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DOCKET NO. 52485

APPLICATION OF SOUTHWESTERN PUBLIC SERVICE COMPANY TO AMEND ITS CERTIFICATE OF CONVENIENCE AND NECESSITY TO CONVERT HARRINGTON GENERATING STATION FROM COAL TO NATURAL GAS	§ § § § § § §	**PUBLIC UTILITY COMMISSION OF TEXAS**

SOUTHWESTERN PUBLIC SERVICE COMPANY'S RESPONSE TO TEXAS INDUSTRIAL ENERGY CONSUMERS' FIRST REQUEST FOR INFORMATION QUESTION NOS. 1-1 THROUGH 1-16

(*Filename*: SPSRespTIEC1st.doc; *Total Pages*: 22)

EXHIBITS ATTACHED:

DOCKET NO. 52485

APPLICATION OF SOUTHWESTERN PUBLIC SERVICE COMPANY TO AMEND ITS CERTIFICATE OF CONVENIENCE AND NECESSITY TO CONVERT HARRINGTON GENERATING STATION FROM COAL TO NATURAL GAS	§ § § § § § §	**PUBLIC UTILITY COMMISSION OF TEXAS**

SOUTHWESTERN PUBLIC SERVICE COMPANY'S RESPONSE TO TEXAS INDUSTRIAL ENERGY CONSUMERS' FIRST REQUEST FOR INFORMATION QUESTION NOS. 1-1 THROUGH 1-16

Southwestern Public Service Company ("SPS") files this response to the Texas Industrial Energy Consumers' ("TIEC") First Request for Information, Question Nos. 1-1 and 1-16. SPS has provided notice, by email, to all parties that SPS's Responses to TIEC's 1st Request for Information and accompanying exhibits (excluding voluminous and exhibits provided pursuant to the protective order) have been filed with the Commission and are available for download from the Commission's Interchange website.

I. WRITTEN RESPONSES

SPS's written responses to TIEC's First Request for Information are attached and incorporated by reference. Each response is stated on or attached to a separate page on which the request has been restated. SPS's responses are made in the spirit of cooperation without waiving SPS's right to contest the admissibility of any of these matters at hearing. In accordance with 16 Tex. Admin. Code § 22.144(c)(2)(A) ("TAC"), each response lists the preparer or person under whose direct supervision the response was prepared and any sponsoring witness. When SPS provides certain information sought by the request while objecting to the provision of other information, it does so without prejudice to its objection in the interests of narrowing discovery

disputes under 16 TAC § 22.144(d)(5). Pursuant to 16 TAC § 22.144(c)(2)(F), SPS stipulates that its responses may be treated by all parties as if they were made under oath.

II. INSPECTIONS.

If responsive documents are more than 100 pages but less than eight linear feet in length, the response will indicate that the attachment is voluminous ("(V)") and, pursuant to 16 TAC § 22.144(h)(2), the exhibit will be made available for inspection at SPS's voluminous room at 600 Congress Avenue, Suite 2000, Austin, Texas 78701; telephone number (512) 721-2700. Voluminous exhibits will also be provided via email through Coffin Renner LLP's file sharing link.

If a response or the responsive documents are provided pursuant to the protective order in this docket, the response will indicate that it or the attachment is either confidential ("CONF") or highly Sensitive ("HS") as appropriate under the protective order. Access to Confidential and Highly Sensitive materials will be available on Coffin Renner's file sharing link to all parties that have signed and filed the certification under the protective order entered in this docket. Confidential and Highly Sensitive responsive documents will also be made available for inspection at SPS's voluminous room, unless they form a part of a response that exceeds eight linear feet in length; then they will be available at their usual repository in accordance with the following paragraph. Please call in advance for an appointment to ensure that there is sufficient space to accommodate your inspection.

If responsive documents exceed eight linear feet in length, the response will indicate that the attachment is subject to the FREIGHT CAR DOCTRINE, and, pursuant to 16 TAC § 22.144(h)(3), the attachment will be available for inspection at its usual repository, SPS's offices in Austin, Texas, unless otherwise indicated. SPS requests that parties wishing to inspect this material provide at least 48-hour notice of their intent by contacting Stephanie Tanner at Coffin Renner LLP, 1011 West 31st Street, Austin, Texas 78705; telephone number (512) 879-0900; facsimile transmission number (512) 879-0912; email address: stephanie.tanner@crtxlaw.com. Inspections will be scheduled to accommodate all requests with as little inconvenience to the requesting party and to SPS's operations as possible.

Respectfully submitted,

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ATTORNEYS FOR
SOUTHWESTERN PUBLIC SERVICE COMPANY

RESPONSES

QUESTION NO. TIEC 1-1:

Please provide in live Excel format all workpapers associated with the 2021 updated economic analysis supporting SPS's decision to convert the Harrington units to operate on natural gas.

