SOAH DOCKET NO. 473-19-6862
PUC DOCKET NO. 49737

APPLICATION OF SOUTHWESTERN ELECTRIC POWER COMPANY FOR CERTIFICATE OF CONVENIENCE AND NECESSITY AUTHORIZATION AND RELATED RELIEF FOR THE ACQUISITION OF WIND GENERATION FACILITIES	§ § § § § § §	BEFORE THE STATE OFFICE OF ADMINISTRATIVE HEARINGS

SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO TEXAS INDUSTRIAL ENERGY CONSUMERS' NINTH REQUEST FOR INFORMATION

NOVEMBER 13, 2019

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SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO TEXAS INDUSTRIAL ENERGY CONSUMERS' NINTH REQUEST FOR INFORMATION

Question No. TIEC 9-1:

Please state all carbon tax, carbon dispatch burden, or any other carbon-related assumptions that were used in the economic modeling of the projected benefits of the North Central Energy Facilities and explain how each of those assumptions impacts the projected benefits throughout the modeling process.

Response No. TIEC 9-1:

See the Company's response to TIEC 9-3 in which the carbon dispatch burden assumption is described for the cases the Company ran with a carbon burden in them. In general, the benefits are higher in the cases with a carbon burden because market energy prices are forecasted to be higher, so the energy produced by emission-free wind facilities has a greater market value when sold into the SPP energy market. It offsets fuel and purchased power costs and flows to customers in the form of lower fuel rates. That additional energy market revenue is captured in the underlying PLEXOS production cost modeling in cases with the project, resulting in lower production costs than the cases without the project.

Prepared By: Jon R. Maclean	Title: Resource Planning Mgr
Prepared By: James F. Martin	Title: Regulatory Case Mgr
Sponsored By: John F. Torpey	Title: Mng Dir Res Plnning&Op Anlysis

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Question No. TIEC 9-2:

Please state, for each case presented in this proceeding, whether the PLEXOS modeling of the expected benefits of the North Central Energy Facilities assumed that there would be a carbon dispatch burden on SWEPCO's owned generation.

Response No. TIEC 9-2:

The Company presented 12 cases for SWEPCO in this proceeding. The results are presented in Company witness Torpey's Errata Exhibits JFT-3 and JFT-4. The cases with a carbon dispatch burden on SWEPCO's owned generation say "with Carbon" in the case description on JFT-3 and "With CO2" on JFT-4. The cases with no carbon burden say "No Carbon" on Errata JFT-3 or "Without CO2" on Errata JFT-4.

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Question No. TIEC 9-3:

Has SWEPCO/AEP analyzed the probability of a carbon tax or similar carbon burden being enacted during the 2021-2051 period? If so, please provide any such analyses.

Response No. TIEC 9-3:

Yes. The Fundamentals Forecast employed a CO_2 dispatch burden on all existing fossil fuel-fired generating units that escalates 3.5% per annum from $15 per metric ton commencing in 2028. This CO_2 dispatch burden was the same across the Base, High and Low Cases and is a proxy for other pathways CO_2 mitigation may take in addition to any regulation to impose fees on the combustion of carbon-based fuels. It is the assessment of Company experts that the likelihood of any federal climate legislation is very low over the next two years. With 2021-2023 as the earliest reasonable date for a climate proposal to pass through committee, reach the floor and be approved for eventual passage, there will be an implementation period of approximately five years (as seen in previous climate proposals). Thus, 2028 is the earliest reasonable projection as to when such legislation could become effective. The Fundamentals Forecast is not merely concerned with the current status of regulations and other current conditions that affect prices, but instead must also reflect reasonable expectations regarding future conditions that affect prices. As such, the carbon price proxy used for fundamentals forecasting is a reasonable assessment of future costs based on the current prospects for carbon regulations or other proxies for CO_2 mitigation costs and potential changes thereto. The Company has also provided analyses with an assumption of no carbon burden.

Prepared By: Connie S. Trecazzi Title: Economic Forecast Anlyst Staff

Sponsored By: Karl R. Bletzacker Title: Dir Fundamental Analysis

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SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO TEXAS INDUSTRIAL ENERGY CONSUMERS' NINTH REQUEST FOR INFORMATION

Question No. TIEC 9-4:

What is SWEPCO/AEP's position regarding the possibility of a carbon tax or similar carbon burden being enacted during the 2021-2051 period?

a. Who are the individual(s) at SWEPCO/AEP that are responsible for developing that position?

b. Please state the probability that SWEPCO/AEP believes is reasonable to assign to the possibility of a carbon tax or similar carbon burden being enacted during the 2021-2051 period.

