



# Program Management

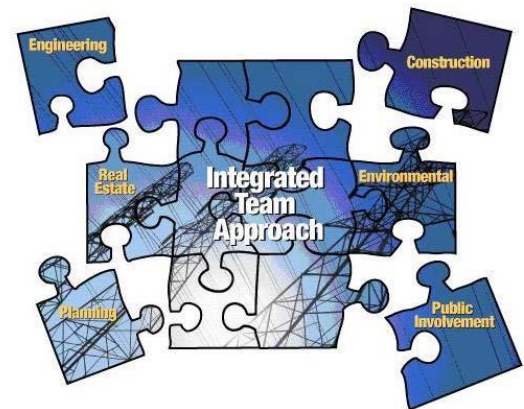
## INTRODUCTION

With a successful track record spanning more than 112 years, Burns & McDonnell is prepared to assist our Clients with expediting the delivery of your large capital programs from conception through completion. With more than 3,000 professional staff available, our team brings unparalleled expertise to a critical infrastructure market that relies upon aggressive schedules and provides no room for gambling when it comes to whom you choose to make your program a success.

Over the past two decades, Burns & McDonnell has set the standard for Program Management on large power delivery, power generation, industrial, and aviation facilities around the world. Burns & McDonnell is the only firm in the United States that can boast successful planning, design and execution management of Power Delivery projects on a multi billion dollar scale. During this time, we have assembled a team of experienced managers, specialists and sub-consultants that know, first hand, how to deliver a mega-scale program, have set the standards and defined Program Management in a unique way. Our dedicated professionals deliver superb results through outstanding team chemistry, a thorough understanding of planning, design and construction requirements, a strong schedule driven execution plan, a culture of safety and the understanding of how to make our clients successful. Burns & McDonnell is qualified to deliver *planning* excellence, *safety* leadership, *quality* assurance, *schedule* control and *budget* management.

## KEY TO PROGRAM SUCCESS

At Burns & McDonnell, our proven approach to Program Management, our industry experience and our talented employee-owners add measurable value to our client's programs, contributing to the successful achievement of program goals, on time and within budget. Our full-service, team-oriented, flexible structure allows us to offer our clients' specific solutions. Building upon our strengths in transmission, highway and facilities infrastructure, communications, engineering and design, construction management, project controls and information management, Burns & McDonnell can deliver responsive, high-quality professional services for your large capital programs. With our broad range of services and depth of expertise, our Program Management team will successfully meet the challenges faced in today's increasingly complex markets. We understand the issues involved with programs of this magnitude and are prepared to guide our clients through the many risks to a successful outcome.



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## OUR SERVICES

- Engineering oversight
- Procurement
- Construction oversight
- Schedule control
- Scope control
- Public relations
- Real estate acquisition
- Contract management
- Construction safety
- Public agency liaison

## ONETOUCHPM™

In recent decades, the successful management of large-scale programs has become increasingly complex. The federal, state and municipal environments are necessary components to commencing construction and represent one of the most significant risks to owners during project development. These stakeholders and regulatory authorities can drive both project cost and schedule to unanticipated levels as the dictated approval process is increasingly dependent upon community and public acceptance.