RESPONSE:

Please refer to Exhibit SPS-SC 1-3(i)(HS).

Preparer: Ben R. Elsey
Sponsor: Ben R. Elsey

QUESTION NO. TIEC 1-2:

Referring to page 14, lines 14–25 of Mr. Elsey's testimony:

a. Please provide in live Excel format SPS's assumed natural gas prices under all scenarios studied in the 2021 economic analysis.
b. Please provide all copies of market information and fundamentally-based forecasts used to produce SPS's natural gas forecast.

RESPONSE:

a. Please refer to SPS's response to Question No. SC 1-31.

The base, low and high natural gas forecasts can be found on 'TimeSeriesDatedChanges' tabs in the files: SPS_ReferenceCase_1H21_2021-06-21.xlsx, 1H21_Low Growth Sensitivity.xlsx, and 1H21_High Growth Sensitivity.xlsx, respectively.

b. Please refer to Exhibits SPS-TIEC 1-2A (HS)(USB) through SPS-TIEC 1-2K (HS)(USB).

Preparer: Ben R. Elsey
Sponsor: Ben R. Elsey

QUESTION NO. TIEC 1-3:

Referring to page 15, lines 1–8 of Mr. Elsey's testimony:

a. Please provide in live Excel format SPS's current coal contract volumes and prices under all scenarios studied in the 2021 economic analysis.
b. Please provide in live Excel format SPS's estimates of require spot market coal volumes and prices under all scenarios studied in the 2021 economic analysis.
c. Please provide all forecasts and indicators relied upon to develop each coal price forecast.

RESPONSE:

a. Please refer to Exhibit SPS-SC 1-4(e)(i) for coal transportation and handling costs used in the Harrington Analysis. SPS use historical and budgeted coal volumes and costs to forecast coal transportation and handling costs. SPS's Harrington Analysis evaluated either the continuation or cessation of coal operations beyond 2024. For the purposes of estimating coal transportation and handling costs, SPS assume identical costs in each scenario where coal operations continue beyond 2024.

b. Please refer to the EnCompass output files provided in Exhibit SPS-SC 1-3(i)(HS). Note: The coal transportation and handling costs described in subpart (a) are shown in the EnCompass output files as fixed O&M costs, while the coal market prices are shown as a fuel cost.

c. Please refer to Exhibit SPS-TIEC 1-2 (HS)(USB).

Preparer: Ben R. Elsey
Sponsor: Ben R. Elsey

QUESTION NO. TIEC 1-4

Referring to page 15, lines 16–22 of Mr. Elsey's testimony:

a. Please provide in live Excel format SPS's forecast of market electricity prices under all scenarios studied in the 2021 economic analysis.
b. Please explain why SPS chose to calculate market electricity prices from implied heat rates rather than using forecasts from third-party vendors.
c. Are the forecasted market electricity prices entered as inputs into EnCompass or are they derived within EnCompass?

RESPONSE:

a. Please refer to SPS's response to Question No. Sierra Club 1-32. The base, low and high natural market electricity price forecasts can be found on 'TimeSeriesDatedChanges' tabs in the files: SPS_ReferenceCase_1H21_2021-06-21.xlsx, 1H21_Low Growth Sensitivity.xlsx, and 1H21_High Growth Sensitivity.xlsx, respectively.

b. SPS calculates market electricity prices using the market implied heat rate to ensure the market electricity price forecast is consistent with the natural gas price forecast.

c. The forecasted market electricity prices are entered as inputs into EnCompass.

Preparer: Ben R. Elsey
Sponsor: Ben R. Elsey

QUESTION NO. TIEC 1-5:

Identify all capital, O&M, interconnection, and other costs associated with all replacement resources assumed in the 2021 economic analysis.

RESPONSE:

Please refer to SPS's response to Sierra Club 1-3, Exhibit SPS-SC 1-3(i)(HS). The cost of replacement resources can be found in the file 'SPS_ReferenceCase_1H21_2021-06-21.xlsx'.

Preparer: Ben R. Elsey
Sponsor: Ben R. Elsey

QUESTION NO. TIEC 1-6:

Referring to page 28, lines 3–12 of Mr. Elsey's testimony, describe how the capital costs for each compliance solution was estimated and provide all workpapers and/or documentation used to produce each estimate.

RESPONSE:

For the capital cost of constructing a new natural gas pipeline, SPS relied upon the Front End Engineering Design (FEED) study performed by EN Engineering. Please refer to SPS's response to Sierra Club 1-27, Exhibit SPS-SC 1-27.1.

For the environmental control solutions (i.e., SDA and DSI), SPS relied upon capital cost estimates from Burns and McDonnell. Please refer to SPS's response to Sierra Club 1-4, Exhibit SPS-SC 1-4(e)(ii)(CONF).

