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VP / DIRECTOR – ENGINEERING / OPERATIONS – PLANT / PROJECT MANAGER

Multisite Operations / EPC / Startups / Turnarounds / Budgets / Process Improvement / Cost Reduction / Performance Improvement / R&D / Product Development / Best Practices / Six Sigma / EHS / OSHA / TQM / HAZMAT / Vendor & Client Relations / Negotiations / Compliance / Training / RFPs / Supply Chain / SPC / CPM Scheduling / Waste Management / Planning / Capital Projects / Change Management / Plant Design

A versatile engineering executive with outstanding record improving performance while reining in costs for firms in the chemical, fossil and renewable energy, process, manufacturing, and equipment industries. At companies such as **Dow Chemical, Magma Power/Red Hill Geothermal, Senova, MEGA Systems & Chemicals** and **Tucson Electric Power**, designed and implemented high-performance solutions to cost-effectively meet complex operational, production, and regulatory requirements.

Recognized for delivering exceptional ROIs and cost savings with elegantly simple solutions to daunting technical challenges. Leading diverse teams, consistently surpassed demanding corporate and customer expectations. A true innovator with one US patent approved and another pending. Can make a strong impact by:

- Directing high-performance day-to-operations
- Maximizing efficiency, productivity, safety & reliability
- Designing & commercializing game-changing technologies
- Reengineering operations, processes & facilities to boost performance
- Assembling, mentoring & motivating high performance multidisciplinary teams

A creative innovator, natural leader, visionary strategist, intuitive problem solver and high-energy motivator. Credentials include a **BS degree in Chemical Engineering from University of Arizona**; Registered **Professional Engineer license** in CA, AZ, OH, TX and Saskatchewan, Canada; **Class A Engineering General Contractors License** in AZ. Studied towards a *Masters in Chemical Engineering at Arizona State University*.

CAREER HISTORY & SELECTED HIGHLIGHTS

Chief Technology Officer Ambire Energy, 2015-Present. Launched a Green energy startup. Developed and licensed a patent-pending technology for converting organic waste into a clean power. Contributions include:

Pioneered a patent-pending Green energy technology. Saw potential for electricity fueled by waste. Built a pilot project at Ambire to prove viability of a system using sewage/manure to indirectly produce electricity with clean water as the by-product. With patent applied for and production licenses in place, system has potential to revolutionize renewable energy globally.

VP Engineering, Paradigm Innovations by R², Inc. 2014-Present. Recruited by a startup as an SME for a wide range of industrial projects, including sustainability practices, plant design, processes, expert witness, and operations and training programs. Notable achievements include:

Developed a workshop on water sustainability practices. Paradigm was engaged by Vanluk Global to create training on emerging treatment technologies for water-intensive industries. The program, under development, will be presented to process, chemical and other EMEA industry executives at a forthcoming conference planned for Dubai, Kenya, and Bangkok in 2018.

Designed a cost-saving fix to a capacity challenge. A confidential client hired Paradigm to investigate overloads of a zero-liquid-discharge (ZLD) system that threatened shutdown of the plant. Reengineered the process operations, enabling the ZLD to operate at peak efficiency while saving the client \$300K annually.

Tucson Electric Power (TEP), a \$1.8B div. of \$6.8B Fortis Inc., 2004-2014. Steadily promoted, roles include:

Chemical Services Supervisor, 2012-2014. Promoted to direct chemical services at largest TEP site. Managed procurement, QC, inventory, training, and operations related to water/wastewater. Oversaw six-person team and a budget of \$117M. Led projects that increased capacity, efficiency, and output while slashing expenses. Significant accomplishments include:

Slashed chemical costs, saving \$29.6M. Tasked by TEP to cut chemical expenditures. Reengineered processes, resources, and workloads. Sourced new supply chain alliances and negotiated/renegotiated contracts. Stood up an in-house fuel lab to replace costly 3rd party services. Cut chemical costs 25.3% from \$117M to \$87.4M in just two years.

Cured a process flaw, saving \$18M annually Two TEP power plants generated 10x planned wastewater volume. Volunteered to troubleshoot the problem. Identified an issue with lime preparation for the scrubbers. Proposed a permanent cure that was projected to save \$1.5M per month in lime and other related costs.

Performance Engineer, 2010-2012. Promoted to build and manage a site-wide performance improvement operation. Directed a variety of process and systems improvement projects that cut costs, and increased plant productivity, reliability, and efficiency. Contributions include:

Generated \$24M in cost savings. Built and led a new TEP performance team to seek opportunities for improvement. Among other projects, reinstalled an EtaPRO SQL system, replacing a costly underperforming EtaPRO/PI platform. Exploited the system to optimize all plant operating parameters. Cut costs by \$2M/month, adding 2% to the bottom line.

Senior Engineer, 2007-2010. Directed water, coal yard, well field and plant maintenance and inspection process improvement projects. Managed staff to 65 and budgets to \$40M. Promoted from previous role as **Engineer IV**. Achievements include:

Delivered a 2nd phase \$18M expansion on budget and schedule. A multiunit TEP site needed to expand water capacity. Cured issues with existing wells. Developed and brought new wells online, increasing capacity to 26,000 GPM including a 10,000 GPM reserve. Project was completed as planned and scheduled.

Cured outages to save \$30M annually. TEP suffered excessive boiler leaks, resulting in outages costing \$2-3M per event. Conducted root cause analyses, mapping failures to a cleaning process that caused erosion of boiler tubes. Designed an automated vent solution to eliminate the issue.

Played a key role in \$2B power plant construction program. Asked to join a TEP team overseeing construction of two 450 MW coal-fired plants each valued at \$1B. Provide SEM guidance on water supply and treat systems. Ensured on-time, on-budget completion of both plants. Utilized lessons learned to improve TEP EPC contract management controls.

Earlier: President, R-TEC (a technology/engineering firm); **Product Development Manager, MEGA Systems & Chemicals**; **Product Development Manager, Senova Corp.**; and **Environmental, Health & Safety Engineer, Unit Engineer**, and **Plant Engineer, Magma Power/Red Hill Geothermal**. Began career as a **Research Engineer** at Dow Chemical. Contributions in these roles include:

Led major projects at semiconductor plant. R-TEC was hired to install of MEGA equipment at a Sumitomo Sitix facility. Directed all facets of the project. Took on additional plant management projects, curing issues with water, systems, exhaust scrubbers, boilers, and clean room seal systems. Completed all projects ahead of schedule and under budget.

Sparked a new product line. MEGA semiconductor fab clients needed slurry and solids handling solutions. Assembled a multidisciplinary team to design a new suite of products. Instrumental in securing the \$5M+ first sale from the new line to a Japanese semiconductor firm. Guided installation and commissioning, ensuring on-time startup of the client's plant.

INTELLECTUAL PROPERTY

US Patent #9,128,068 B1, for Sample Conditioning Systems and Methods.

US Patent Application #62/210,285, for an Electrochemical Power Generation Device with Re-generable fuel system.