Response No. TIEC 9-4:

Please refer to the Company's response to TIEC 9-3.

a. Collaborative carbon pricing proxy development primarily involves the Vice President of Environmental Services, the Director of Air Quality Services, the Deputy General Counsel (Environmental), and the Director of Fundamentals Analysis.

b. The Company characterizes the probability of a carbon tax or similar carbon burden being enacted during the 2021-2051 period as "highly likely."

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SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO TEXAS INDUSTRIAL ENERGY CONSUMERS' NINTH REQUEST FOR INFORMATION

Question No. TIEC 9-5:

Has SWEPCO/AEP analyzed the possibility of the wind production tax credit (PTC) or a similar subsidy for wind generation being reenacted during the 2021-2051 period? If so, please provide any such analyses.

Response No. TIEC 9-5:

In light of the comprehensive PTC phase out recently enacted by Congress, SWEPCO/AEP does not believe there is a substantial likelihood of the PTC or similar subsidy for wind generation being reenacted in the near term. The Company's tax planning and forecasting is based on current law and does not incorporate predictions regarding future legislative activity. SWEPCO/AEP has not analyzed that possibility for the latter part of the 2021-2051 period.

Prepared By: Joseph A. Karrasch	Title: Dir Renewable Energy Devlpmnt
Prepared By: Edward J. Locigno	Title: Regulatory Analysis & Case Mgr
Sponsored By: Jay F. Godfrey	Title: VP Energy Mktng & Renewables

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SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO TEXAS INDUSTRIAL ENERGY CONSUMERS' NINTH REQUEST FOR INFORMATION

Question No. TIEC 9-6:

What is SWEPCO/AEP's position regarding the possibility of the wind production tax credit (PTC) or a similar subsidy for wind generation being reenacted during the 2021-2051 period?

a. Who are the individual(s) at SWEPCO/AEP that are responsible for developing that position?

b. Please state the probability that SWEPCO/AEP believes is reasonable to assign to the possibility of the wind production tax credit (PTC) or a similar subsidy for wind generation being reenacted during the 2021-2051 period.

Response No. TIEC 9-6:

a. The Company has a Federal Policy team that forms legislative positions regarding renewable subsidies.

b. See the Company's response to TIEC 9-5.

Prepared By: Joseph A. Karrasch	Title: Dir Renewable Energy Devlpmnt
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SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO TEXAS INDUSTRIAL ENERGY CONSUMERS' NINTH REQUEST FOR INFORMATION

Question No. TIEC 9-7:

Please explain how the assumed delivered cost of natural gas for SWEPCO's natural gas plants was developed for the purposes of SWEPCO's PLEXOS analysis in this proceeding.

Response No. TIEC 9-7:

Forecasted 2021 basis differentials prepared by the AEP Gas procurement group were added to the Fundamentals Forecast Henry Hub prices for each unit for the 2022-2051 period.

Prepared By: Jon R. Maclean — Title: Resource Planning Mgr
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SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO TEXAS INDUSTRIAL ENERGY CONSUMERS' NINTH REQUEST FOR INFORMATION

Question No. TIEC 9-8:

Please provide, for each of SWEPCO's natural gas plants for each year in the 2021-2051 study period: (1) the relevant natural gas trading hub assumed in SWEPCO's PLEXOS analysis in this proceeding; (2) the assumed basis differential from Henry Hub to the relevant natural gas trading hub; and (3) any transportation costs.

Response No. TIEC 9-8:

See the response to OPUC 1-8.

Prepared By: Jon R. Maclean	Title: Resource Planning Mgr
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SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO TEXAS INDUSTRIAL ENERGY CONSUMERS' NINTH REQUEST FOR INFORMATION

Question No. TIEC 9-9:

Please provide a detailed explanation of how the Aurora model accounts for differences in the prices of natural gas at different trading hubs across North America. In responding, please provide, if any, the assumed basis differentials between Henry Hub and the natural gas trading hubs that are used to supply gas-fired generating units in the SPP Central area.

Response No. TIEC 9-9:

As utilized by the Company, the Aurora energy market simulation model is populated with distinct locational natural gas prices for each month/year of the forecast period. It is reasonable to expect that, at locations near established trading hubs, the locational value of natural gas in the Aurora model is analogous with those of the trading hub.

The majority of natural gas electric generating units in SPP Central are modeled with locational natural gas prices associated with the trading hub, "Panhandle Eastern Pipe Line Co., Texas, Oklahoma." Please refer to the workpapers of Karl R. Bletzacker for the Fundamentals Forecasts, Worksheet "Forecast-Peak_OffPeak-Nominal" column AF for monthly locational natural gas values. To express the monthly locational natural gas values as basis differentials to the Henry Hub, please subtract the Henry Hub values provided in the same worksheet, column AA.