For the capital cost of constructing a new combustion turbine generator, SPS relied upon internal cost estimates. Please refer to Exhibit SPS-TIEC 1-6.

For the capital cost of new battery energy storage, SPS relied upon proposals received from the RFI process. Please refer to SPS's response to Question No. TIEC 1-15.

Preparers: Ben R. Elsey, Mark Lytal
Sponsors: Ben R. Elsey, Mark Lytal

QUESTION NO. TIEC 1-7:

Referring to Tables BRE-2 and BRE-3, explain why Scenarios 3 and 4 in each of these tables have the same NPV over the three-year planning period 2022–2024.

RESPONSE:

Both Scenario 3 (install DSI on all Harrington units) and Scenario 4 (install SDA on all Harrington Units) assume all three Harrington units will continue to operate on coal, without environmental controls, between 2022 and 2024. Therefore, during this period both scenarios are the same. The two scenarios only diverge once environmental controls are installed at the end of 2024.

Preparer: Ben R. Elsey
Sponsor: Ben R. Elsey

QUESTION NO. TIEC 1-8:

Referring to page 34, lines 18–22 of Mr. Elsey's testimony, provide in live Excel format all copies of the 2021 economic analysis conducted in which the assumed capital cost for converting all Harrington Units to operate on natural gas is $75 million. If no such analyses were performed, explain why not.

RESPONSE:

SPS has not conducted such an analysis. An increase in approximately $10 million capital expenditure (due to commodity price increases) can be approximated without the need for conducting in-depth additional EnCompass modeling. SPS's recommendation does not fundamentally change if the pipeline increases from $65M to $75M.

Preparer: Ben R. Elsey
Sponsor: Ben R. Elsey

QUESTION NO. TIEC 1-9:

Referring to page 37, lines 16–19 of Mr. Elsey's testimony:

a. Confirm or deny whether this statement implies that renewable generation will replace the capacity of Harrington if all or a portion of the plant is retired.
b. If the above is confirmed, please reconcile this conclusion with Elsey's statement on page 9, lines 9–12 which states that replacements would likely include "new firm and dispatchable thermal resources".
c. If SPS is doubtful that it could acquire renewable generation within this timeframe, has SPS conducted a study in which alternative replacement resources are assumed? If so, please provide this study in live Excel format.

RESPONSE:

a. Deny.

b. Not applicable.

c. SPS has not conducted such an analysis. As described on page 19 of Mr. Elsey's Direct Testimony, the main challenge with acquiring renewable generation within this timeframe is the severe backlog in Southwest Power Pool's generation interconnection process. This problem is not unique to renewable generation and would also be applicable to alternative new replacement resources.

Preparer: Ben R. Elsey
Sponsor: Ben R. Elsey

QUESTION NO. TIEC 1-10:

Has SPS performed any analysis in which the Hale and Sagamore facilities receive accredited capacity to help meet SPS's reserve margin requirement needs? If not, explain why not.

RESPONSE:

All Harrington scenarios and sensitivities assume the Hale and Sagamore facilities will receive accredited capacity to help meet SPS's planning reserve margin requirements.

Preparer: Ben R. Elsey
Sponsor: Ben R. Elsey

QUESTION NO. TIEC 1-11:

Please identify all development options considered at SPS's other generating stations in scenarios in which the Harrington units are retired. If no such options were considered, explain why not.

RESPONSE:

SPS considered installation of new generating resources at SPS's existing coal generating stations. For example, SPS's 2021 Harrington Analysis evaluated the option of installing solar and/or wind using surplus interconnection or generator replacement at both Tolk and Harrington Station.

For clarity, development options that would increase the net output of existing generating stations would still be required to enter Southwest Power Pool's Generator Interconnection process.

Preparer: Ben R. Elsey
Sponsor: Ben R. Elsey

QUESTION NO. TIEC 1-12:

Please state whether SPS has developed a load forecast below the median expectation for future energy and peak demand. If not, explain why not.

RESPONSE:

Yes.

Preparer: Arslan Gohir
Sponsor: John M. Goodenough

QUESTION NO. TIEC 1-13:

Please provide a sensitivity case of the 2021 economic study in which the load forecast is the 15th percentile of simulation results.

RESPONSE:

SPS has not conducted this analysis.

Preparer: Ben R. Elsey
Sponsor: Ben R. Elsey

QUESTION NO. TIEC 1-14:

Please explain why SPS has not included a scenario in the 2021 economic study in which load is below the median expectation of the financial forecast.

RESPONSE:

SPS evaluated the demand and energy forecasts that are most likely to materialize. SPS does not plan its most economic and reliable portfolio of generating resources using an energy and demand forecast that is lower than the median expectation as this exposes SPS and its customers to unreasonable risk and potential costs.

Preparer: Ben R. Elsey
Sponsor: Ben R. Elsey

QUESTION NO. TIEC 1-15:

Please provide the nameplate capacity and levelized NPV costs associated with each of the responses evaluated from SPS's RFI process.

