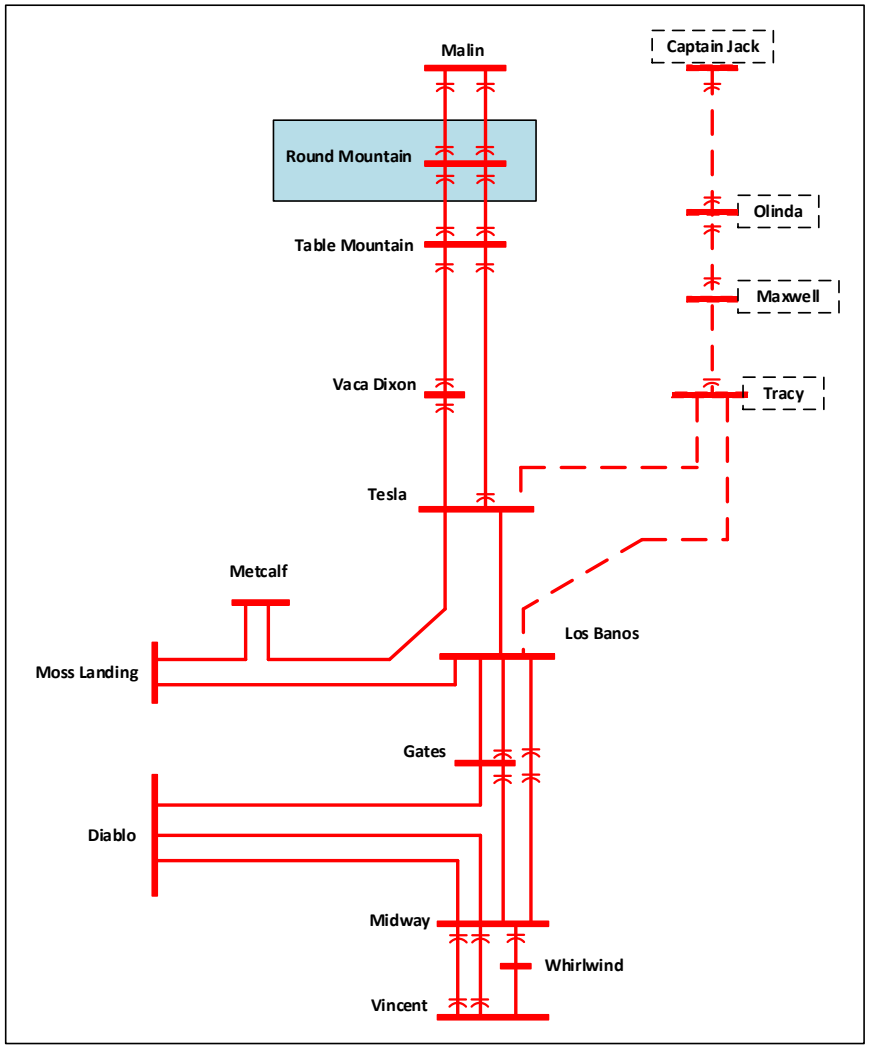
APPENDIX I: Description and Functional Specifications for Transmission Facilities Eligible for Competitive Solicitation

F1 Description and Functional Specifications of Proposed Reliability-Driven Round Mountain Dynamic Voltage Support

F1.1 Description

In the 2018-2019 Transmission Plan, the ISO has identified a reliability-driven need for a +/- 500 MVAR dynamic reactive power support connecting to the Round Mountain 500 kV bus as depicted below. The reactive device is to be installed in a minimum of two blocks independently connected to the 500 kV bus to accommodate maintenance and contingencies of the reactive device.



The reactive power support is required to provide continuous reactive power support. It can be one of the following types of devices: SVC (Static VAR Compensator), STATCOM (Static Synchronous Compensator), or Synchronous Condenser. An appropriately sized and configured inverter associated with a battery storage project could also provide the reactive support. Voltage support requirements would take precedence over any other operation of the battery storage facility. The ISO estimates that the cost of the proposed dynamic reactive power support will approximately cost $160 to 190 million. The project is to be in-service by 2024.