Prepared By: Connie S. Trecazzi — Title: Economic Forecast Anlyst Staff

Sponsored By: Karl R. Bletzacker — Title: Dir Fundamental Analysis

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SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO TEXAS INDUSTRIAL ENERGY CONSUMERS' NINTH REQUEST FOR INFORMATION

Question No. TIEC 9-10:

Please provide a detailed explanation of how the Aurora model accounts for differences in delivered prices to various natural gas plants across North America. In responding, please provide, if any, the assumed transportation costs for supplying gas-fired generating units in the SPP Central area.

Response No. TIEC 9-10:

As utilized by the Company, the Aurora energy market simulation model is populated with distinct locational natural gas prices across North America for each month/year of the forecast period. This locational value represents the delivered price of natural gas within the defined location. Please see the Company's response to TIEC 9-9.

Prepared By: Connie S. Trecazzi — Title: Economic Forecast Anlyst Staff

Sponsored By: Karl R. Bletzacker — Title: Dir Fundamental Analysis

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<u>SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO TEXAS INDUSTRIAL ENERGY CONSUMERS' NINTH REQUEST FOR INFORMATION</u>

Question No. TIEC 9-11:

Has Simon Wind conducted any backcast studies in the past five years comparing its estimated net capacity factors with actual results? If so, please provide any such studies.

Response No. TIEC 9-11:

Please see TIEC 9-11 Attachment 1.

Prepared By: Joseph A. Karrasch	Title: Dir Renewable Energy Devlpmnt
Prepared By: Edward J. Locigno	Title: Regulatory Analysis & Case Mgr
Sponsored By: Jay F. Godfrey	Title: VP Energy Mktng & Renewables

SimonWind

Review of Actual Energy to Pre-Construction Projections
For Wind Projects Analyzed by Simon Wind in the Past Five Years
Prepared by Richard Simon, November 2, 2019

Discussion

The chart and map presented in this report show the comparison of long-term wind energy projections to actual production, plus the geographical locations of the wind farms in question.

Five projects are presented, and the pre-construction projections were made by Richard Simon, President of Simon Wind. The company was founded in 2016.

For definition, "actual energy" is the average annual net energy delivered to the grid over the course of the wind farm existence, with an adjustment made to long-term normal based on free-stream wind data adjacent to a given wind farm. The adjustments were less than 2%.

"Pre-construction projections" are the expected long-term mean annual net energy taken from energy yield assessment reports authored by Mr. Simon. These reports are confidential, and thus cannot be published.

Results

Figure 1 shows percentages of actual net energy to pre-construction forecasts, sorted in increasing order. The percentages range from 96.8% to 101.3%. This is very typical of modern projects that have a solid meteorological campaign, full understanding of the gross-to-net discount factors, plus turbine availabilities close to warranted expectations.

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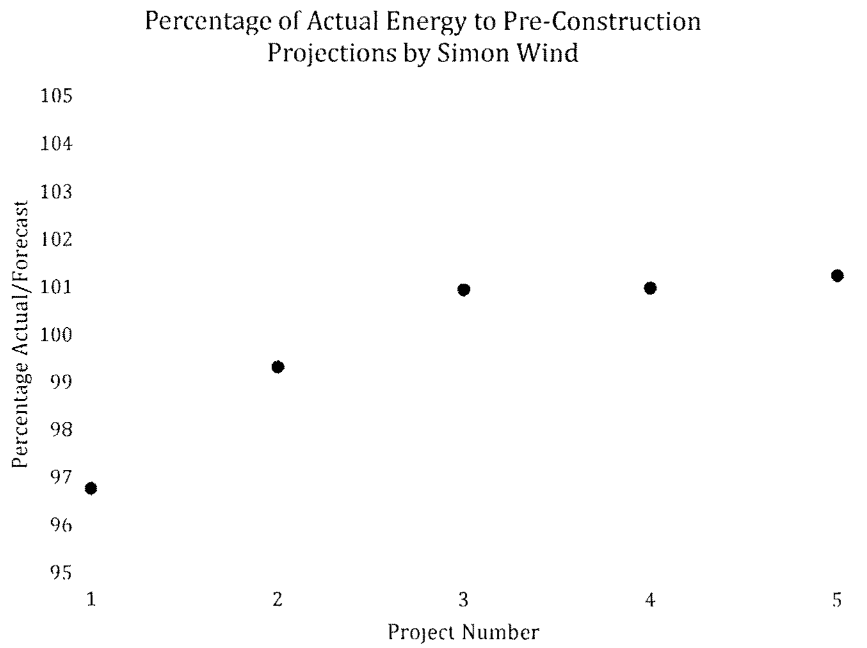
SimonWind



