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Pinnacle West Energy

Discussion Points

- Common Queue
- Regional Queue
- Milestone Importance
- Non-Jurisdictional Entities

Pinnacle West Energy Corporation

- Subsidiary of Pinnacle West Capital Corporation, a Phoenix based company with consolidated assets of \$8.0 billion and annual revenues of \$4.6 billion that owns and/or operates nearly 10,000 megawatts of generating capacity in the Southwest

- Affiliate of Arizona Public Service. Utility with regulated generation including: Nuclear, coal and natural gas fueled power plants

Plants under PWEC management

- | | |
|------------------|------------------------------------|
| ➤ Redhawk | 1,060 megawatts – In operation |
| ➤ West Phoenix 4 | 120 megawatts – In operation |
| ➤ Saguaro | 80 megawatts – In operation |
| ➤ West Phoenix 5 | 530 megawatts – Testing |
| ➤ Silverhawk | 590 megawatts – Under construction |

Transmission Owners in the west:

- Investor Owned Utilities
- Municipalities
- Cooperatives
- Irrigation Districts
- Power Authorities
- California ISO

Palo Verde

Situation

- Multiple owners (some non-jurisdictional)
- 11 interconnection requests (close proximity)
 - Four transmission lines
 - 2 AC, 2 DC
 - Seven generator projects for a total of 8,600 megawatts

Problem

- How to deal with multiple requests and accommodate all parties

Action

- Used common queue
- Studied all projects and performed sensitivities with all variables

Implementation

- Developed preliminary scope/design of switchyard to accommodate all parties
- Costs estimated
- Required interested parties to post security totaling full share of expected costs

Result

- Project determined as unfeasible by some
- Clear picture of committed parties for progress
- All parties willing to move forward accommodated
- More projects developed, which benefits the market

Key Points

- Process must be followed by Non-Jurisdictional entities for clear advancement
- Late entrant tried to circumvent local queue by applying for interconnection through a neighboring system
- Must utilize regional queue to avoid problems
- Must have clear decisive milestones to prevent projects from gaming the queue

Las Vegas

Situation

- 12 generator projects requesting interconnection to same region but with different transmission owners
- Multiple switchyards required upgrades to avoid fault duty overloads

Problem

- If a sequential queue is used, who pays for what upgrades? What if someone drops out? What happens if a project is delayed?

Action

- Used common queue
- Determined scope of upgrades
- Shared costs
- Required full security for Participants

Result

- Effectively reduced barriers to develop projects
- Prevented endless disputes involving allocation of upgrade costs
- Upgrades are now in progress
- Generators are entering the market

Key Points

- Process must be followed by Non-Jurisdictional entities for clear advancement
- Must utilize regional queue to avoid problems
- Must have clear decisive milestones to prevent projects from gaming the queue

Major Concerns

- Non-jurisdictional entity processes
 - Difficult to deal with
 - Slow implementation
 - No milestones to eliminate projects not moving forward
 - Hesitant to pay transmission credits

Recommendations

- Multiple interconnection requests in close geographic proximity and onset time-frames necessitate implementation of a common queue
- Queue must take into account regional projects
- Must have clear decisive milestones to prevent projects from gaming the queue.
- Process must be followed by Non-Jurisdictional entities for clear advancement