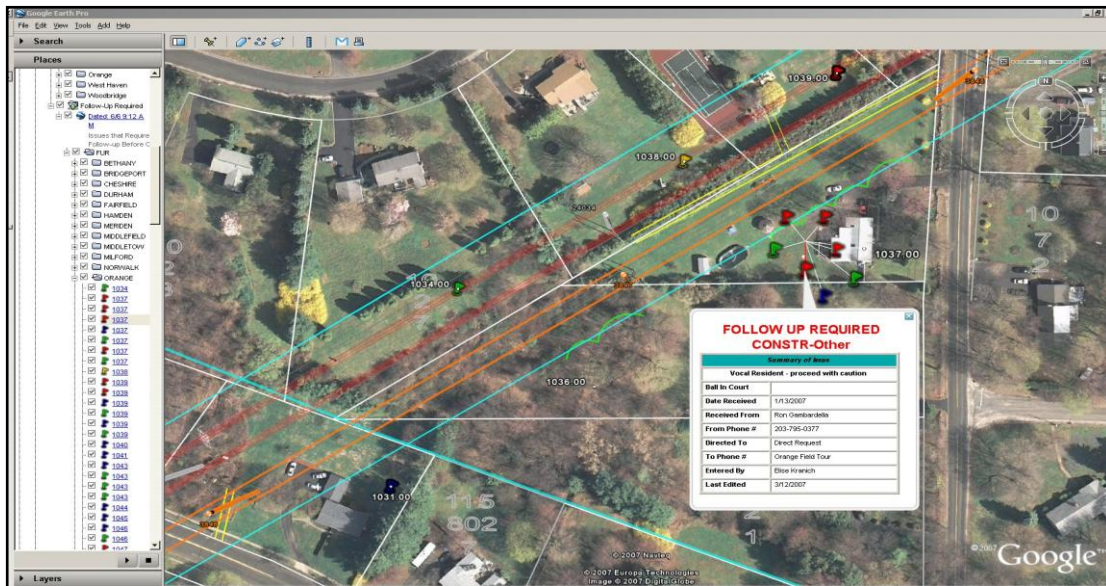
Studies have indicated that the primary component separating successful projects from mediocre projects is effective communication. Within these complex project environments, effective communication depends on a sound project controls program that includes the effective collection, organization, monitoring and presentation of relevant project information.

In response to the inherent complexity of managing all phases and activities of large projects, Burns & McDonnell has developed a Google Earth solution, OneTouchPM™ that integrates various information systems used during these projects. This state-of-the-art, award-winning approach was developed in-house for a mega-scale linear project and is currently utilized on several of Burns & McDonnell's major program management projects. By pulling information from several information systems and combining them in a single, easy-to-use interface, these projects are able to more efficiently deliver critical information to decision makers and project stakeholders. Implementing OneTouchPM™ for large program management projects has brought efficiency and risk mitigation strategies to project execution.

A few of these benefits include:

### Stakeholder “Follow-Up”

Through OneTouchPM™, stakeholder request information is displayed and communicated to field construction managers so they may proactively address issues and orchestrate customer follow-up. OneTouchPM™ allows project representatives this easy access customer information with the click of a button.



### Project Schedule

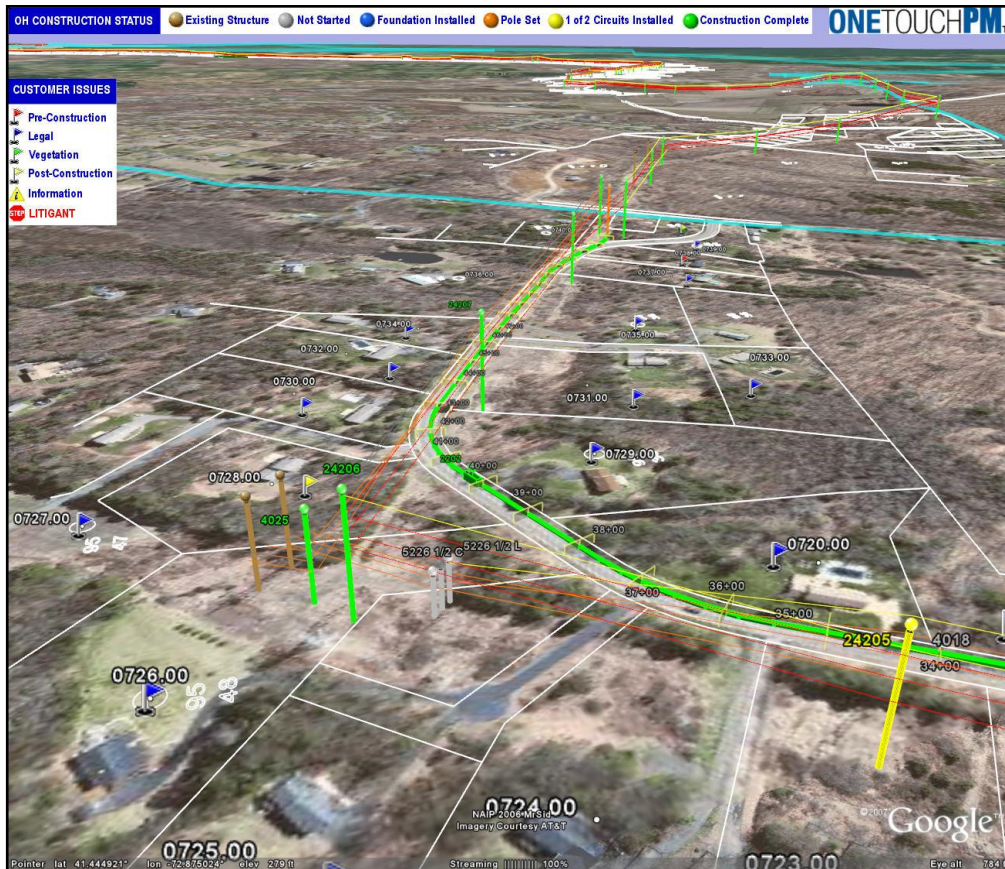
Another key benefit of OneTouchPM™ is a consolidated view of project activity status and schedule. Project managers are more accurately equipped to manage the project schedule through a geographical view of task status, task dependencies and the impact of delays.

