Submitted To: The City of Boulder, Colorado

Proposal for Recommissioning Pilot Program
RFP No. 37-2009

Submitted By:

Nexant

September 3, 2008

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September 3, 2009

Calder Grey
City of Boulder
Purchasing Division
1777 Broadway
Boulder, CO 80302

RE: RFP for the City of Boulder Recommissioning Pilot Program (RFP No. 37-2009)

Dear Mr. Grey:

Nexant Inc. is pleased to provide the attached response to the City of Boulder's *Request for Proposal – Recommissioning Pilot Program* dated May 29, 2009. Nexant is a recognized leader in providing recommissioning and energy auditing services and in utility program design and implementation. The team we have assembled for this project has extensive experience conducting the requested services, and these attributes, coupled with our local Boulder presence, uniquely positions us for this scope of work. Working with Nexant, the City of Boulder will be placing itself in the best position to maximize the success of this pilot program and future energy efficiency programs and to achieve its energy reduction and greenhouse gas emission goals.

Project Lead Contact Information:
Lynn Roy, Senior Project Manager
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We look forward to the opportunity to continue our mutually beneficial relationship with the City of Boulder and working together towards the success of this endeavor.

Sincerely,

Lynn Roy,
Senior Project Manager

Attachments: Nexant RFP Response (3 copies, printed on 100% post-consumer recycled paper)

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Section 1 Nexant Recommissioning Team

1.1 INTRODUCTION

Nexant, along with its subcontractor Control Service Center, Inc (CSC) is pleased to submit this work scope proposal to provide services for the City of Boulder's Recommissioning Pilot Program (ReCXPP), RFP No. 37-2009. Nexant will utilize all of our resources and engineering capabilities to provide high quality, responsive work products as part of this effort for the City of Boulder (city). This proposal outlines our team's experience and capability to provide the services requested in the Scope of Work.

Nexant's Energy and Carbon Management business unit has conducted energy audits, recommissioning (RCx), technical reviews and measurement and verification (M&V) activities for thousands of energy efficiency measures on behalf of end-use customers and utilities around the country. The Nexant team, located in Boulder, has been actively supporting local demand side management (DSM) programs since the early 1990's. Currently, staff members located in the Boulder office are performing energy audits for the Xcel On-Site Energy Assessment Program, are a service provider for Xcel's Recommissioning Program, and are also the M&V contractor for the majority of Xcel's commercial and residential prescriptive and custom DSM programs. Additionally, Nexant is actively involved in the City of Boulder's ClimateSmart at Work Program and the Colorado Governors' Energy Office multiple energy efficiency programs.

Nexant's team will be located out of our Boulder office. Because our office is centrally located in downtown, we can minimize the greenhouse gas impact of implementing this program by walking, biking, or using mass transit to visit and perform work at these facilities, which is commonly practiced for the Xcel Energy work we perform in Boulder.

The remainder of this section highlights some of Nexant's unique strengths as they relate to the requested recommissioning services and outlines our staff and available resources that will allow us to successfully provide these services. The balance of the proposal outlines team qualifications, our proposed approach to the scope of work, our proposed hourly rates and resumes for key staff and requested exceptions to the contract terms and conditions.

1.2 NEXANT TEAM STRENGTHS

Recommissioning services are powerful but underutilized tools for enhancing building operation and increasing building effectiveness and efficiency with no-cost or low-cost measures and practices. In fact, capital investments, in the absence of adequate RCx and operator training, often do nothing to improve a building and certainly do not create an economically advantageous mix of efforts. Too often, systems are replaced or abandoned at great expense to the building owners when quality RCx could have achieved superior results.

Effectively implementing and coordinating the RCx process is critical to meeting the City of Boulder's goals for the ReCXPP. Nexant is strongly committed to providing excellent services to the city and we are highly qualified to perform the requested scope of work based upon the following attributes:

- Knowledge of City of Boulder commercial buildings. Nexant has been providing energy assessment services to City of Boulder's customers for three years through the city's ClimateSmart at Work Program and Xcel Energy's Onsite Assessment Program. We are the sole provider of energy audits for City of Boulder customers and have completed 140 energy audits on City of Boulder customer buildings to date. This program history positions us with knowledge of the city's building stock and the potential for recommissioning projects for buildings that have already been audited.
- Recommissioning Program Design Experience. Nexant has designed and managed numerous RCx programs for utilities including Xcel Energy, Rocky Mountain Power (i.e., PacifiCorp), Pacific Gas & Electric Company (PG&E), Sacramento Municipal Utility District (SMUD), and CenterPoint Energy. We have also provided RCx services to a variety of clients as large as Boulder County and the State of CA to single owner occupied facilities.
- Tested and approved recommissioning and energy auditing tools. Nexant has established savings calculation tools and algorithms for numerous technologies and energy efficiency and RCx measures to help provide accurate and cost-effective assessment services.
- Local engineering team. The Nexant team consists of experienced local engineers who have been providing RCx, energy auditing and HVAC service, controls, and maintenance services for City of Boulder customers for the past several years. This allows us to leverage existing and ongoing infrastructure to reduce costs and increase participation in the program. CSC has been providing HVAC service, controls, and maintenance services to Boulder customers since 1981.
- Expert knowledge of RCx practices**.** Our team has experience in all phases of the building RCx process. We have completed and/or provided deep technical oversight on building RCx projects for over 200 buildings since 2002. We have not only studied and reviewed RCx practices, but have logged hundreds of hours using and exercising the tools, procedures, and protocols that collectively make up the art of building RCx as it stands today. We have developed many tools to identify low-cost energy measures and operational and maintenance improvements, including an engineering assessment approach used in conjunction with energy benchmarking to select the best candidates for RCx. Nexant's expertise in energy savings M&V, along with training of building staff, ensures persistence of the RCx measures implemented.
- Professional expertise with commissioning practices. Our team members regularly act as Commissioning Authority for both new construction and retrofit projects. Proposed project team members have acted as commissioning authority for multiple projects, including large-scale commercial buildings seeking LEED certification. We comply with industry best practices of developing and implementing functional testing plans.
- Experience with energy management systems (EMS) and building controls. Nexant personnel and CSC staff have many years of experience working with building control