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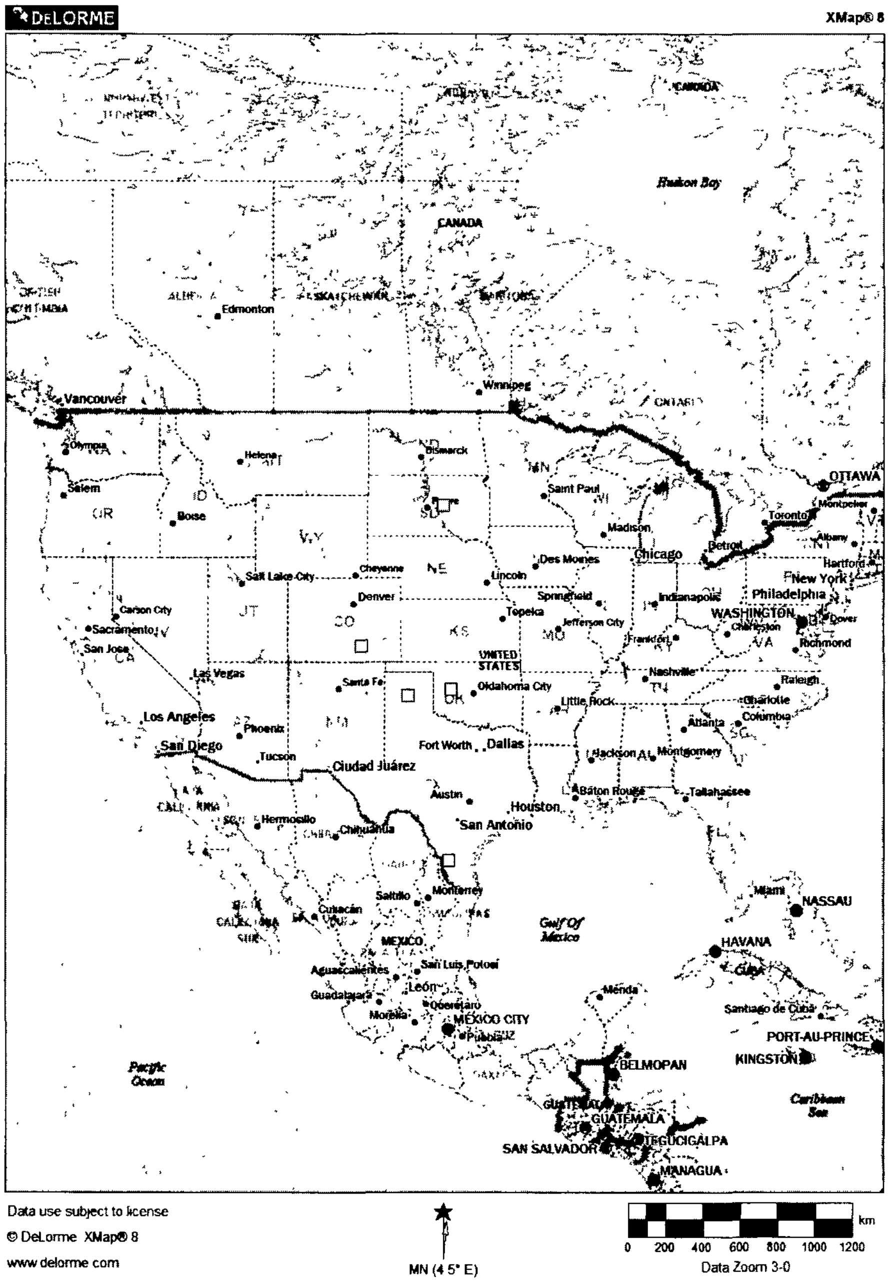

Projects Evaluated by Simon Wind (Yellow Squares)

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Question No. TIEC 9-12:

Please provide the maximum amount of nameplate capacity of wind that PSO and SWEPCO could procure such that AEP would be able to utilize fully all generated PTCs under its forecasted future tax burden without the need for a deferred tax asset. In responding, please assume that the capacity factor of the wind facilities would be the P50 capacity factor presented in this proceeding.

Response No. TIEC 9-12:

The Company has not performed the requested analysis.