### Construction Status Reporting

Typically, large programs lack the ability to create timely construction status reports. Status reports may be available several days to one week after the work has been executed. Eventually, the official report is distributed to the project stakeholders and reviewed weeks after the work was executed. OneTouchPM™ can narrow the gap between work execution and construction status dissemination to less than one day.

A variety of additional data is incorporated into OneTouchPM™ when available and useful. Examples of this type of data include:

- Utility Lines (gas, electric, telecommunications)
- Environmental Concerns (wetlands, contaminated soil, etc.)
- Fences
- Real Estate Issues
- Material Prep Sites
- Historical Sites



OneTouchPM™ facilitates the intuitive access to pertinent information based upon the geography of each project. The Burns & McDonnell team utilizes this tool to provide clients with effective communication, greater control and less risk in all phases of a project. OneTouchPM™ resolves a myriad of information management issues that have plagued the complex management of projects for decades serving as the benchmark for success in these demanding, fast-paced environments.

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## ONETOUCHPM™ EXPANDS

Currently, OneTouchPM™ is being utilized on a variety of environmental and permitting projects throughout the United States. This tool provides stakeholders (residents, municipal officials, business owners, etc.) with precise routing information and real time data. Recent additional features such as project vehicle tracking through GPS tools are improving construction crew management. An innovative, new reporting module also displays view-based, real-time queries and reports on-screen for each project team individual. Additionally, managers are able to establish and save customized settings for repeated use without involving a programmer or administrator.

This unique management tool provides clear and concise information to the project stakeholders on a real-time basis. This easy-to-access information improves all components of the program including real estate acquisition, community relations, environmental, permitting, construction coordination and other critical areas.

## RECENT PROJECTS

### **SAN DIEGO GAS & ELECTRIC SUNRISE POWERLINK**

Burns & McDonnell was recently selected by SDG&E to provide Owner’s Engineer and Construction Management Services for the Sunrise Powerlink Project. The project consists of a new electric transmission line between the existing Imperial Valley and Sycamore Canyon Substations, a proposed new Suncrest Substation, and other system modifications in order to reliably operate the new line. The segment from Imperial Valley Substation to the new Suncrest Substation would be a double circuit 230 kV line.

### **PPL ELECTRIC UTILITIES SUSQUEHANNA-ROSELAND 500-KV TRANSMISSION**

Burns & McDonnell was recently selected by PPL Electric Utilities to provide program management for PPL’s portion of the Susquehanna-Roseland Project. The project consists of 100 miles of new 500-kV overhead transmission line. This new line is needed to reduce overloading and alleviate congestion on existing power lines in Pennsylvania and New Jersey and will provide significant benefits for electric customers as well as strengthen the power grid throughout the region.



A core team of four Burns & McDonnell project managers relocated to PPL Electric Utilities’ office in Allentown, PA during the summer of

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2008 to begin program management for the Susquehanna-Roseland Project. This core team is supported by Burns & McDonnell's New England Regional office located in Wallingford, CT as well as the World Headquarters in Kansas City, MO. Burns & McDonnell is in the process of extending the project team to accommodate the needs of PPL Electric Utilities as the project progresses. Currently, Burns & McDonnell is supporting PPL in preliminary design, permit applications, real estate acquisition, community relations, scheduling and project controls. Construction of the Susquehanna-Roseland Project is expected to begin in 2009.

