MISO TO (MidAmerican) response for the 5 SPP DISIS-2017-001 projects.

- This is the response to the SPP IC Draft comments/questions on the change in cost for the SPP DISIS-2017-001 AFS NUFS report posted in late January.
- There are no edits expected to the previous facilities studies.
- MISO and MidAmerican will finalize the Facilities Studies and move forward with Facilities Construction Agreement in the next several weeks.

MidAmerican:

Sorry for the delays as we worked with one potential vendor to get a response. Complicating this is that MidAmerican has never installed a STATCOM before, so the one at Black Hawk Substation will be its first. MidAmerican used estimates we have seen other TOs use in past DPP cycles, which are planning level estimates not specific reviews for the initial estimates provided when the study started.

Since then time has elapsed, market prices for labor and equipment have increased significantly based on scarcity of both and demand for both. MidAmerican requested a cost estimate from a different vendor and reviewed more site specifics at Black Hawk Substation. Complexities with the existing substation footprint, high security fencing and elevation results in the need for a separate, security fenced area for the STATCOM, which also enables better future inspection and maintenance by contractor. A new, short breakered 345 kV line, a new STATCOM area and relocation of an existing transmission line is required to accommodate the addition of a STATCOM. The estimated cost for expanding the Black Hawk bus, constructing the STATCOM yard and transmission line work (not including the STATCOM cost) is approximately $23m. It should be noted the actual cost will vary depending on the actual design and bid process for the project.

MidAmerican reached out to a vendor for an estimate for only the STATCOM purchase, no additional equipment added and found the cost is approximately $22m. This estimate does not include additional harmonic filters or other devices to ensure power quality is not adversely affected. These are site specific detailed studies, which are costly to complete, so MidAmerican did not request such a study given this project may not be needed if a future restudy was completed because of changes in the SPP queue. As a result of the uncertainty with what additional features for the STATCOM may be required from the detailed studies by the winning vendor and the expected continued price increases, MidAmerican increased the estimate to $27m. It should be noted the actual cost estimate for the STATCOM may change depending on project schedule, timing, vendor, etc. The estimated cost from one vendor shows a cost breakdown of the STATCOM.

Description	Estimated Cost ($)
Power Electronics	$ 8,750,000

Power Transformers	$	8,250,000
Steel/Bus/Connectors	$	800,000
Control House/Station Service/Security Lighting	$	1,350,000
Medium Voltage Equipment	$	1,350,000
Contractor Labor	$	3,250,000
Contractor Engineering & Management	$	1,000,000
System Studies	$	500,000
Engineering/Administration/Management	$	500,000
Site Services	$	500,000
Miscellaneous	$	750,000
Total	$	27,000,000

The cost estimate of $50m in the Facilities Study for the Black Hawk 345 kV STATCOM includes the additions as mentioned above to account for some unknowns that will be determined if this project develops further to the request for bids phase. The costs are estimates, and the customers will pay their cost allocation based on actuals.

There should not be edits expected to the previous facility study. MISO and MidAmerican will finalize the Facilities Studies and move forward with Facilities Construction Agreement in the next several weeks.

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