F1.2 Functional Specifications

Dynamic Reactive Power Support Functional Specification

Point of Interconnection: Round Mountain 500 kV bus

Rated Real Power Output: 0 MW

Rated MVAR: +500/-500 at the Round Mountain 500 kV bus

Nominal Terminal Voltage: 500 kV

Latest in Service Date: June 1, 2024

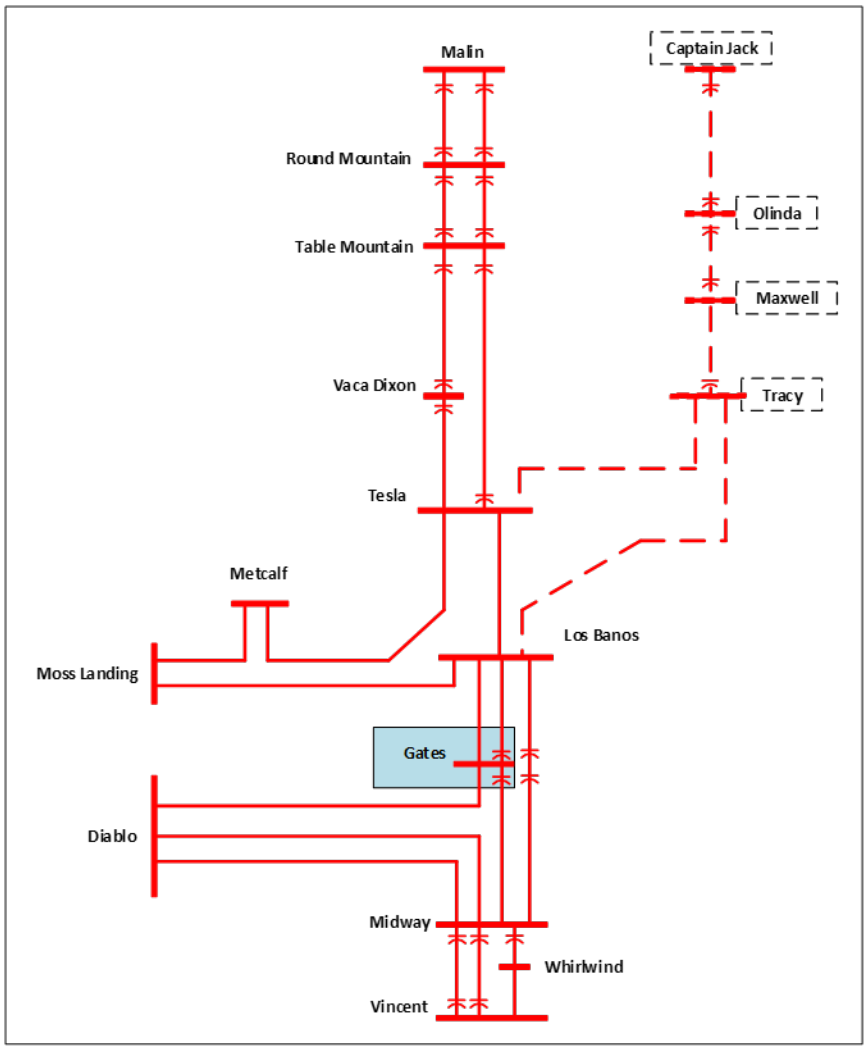
Inverter Ride Through Capability: NERC PRC-024 requirements and NERC industry recommendation on momentary cessation [1]

[1] https://www.nerc.com/pa/rrm/bpsa/Alerts%20DL/NERC_Alert_Loss_of_Solar_Resources_during_Transmission_Disturbance-II_2018.pdf

F2 Description and Functional Specifications of Proposed Reliability-Driven Gates 500 kV Dynamic Voltage Support

F2.1 Description

In the 2018-2019 Transmission Plan, the ISO has identified a reliability-driven need for a +/-800 MVAR dynamic reactive power support connecting to the Gates 500 kV bus as depicted below. The reactive device is to be installed in a minimum of two blocks independently connected to the 500 kV bus to accommodate maintenance and contingencies of the reactive device.



The reactive power support is required to provide continuous reactive power support. It can be one of the following types of devices: SVC (Static VAR Compensator), STATCOM (Static Synchronous Compensator), or Synchronous Condenser. An appropriately sized and configured inverter associated with a battery storage project could also provide the reactive support. Voltage support requirements would take precedence over any other operation of the battery storage facility. The ISO estimates that the proposed reactive power support will approximately cost $210 to $250 million. The project is to be in-service in 2024.

F2.2 Functional Specifications

Dynamic Reactive Power Support Functional Specification

Point of Interconnection: Gates 500 kV bus

Rated Real Power Output: 0 MW

Rated MVAR: +800/-800 at the Gates 500 kV bus

Nominal Terminal Voltage: 500 kV

Latest in Service Date: June 1, 2024

Inverter Ride Through Capability: NERC PRC-024 requirements and NERC industry recommendation on momentary cessation [2]

[2] https://www.nerc.com/pa/rrm/bpsa/Alerts%20DL/NERC_Alert_Loss_of_Solar_Resources_during_Transmission_Disturbance-II_2018.pdf