### **CENTRAL MAINE POWER THE MAINE POWER RELIABILITY PROGRAM**

In December of 2008, Burns & McDonnell was awarded the Program Management contract for Central Maine Power's Maine Power Reliability Program. The Program traverses approximately 80 communities consisting of 350 miles of new 345-kV & 115-kV new transmission facilities. The proposed new lines and facilities are needed to alleviate congestion and strengthen the reliability of the power grid throughout the region.

The Burns & McDonnell team in Maine is supported by the Burns & McDonnell New England Office located in Wallingford, CT office and the World Headquarters in Kansas City, Missouri. Currently, Burns & McDonnell is in the process of extending the Project Team to accommodate the needs of the Program and is supporting Central Maine Power with preliminary design, permit applications, real estate acquisition, community relations, scheduling and project controls. The construction phase of the Maine Power Reliability Program is expected to begin in 2010.

### **PUBLIC SERVICE ELECTRIC & GAS SUSQUEHANNA-ROSELAND 230-KV/500-KV TRANSMISSION LINE**

Burns & McDonnell was recently selected by Public Service Electric & Gas to provide Program Management for PSE&G's portion of the Susquehanna-Roseland 230-kV/500-kV Transmission Line Project.

Burns & McDonnell's is providing a core management team and professional staff (up to 18 full time people at peak) to directly provide: project management, project controls, reporting, procurement, and customer commitment tracking services; and is additionally responsible for the management and oversight to complete all licensing and permitting, real estate, environmental, cultural, archeological, right of way access and acquisition, public outreach, geotechnical,

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engineering (i.e., inside and outside plant designs), construction, construction management, testing, and commissioning aspects of the Susquehanna-Roseland 230kV / 500kV Transmission Line Project, a 500kV transmission project consisting of 46 miles of new 500kV transmission lines and rebuilding the existing 230kV transmission line on an existing Right-of-Way that includes new switching stations in Jefferson and East Hanover, NJ.

The Burns & McDonnell program management team has established a project office in New Jersey.

### **NORTHEAST UTILITIES SYSTEM MIDDLETOWN/NORWALK BULK TRANSMISSION**

Burns & McDonnell is providing Program Management of the Middletown/Norwalk Bulk Transmission Project, a \$1 Billion project. The current energization date for the project is targeted for December 2008 and the Program Management should be completed during the 4<sup>th</sup> quarter of 2009.

The project includes nearly 70 miles of new 345-kV transmission line of which 24 miles will be solid dielectric underground cable. Middletown/Norwalk is the largest transmission capital project in the country and the first application of program management in the power delivery industry.

Program management provides for all an owner's project delivery needs related to a large and complex effort involving the construction of multiple facilities over a several year period. The program manager is an agent of the owner and serves as a single point of management for the entire process of completing the project(s). The program manager provides detailed managerial support and added technical value to the owner and is normally involved in the earliest stages of a project. They offer current planning methodologies, public involvement and testimony capabilities, design expertise, knowledge of construction methods and pricing, an understanding of competitive market conditions, and effective scheduling and cost control systems. Program management is successful when the project's planning, permitting, design and construction phases are effectively integrated into a single process.

For the past three years, Burns & McDonnell has worked on the preliminary phases of the Middletown/Norwalk project and, together with NUSCO staff, successfully obtained a unanimous decision in favor of the project application by the Connecticut Siting Council. Burns & McDonnell has opened a Connecticut office that will provide immediate local access to some of the critical human resources needed



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to be successful on an effort of this magnitude. In addition, Burns & McDonnell's Kansas City office will provide technical expertise and executive support.

In response to the inherent complexity of managing all phases and activities of the \$1.1 billion Middletown-Norwalk Project, Burns & McDonnell developed the patented, program management solution, OneTouchPM™ to integrate various data information systems. This state-of-the-art, award-winning approach was developed in-house to profile the project's 69-mile footprint, and to provide the project team with instant access to the project's real time data including but not limited to construction status reports, real estate acquisition statuses and stakeholder inquiries. As this project affected over 7,000 private property owners and businesses in 18 different cities and towns, significant coordination was required to successfully manage all elements. Through a simple Internet connection, OneTouchPM™ provided the project team with real-time information making it easy to efficiently foresee and address any project-related issues. This real-time data contributed to the program's one year ahead of schedule completion date and significant budget savings.