Prepared By: David A. Hodgson   Title: Tax Mgr

Sponsored By: Joel J. Multer   Title: Dir Tax Acctg & Reg Support

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SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO TEXAS INDUSTRIAL ENERGY CONSUMERS' NINTH REQUEST FOR INFORMATION

Question No. TIEC 9-13:

Referring to SWEPCO's Response to TIEC 4-7, please identify with specificity the provisions in the Purchase and Sale Agreements that preclude the possibility of SWEPCO acquiring all or a portion of only the Sundance or Maverick facilities by themselves. In responding, please state whether SWEPCO would be precluded from acquiring all or a portion of only the Sundance or Maverick facilities by themselves if SWEPCO only received CCN authorization from the Texas Commission for only the Sundance or Maverick facilities by themselves.

Response No. TIEC 9-13:

SWEPCO has not contemplated, in its Application in this proceeding, a scenario that would result in the acquisition of either the Maverick or Sundance facilities on a standalone basis. The contractual minimum installed capacity for Traverse (810 MW) is the relevant, limiting contractual purchase obligation under SWEPCO's Application and Section 3.18 of the Traverse PSA. The Traverse contractual minimum is the limiting factor because:

(1) SWEPCO has an obligation to its customers to purchase capacity in accordance with the least-cost, risk-adjusted rank order resulting from the RFP (with Traverse being the highest scoring of the three wind facilities pursuant to the RFP); and

(2) The multi-jurisdictional nature of the Company's proposal limits the number of combinations of MW purchase options to the ones set forth in the Company's Application in order to coordinate that purchase with the other state jurisdictions.

Accordingly, although there are other theoretical options, the practical limits of the SWEPCO's Application preclude the Maverick and Sundance PSAs from setting or contributing to the contractual minimum purchase quantity. In addition, SWEPCO's Application does not seek authorization for the Company to acquire wind capacity under the PSAs if only one SWEPCO jurisdiction authorizes the acquisition and PSO does not also grant authorization.

Prepared By: Christopher N. Martel	Title: Regulatory Consultant Sr
Prepared By: James F. Martin	Title: Regulatory Case Mgr
Prepared By: Jonathan M. Griffin	Title: Regulatory Consultant Staff
Prepared By: Lynn M. Ferry-Nelson	Title: Dir Regulatory Svcs
Sponsored By: Thomas P. Brice	Title: VP Regulatory & Finance
Sponsored By: Jay F. Godfrey	Title: VP Energy Mktng & Renewables

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SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO TEXAS INDUSTRIAL ENERGY CONSUMERS' NINTH REQUEST FOR INFORMATION

Question No. TIEC 9-14:

Please confirm that SWEPCO is not requesting a finding as to the proper class allocation of the revenue requirement associated with the North Central Energy Facilities in this proceeding. If the answer is anything other than an unqualified "confirmed," please explain what relief SWEPCO is requesting in this case as to the class allocation of the revenue requirement, and what impact SWEPCO believes that relief would have with respect to the establishment of rates in the future.

Response No. TIEC 9-14:

Confirmed.

Prepared By: James F. Martin	Title: Regulatory Case Mgr
Prepared By: Jacob A. Miller	Title: Regulatory Consultant Sr
Sponsored By: John O. Aaron	Title: Dir Reg Pricing & Analysis

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SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO TEXAS INDUSTRIAL ENERGY CONSUMERS' NINTH REQUEST FOR INFORMATION

Question No. TIEC 9-15:

Referring to the Direct Testimony of John O. Aaron, please provide the projected Generation Investment Recovery Rider rates that would result if SWEPCO's application in this proceeding were approved as filed and the costs incurred for the North Central Energy Facilities are as projected.

Response No. TIEC 9-15:

The projected Generation Investment Recovery Rider rates have not been calculated since the rulemaking related to the rider that is pursuant to Section 36.213 of PURA has not been finalized.

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SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO TEXAS INDUSTRIAL ENERGY CONSUMERS' NINTH REQUEST FOR INFORMATION

Question No. TIEC 9-16:

Please provide an economic analysis of the North Central Energy Facilities assuming that each of the projects have a 25-year useful life rather than a 30-year useful life.

Response No. TIEC 9-16:

The Company has not prepared the requested analysis. As described in the testimony of Company witness DeRuntz the facilities have a design life of 30 years, so that is the period used for the depreciation useful life in the Company's economic analysis.

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Prepared By: Edward J. Locigno	Title: Regulatory Analysis & Case Mgr
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Sponsored By: Joseph G. DeRuntz	Title: Director - Projects
Sponsored By: John F. Torpey	Title: Mng Dir Res Plnning&Op Anlysis