

Nick Wintermantel | Principal, Astrapé Consulting, LLC

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With more than 18 years of experience in utility planning and electric market modeling, Mr. Wintermantel has added a breadth of knowledge and leadership to Astrapé Consulting's consulting practice. His broad-based utility planning background includes Integrated Resource Planning, market price forecasting, resource adequacy modeling, RFP evaluations, environmental compliance analysis, asset management, financial risk analysis, and contract structuring. Mr. Wintermantel provides extensive knowledge in production cost simulations and evaluation methodologies used for integrated resource planning and reliability planning. As a consultant with Astrapé Consulting, Mr. Wintermantel has managed reliability and planning studies for large power systems across the U.S. and internationally. Prior to joining Astrapé Consulting, Mr. Wintermantel was employed by the Southern Company where he served in various resource planning, asset management, and generation development roles.

Experience

Principal Consultant at Astrapé Consulting (2009 – Present)

- Managed detailed system resource adequacy studies for large scale utilities
- Managed ancillary service and renewable integration studies
- Managed capacity value studies
- Managed resource selection studies
- Performed financial and risk analysis for utilities, developers, and manufacturers
- Demand side resource evaluation
- Storage evaluation
- Served on IE Teams to evaluate assumptions, models, and methodologies for competitive procurement solicitations
- Project Management on large scale consulting engagements
- Production cost model development
- Model quality assurance
- Sales and customer service

Sr. Engineer for Southern Company Services (2007-2009)

- Integrated resource planning and environmental compliance
- Developed future retail projects for operating companies while at the Southern Company
- Asset management for Southern Company Services

Sr. Engineer for Southern Power Company (Subsidiary of Southern Company) (2003-2007)

- Structured wholesale power contracts for Combined Cycle, Coal, Simple Cycle, and IGCC Projects
- Model development to forecast market prices across the eastern interconnect
- Evaluate financials of new generation projects
- Bid development for Resource Solicitations

Cooperative Student Engineer for Southern Nuclear (2000-2003)

- Probabilistic risk assessment of the Southern Company Nuclear Fleet

Major Clients

Tennessee Valley Authority	ERCOT	AESO
Southern Company Services	SPP	PNM
MISO	Pacific Gas & Electric	Entergy
Duke Energy	Federal Energy Regulatory Commission	CPUC
EPRI	GASOC	Malaysia

Industry Specialization

Resource Adequacy Planning	Resource Planning	Integrated Resource Planning
Competitive Procurement	Asset Evaluation	Financial Analysis
Environmental Compliance Analysis	Generation Development	Capacity Value Analysis
Renewable Integration	Ancillary Service Studies	

Education

MBA, University of Alabama at Birmingham – Summa Cum Laude
B.S. Degree Mechanical Engineering - University of Alabama - Summa Cum Laude

Relevant Experience

Resource Adequacy Planning and Production Cost Modeling

Tennessee Valley Authority: Performed Various Reliability Planning Studies including Optimal Reserve Margin Analysis, Capacity Benefit Margin Analysis, and Demand Side Resource Evaluations using the Strategic Energy and Risk Valuation Model (SERVM) which is Astrapé Consulting’s proprietary reliability planning software. Recommended a new planning target reserve margin for the TVA system and assisted in structuring new demand side option programs in 2010. Performed Production Cost and Resource Adequacy Studies in 2009, 2011, 2013, 2015 and 2017. Performed renewable integration and ancillary service work from 2015-2017.

Southern Company Services: Assisted in resource adequacy and capacity value studies as well as model development from 2009 – 2018.

Louisville Gas & Electric and Kentucky Utilities: Performed reliability studies including reserve margin analysis for its integrated resource planning process.

Duke Energy: Performed resource adequacy studies for Duke Energy in 2012 and 2016. Performed capacity value and ancillary service studies in 2018.

California Energy Systems for the 21st Century Project: Performed 2016 Flexibility Metrics and Standards Project. Developed new flexibility metrics such as EUE flex and LOLE flex which represent LOLE occurring due to system flexibility constraints and not capacity constraints.

Terna: Performed Resource Adequacy Study used to set demand curves in Italian Capacity Market Design.

Pacific Gas and Electric (PG&E): Performed flexibility requirement and ancillary service study 2015–2017.

CES Study for Renewable Integration and Flexibility 2015 – 2016.

PNM (Public Service Company of New Mexico): Managed resource adequacy studies and renewable integration studies/ancillary service studies from 2013 – 2017. Performed resource selection studies in 2017 and 2018. Evaluated storage.

GASOC: Managed resource adequacy studies from 2015 – 2018.

MISO: Managed resource adequacy study in 2015.

SPP: Managed resource adequacy study in 2017.

Malaysia (TNB, Sabah, Sarawak): Performed and managed resource adequacy studies from 2015-2018 for three different Malaysian entities.

ERCOT: Performed economic optimal reserve margin studies in cooperation with the Brattle Group (2014 and 2018). The report examined total system costs, generator energy margins, reliability metrics, and economics under various market structures (energy only vs. capacity markets). Completed a Reserve Margin Study requested by the PUCT, examining an array of physical reliability metrics in 2014 (See Publications: Expected Unserved Energy and Reserve Margin Implications of Various Reliability Standards). Probabilistic Risk Assessment for the North American Electric Reliability Corporation (NERC) in 2014, 2016, and 2018.

FERC: Performed economics of resource adequacy work in 2012-2013 in cooperation with the Brattle Group. Included analyzing resource adequacy from regulated utility and structured market perspective

EPRI Performed research projects studying reliability impact and flexibility requirements needed with increased penetration of intermittent resources in 2013. Created, Implemented, and Maintain a Risk-Based Planning system reliability metrics that began in 2014 and is still ongoing