In response to the successful management and completion of this mega-scale program, Northeast Utilities awarded Burns & McDonnell with the role of program manager for another major transmission upgrade; the \$1.5 billion New England East-West Solution (NEEWS) program. NEEWS is intended to upgrade the transmission capacity in Massachusetts, Rhode Island and Connecticut and meet the reliability needs of southern New England. Burns & McDonnell, Northeast Utilities and their contractors are working as an integrated team on all aspects of the program.

### **NORTHEAST UTILITIES SERVICE COMPANY GLENBROOK CABLES PROJECT**

Burns & McDonnell was selected by Northeast Utilities Service Company (Connecticut Light and Power [CL&P]) as a Program Manager of Choice for the Glenbrook Cables Project. Program management provides for all an owner's project delivery needs as they relate to a large and complex effort involving the construction of multiple facilities over a several year period. The program manager is an agent of the owner and serves as a single point of management throughout the lifespan of a project(s). A program manager provides detailed managerial support with added technical value to the owner and is normally involved from the earliest stages of a project.

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During the initial stages of the project CL&P retained Burns & McDonnell to assist in the preparation of an application to the Connecticut Siting Council (CSC) for a Certificate of Environmental Compatibility and Public Need (CECPN) to construct a new 115-kV double circuit transmission line and associated substation upgrades. The 9-mile project extends between the existing Glenbrook Substation in Stamford, CT to the existing Norwalk Substation in Norwalk, CT.

Burns & McDonnell acted as the primary consultant providing preliminary engineering and design services and identification of a preferred route as part of the CSC regulatory process. Burns & McDonnell assisted CL&P in the identification and evaluation of routes, development and participation in the public involvement process, the compilation of municipal recommendations, and the preparation of the CSC application documents.



Underground route alternatives were identified by Burns & McDonnell for consideration and evaluation. Routes along existing transmission, rail corridors and public streets and highways were considered and evaluated for underground construction based on sound environmental, social and engineering factors typical for similar voltage lines in the region. Burns & McDonnell also identified appropriate locations for river crossings and determined necessary methods for the crossings to minimize impacts. Burns & McDonnell used geographic information system (GIS) technology to identify and map constraints and analyze routes.

Burns & McDonnell provided preliminary engineering support to CL&P for the design and cost estimates for proposed underground alternatives. Burns & McDonnell also assisted with the preliminary design and cost estimates for the substation upgrades.

Burns & McDonnell team members provided expert testimony at public hearings following the submittal of the application to the CSC. Together with NUSCO, Burns & McDonnell successfully obtained a unanimous decision in favor of the project application by the Connecticut Siting Council.

For the Program Management phase, Burns & McDonnell has opened a 26 person office in Connecticut to provide our client with immediate local access to the critical human resources needed to be successful on an effort of this magnitude. On site resources include public relations, safety, scheduling, budgeting, procurement, discipline engineering, inspection, construction management,

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environmental field monitoring, document control and project management. The Program Management office is responsible for developing the project execution plan and implementing its processes and procedures. Project execution includes the management of the project scope, schedule, budget, contracting strategies, risk, procurement, change orders, phasing, project reporting and control plans, QA/QC, permitting and environmental compliance, community relations, safety plan and real estate acquisition.

### **NORTHEAST UTILITIES SERVICE COMPANY NEW ENGLAND EAST-WEST SOLUTION (NEEWS)**

Burns & McDonnell was selected by Northeast Utilities Service Company as program manager for the NEEWS projects. Program management provides for all the owner's project delivery needs as they relate to a large and complex effort involving the construction of multiple facilities over a several year period. The program manager is an agent of the owner and serves as a single point of management throughout the lifespan of a project(s). A program manager provides detailed managerial support with added technical value to the owner and is normally involved from the earliest stages of a project. In addition to the program management responsibilities Burns & McDonnell is responsible for the detailed design.

#### **The Interstate Reliability Project**

The Interstate Reliability Project (IRP) consists of 41 miles of 345-kV overhead transmission line and three substation upgrades. IRP runs from the Card Street Substation near Wilimantic, CT in a north-easterly direction towards the Rhode Island border. IRP is currently in the preliminary siting phase, with construction expected to begin in 2010.