RESPONSE:

Please refer to SPS's response to Sierra Club 1-4, Exhibit SPS-SC 1-4(e)(ii)(CONF). Note: The levelized NPV costs generally did not include the necessary transmission network upgrade costs. The costs including transmission network upgrade costs can be found in the EnCompass input files provided in Exhibit SPS-SC 1-3(i)(HS).

Preparer: Ben R. Elsey
Sponsor: Ben R. Elsey

QUESTION NO. TIEC 1-16:

Referring to page 13 of Attachment DDK-1, explain why the immediate capacity deficiency in the retirement case is met with the installation of a new combustion turbine rather than a combined cycle gas turbine.

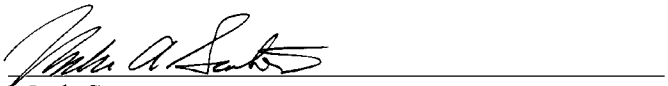
RESPONSE:

SPS relied upon the EnCompass production cost model to optimally create the most economic portfolio of resources. Using the inputs provided in Exhibit SPS-SC 1-3(i)(HS) the EnCompass model selected a new combustion turbine generator rather than a new combined cycle as it resulted in the lowest system costs on a present value revenue requirement basis.

Preparer: Ben R. Elsey
Sponsor: Ben R. Elsey

CERTIFICATE OF SERVICE

I certify that on the 16th day of November 2021, a true and correct copy of the foregoing instrument was served on all parties of record by electronic service and by either hand-delivery, Federal Express, regular first class mail, certified mail, or facsimile transmission.



Mark Santos

Generic:	Simple Cycle Combustion Turbine (Brownfield)
Technology:	SSC6-5000Fee
Last Reviewed:	4/23/2021

Initial Cost Data ($2021, escalated at 2% per year)	
Power Train	$ 45,000,000
Mech. Equip	$ 4,000,000
Elec. Equip	$ 6,000,000
Controls	$ 1,200,000
SCR	$ 5,000,000
Construction	$ 22,000,000
Design & Eng.	$ 2,800,000
StartUp and Commissioning	$ 1,000,000
Xcel OH, Escalation & Indirects	$ 12,500,000
Total	**$ 99,500,000**

Excluding AFUDC

Cost per $/kW $495.27

On-going Cost Data ($2021, escalated at 2% per year)

Identical to Jones Units 3 & 4, use average cost of both units for generics

Performance Data

Unless stated otherwise below, use Jones 3 & 4 data for generic CTs
Includes SCR, so do not use Jones 3 and 4's annual limits

	Season	Summer	Shoulder	Winter	Summer	Shoulder	Winter	Summer	Shoulder	Winter
	Evap. Cooling	On	On	Off	On	On	Off	On	On	Off
GT gross Load	%	100%	100%	100%	75%	75%	75%	50%	50%	50%
Net power	MW	200.9	223.5	233.3	150.6	167.5	174.9	100.3	111.6	116.4
Net efficiency	%	37.8	38.5	38.5	35.1	36.6	37.1	29.3	31.6	32.0
Net heat rate	Btu/kWh	9,017	8,870	8,870	9,713	9,323	9,203	11,627	10,798	10,647
Heat Input	MMBtu	1,812	1,982	2,069	1,463	1,562	1,610	1,166	1,205	1,239

Heat Rate

Summer $y = 0.0103x^2 + 3.3108x + 730.33$
Shoulder $y = 0.0102x^2 + 3.543x + 683.14$
Winter $y = 0.0132x^2 + 2.4851x + 771.22$

PERFORMANCE DATA		95 degF / EC On	59 degF / EC On	20 degF / EC Off	95 degF / EC On	59 degF / EC On	20 degF / EC Off
GT gross load	%	100	100	100	75	75	75
Net power	MW	200.9	223.5	233.3	150.6	167.5	174.9
Net efficiency	%	37.8	38.5	38.2	35.1	36.6	37.1
Net heat rate	Btu/kWh	9017	8870	8943	9713	9323	9203
Gross power	MW	202.0	224.7	234.5	151.5	168.6	175.9
Gross efficiency	%	38.1	38.7	38.4	35.4	36.8	37.3
Gross heat rate	Btu/kWh	8955	8821	8894	9651	9266	9146

PERFORMANCE DATA		95 degF / EC On	59 degF / EC On	degF / EC Off
GT gross load	%	50	50	50
Net power	MW	100.3	111.6	116.4
Net efficiency	%	29.3	31.6	32.0
Net heat rate	Btu/kWh	11627	10798	10647
Gross power	MW	101.0	112.4	117.3
Gross efficiency	%	29.6	31.8	32.3
Gross heat rate	Btu/kWh	11539	10726	10572