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## **OVERVIEW**

Mr. Ramirez has over 12 years of experience in the energy industry with a background in transmission delivery and asset management. His expertise includes the following areas:

- Transmission Expansion and Planning Strategies
- Project Management
- Interconnection Feasibility and System Impact Studies
- Development of Process and Procedures for technical studies
- NERC Reliability Standard TPL-001-4 Transmission System Planning Performance Requirements studies
- CIP-014-1 — Physical Security Reliability Standard studies
- Operational planning analysis: seasonal assessments and outage studies
- Operational Real-Time analysis: current and next day studies

Mr. Ramirez has served as a Subject Matter Expert (SME) for compliance requirements. He has managed transmission and interconnection projects and provided guidance for the most reliable and economic expansion of transmission facilities. He understands the complexities of the evolving Bulk Electric System, physical and contractual transmission limitations, and regulatory issues. He has extensive experience with General Electric's XA/21 TSM Transmission Security Management in performing Real Time simulation studies and General Electric's Positive Sequence Load Flow (GE PSLF™) power flow program in performing transmission system simulation studies.

## **PROJECT EXPERIENCE**

### ***Transmission Operations***

Mr. Ramirez has performed long term operational planning steady state & stability analysis, including: seasonal assessments, system configuration and outage studies to determine System Operating Limits (SOL) and ensure adequate transmission system Operations. He has studied, coordinated and reviewed impacts of own and neighboring interconnected entities forced or planned outages on the Bulk Electric System. He has performed near term operational planning analysis, current and next day studies, using real-time contingency analysis software and recommended transmission system modifications to plan outages to increase system reliability and ensure optimal performance. He has provided engineering consultation and real-time recommendations on mitigation strategies for upcoming system changes or transmission system contingencies to operating personnel, Outage Coordinators, Neighboring Operations Engineers, and Regional Reliability Coordinator Engineers.

### ***Interconnection Services***

Mr. Ramirez has managed and performed transmission analyses for a wide range of generation interconnection and transmission service requests for generation asset owners. The analyses included feasibility, system impact and facilities studies that evaluated power flow and stability system impacts to determine required upgrades to provide the requested service. The studies included overseeing the

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development and validation of system models, evaluating system configuration and dispatch scenarios, sizing of reactive compensation, and determining additional equipment/upgrades necessary to maintain reliability. He has successfully guided clients through the tariff interconnection process from start to finish for wind, biomass, and solar generators.

### ***Transmission Planning***

Mr. Ramirez has performed TPL-001-4 steady state & stability studies, reviewed the standards, updated and created Process and Procedures required to perform the technical studies needed to achieve compliance. He has reviewed the CIP-014-1 Physical Security Reliability Standards (Critical Transmission Stations) and performed the required steady state & stability studies to achieve compliance. He has recommended and managed transmission projects and provided the most reliable and economic expansion for transmission facilities to customers and shareholders.

## ***PROFESSIONAL HISTORY***

Mr. Ramirez began his career with Arizona Public Service as an Intern in 2005, he was later hired as an entry level Engineer in 2006. Over a period of 9 years, he acquired experience as a Transmission Planning Engineer. In 2015, he moved to a position in operations Support Engineer with Western Area Power Administration.

## ***EDUCATIONAL AND PERSONAL***

Mr. Ramirez has a B.S. degree in Electrical Engineering from the Arizona State University and is NERC Reliability Coordinator certified.