#### **The Greater Springfield Reliability Project**

The Greater Springfield Reliability project (GSRP) consists of 35 miles of 345-KV and 59 miles of 115-kV overhead transmission line running north from Bloomfield, CT to Ludlow, MA. GSRP also includes one major substation upgrade in Connecticut and twelve upgrades in Massachusetts. GSRP is currently in the siting process and land acquisition phase, with construction expected to begin in the third quarter of 2010.

#### **Central Connecticut Reliability Project**

The Central Connecticut Reliability Project (CCRP) consists of 37.2 miles of 345-kV overhead transmission lines. CCRP also includes three major substation upgrades.

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## **SOUTHERN CALIFORNIA EDISON TEHACHAPI RENEWABLE TRANSMISSION PROJECT (TRTP SEGMENTS 1, 2, 3)**

As one of the largest electric utilities companies in the nation, Southern California Edison (SCE) serves more than 13 million customers in their 50,000 square mile region of operation. SCE is dedicated to improving their transmission and distribution system by updating their current systems and adding new systems as necessary. In order to satisfy the growing demand for power in the Southern California area, SCE needed to connect the Southern California area to the Palo Verde Generating Station near Phoenix. They also required transmission from wind farms under construction in the Kern and Los Angeles Counties to their customers.



In order to supply a sufficient amount of power to their customers, SCE required the completion of two projects known as the DPV2 project and the Antelope Country project.

SCE required 230 miles of 500-kV transmission line to be constructed from the Palo Verde Generating station, a nuclear plant near Phoenix, to a region north of Palm Springs, California. This transmission line ran within one of SCE's existing transmission corridors and parallel to the Devers-Palo Verde No. 1 route (DVP1), hence the name for the new line DVP2.

In addition to the increased energy supply from the Palo Verde station SCE desired 86.8 miles of 220-kV and 500-kV transmission line to bring consumers power from wind farms in Kern and Los Angeles counties. This project, known as the Antelope Country project, was a demonstration of SCE's dedication to providing renewable sources of energy to its customers. Along with the 86.8 miles of transmission line, the Antelope Country project required Burns & McDonnell to modify several of SCE's existing substations as well as construct two new ones.

Management of the project was done from Burns & McDonnell's San Diego regional office. This provided management from people who were familiar with local California construction and environmental regulations, allowing the smoothest implementation of these major projects.

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## **TRI-STATE GENERATION & TRANSMISSION ASSOCIATION EASTERN PLAINS TRANSMISSION PROJECT**

The Eastern Plains Transmission Project, a proposed joint construction project between Tri-State and the Western Area Power Administration, will include over 1,000 miles of new 230, 345 and 500-kV transmission lines and ten (10) new and upgraded substations. This major transmission project expands into western Kansas and eastern and southern Colorado.

Tri-State Generation and Transmission Association is a wholesale electric power supplier owned by the 44 electric cooperatives that it serves. Tri-State generates and transports electricity to its member systems throughout a 250,000 square-mile service territory across Colorado, Nebraska, New Mexico and Wyoming. Serving more than 1 million consumers.

Western Area Power Authority proposes to participate in the construction of the Eastern Plains Transmission Project with Tri-State Generation and Transmission Association, Inc., in exchange for capacity rights on the transmission lines. These rights would provide Western with approximately 275 megawatts of system capacity on the proposed transmission system. Western needs this additional transmission system capacity to provide more economical, reliable, diverse and flexible power delivery to customers.

Tri-State determined the project was needed to provide additional transmission system capacity to deliver more economical, reliable, diverse and flexible power to the public.

Burns & McDonnell was contracted by Westminster, Colo.-based Tri-State Generation and Transmission Association to act as Owner's Engineer.

This project would be Tri-State's first 500-kV system. As Owner's Engineer, Burns & McDonnell was to prepare bid documents and would manage design and construction activities for several large EPC contracts for several greenfield substations and a DC converter station. Burns & McDonnell lead in the development of design criteria and numerous vendor interviews in order to establish a procurement strategy for the 500-kV system.

This project is currently on hold while Tri-State develops alternative sources of generation.

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## **OKLAHOMA GAS AND ELECTRIC WIND SPEED PROJECT**

Burns & McDonnell was recently awarded the Oklahoma Gas and Electric Wind Speed Project in early 2008. The Project will consist of 125 miles of 345 kV overhead transmission line and be managed by Burns & McDonnell's Houston Office representing approximately \$17 million of the \$250 million project.