Combined Feasibility/System Impact Study Report

for

PJM Merchant Transmission Requests
X1-015
"Kenney-Rock Springs 500kV"

&

X4-024
"Rock Springs 500kV"

February, 2012

Preface

The intent of the Combined Feasibility/ System Impact Study is to determine a plan, with approximate cost and construction time estimates, to connect the subject Merchant Transmission interconnection project to the PJM network at a location specified by the Interconnection Customer. As a requirement for interconnection, the Interconnection Customer may be responsible for the cost of constructing: Network Upgrades, which are facility additions, or upgrades to existing facilities, that are needed to maintain the reliability of the PJM system. All facilities required for interconnection of a generation interconnection project must be designed to meet the technical specifications (on PJM web site) for the appropriate transmission owner.

General

H-P Energy Resources, L.L.C., the Interconnection Customer (IC), has proposed Transmission Interconnection requests X1-015 and X4-024. X1-015 proposed to upgrade the 500kV disconnect switch at the Rock Springs 500kV substation adjacent to the Keeney-Rock Springs 500kV circuit. X4-024 proposes to upgrade the wave trap and potential transformers also at the Rock Springs 500kV substation. The planned in-service date for the upgrades is July 1, 2013. Potential network impacts are provided in the Network Impacts section below.

Network Impacts

PJM studied the X1-015 and X4-024 projects at the Rock Springs 500kV substation and evaluated for compliance with reliability criteria for summer peak conditions in 2015. Potential network impacts were as follows:

Generator Deliverability

(Single or N-1 contingencies for the Capacity portion only of the interconnection)

No problems identified.

Multiple Facility Contingency

(Double Circuit Tower Line, Stuck breaker and Bus Fault contingencies for the full energy output)

No problems identified.

Contribution to Previously Identified Overloads

(This project contributes to the following contingency overloads, i.e. "Network Impacts", identified for earlier generation or transmission interconnection projects in the PJM Queue)

No problems identified.

New System Reinforcements

(Upgrades required to mitigate reliability criteria violations, i.e. "Network Impacts", initially caused by the addition of this project generation)

None

Contribution to Previously Identified System Reinforcements

(Overloads initially caused by prior Queue positions with additional contribution to overloading by this project. This project may have a % allocation cost responsibility which will be calculated and reported for the Impact Study)

None

Stability and Reactive Power Requirement

Not required.

Short Circuit

Not required.

Cost Estimates and Construction Schedule

NAEA's cost estimate and schedule to complete the work is as follows:

X1-015

- Upgrade/replace the existing 500kV line switch at the Rock Springs substation on the Rock Springs- Keeney transmission line to increase the circuit's emergency rating from 3014 to 3374 MVA.

- The estimated cost to perform this work is **$287,700** which includes Materials, Labor, Engineering, Project Management and Field Engineering & Testing.

- The requested in-service date of 7/1/2013 cannot be met due to required engineering, permitting, and construction activities.

X4-024

- Upgrade/replace the two existing wave traps and potential transformers at the Rock Springs 500kV substation to increase their emergency rating from 2905 to 3014 MVA.

- The estimated cost to perform this work is **$397,800** which includes Materials, Labor, Engineering, Project Management and Field Engineering & Testing

- The requested in-service date of 7/1/2013 cannot be met due to required engineering, permitting, and construction activities.

Additional Scope

- Replace the three (3) existing 3000:5 CT's with 4000:5 CT's on the Rock Springs transmission line.

- The estimated cost to perform this work is **$327,600** which includes Materials, Labor, Engineering, Project Management and Field Engineering & Testing

Estimated cost to perform the above work:	$1,013,100
Plus 30% contingency	303,930
Total estimate to perform above work:	**$1,317,030**

Schedule
The estimated time to complete this work is **28-36 months** from the execution of an interconnection agreement.

Incremental Deliverability Rights (IDRs) Determination

To be performed during the Facilities Study phase if required.