systems, including installation, programming, testing, and troubleshooting and calibration of EMS sensors. Because the single largest focus of commissioning, whether in a new or existing facility, focuses on HVAC and other mechanical systems and controls, our commissioning efforts always include significant emphasis and work on EMS systems. Additionally, Nexant personnel have designed EMS systems while working as a subcontractor to controls vendors, have done primary research on optimal control algorithms and methods, and have been at the center of project commissioning and start-up projects. All of this is in addition to our extensive experience with project M&V, metering, and monitoring. As a result of this experience, we are well versed in the elements common to all control systems and understand the nuances of many popular control system brands.

- Project management experience. Nexant provides professional project management services for commercial, industrial, government, and utility clients. Having coordinated and managed hundreds of projects, some of them involving subcontractors and/or Trade Allies, we know that successful project management is based on sound planning, monitoring, and control. We have flexibility, expertise, and resources needed to oversee the coordination of a variety of projects simultaneously.
- Codes expertise. All Nexant professional staff members are thoroughly familiar with Colorado building and energy codes and at a minimum, follow those standards.

1.3 PROPOSED PERSONNEL AND MANAGEMENT STRUCTURE

Nexant has assembled a well-qualified and experienced team to perform the identified services. This team includes individuals who have extensive experience in current and previous RCx projects and, in particular, with buildings within the City of Boulder. Our team is composed of staff members all based in our Boulder office. With more than 20 engineers located in the Boulder office, we are well positioned to immediately begin work on this program to help the city achieve its program goals as quickly as possible. While four Nexant engineers have been identified as the main RCx team, all engineers in Nexant's Boulder office have experience in energy auditing and RCx activities. As necessary, we will tap into these additional resources to make sure the project is completed on-time and within budget.

Lynn Roy will provide overall project oversight while Jim Zarske will be the day-to-day project manager and RCx technical lead. Jim will be responsible for project identification, tracking, reporting and with his 12 years of engineering experience, will be a strong technical leader to the team. Other Nexant staff involved in the day-to-day program activities includes Russ Chitwood, John Milton, and Michael Kaar. CSC will provide the implementation expertise to the project. Led by James Strouse, CSC has four staff members dedicated to this project. CSC staff's HVAC field experience ranges from nine years to more than 40 years. Additional detail of CSC's background and team biographies are located in Section 1.4 – Subcontracting Plan.

The following provides a short biography of each identified team member. Figure 1.1 illustrates our proposed project team organization. Resumes and hourly rates for all team members are included in Appendix A.

Project Manager and RCx Technical Lead: Jim Zarske, P.E., CEM, LEED AP

Jim Zarske, Project Manager at Nexant, has nearly a decade of engineering experience with focus on building energy efficiency and sustainable design, energy modeling, HVAC design, commissioning and retrocommissioning. He is currently the Project Manager for assisting the Governor's Energy Office (State of CO) in overseeing its Energy Service Performance Contract (ESPC) work. He also oversees the retrocommissioning on seven state-owned buildings in Southern California for the State of CA – Department of General Services. For over two years, Jim was the project manager overseeing work performed for Rocky Mountain Power's FinAnswer program, which included scoping level (ASRHAE Level I) and investment grade energy audits (ASRHAE Level II), energy performance verifications, final inspections, and energy design assistance for new construction projects. Jim has both developed and implemented retrocommissioning projects for existing buildings and acted as commissioning authority for new construction, including retrofit and LEED projects. He has performed energy audits in numerous building types (office buildings, schools, industrial facilities, hospitals, commissaries, and others) to identify energy efficiency measures; has modeled over 100 different new and existing buildings using eQUEST; and has developed spreadsheet simulation tools to model specific controls and capital retrofit energy efficiency measures.

Management Oversight and Support: Lynn Roy

Lynn is a Senior Project Manager in Nexant's Boulder office, where she provides management support and technical oversight for numerous projects. She currently oversees Xcel Energy's On-Site Energy Assessment Program and On-Going M&V Program, the City of Boulder ClimateSmart at Work Program, market potential studies for NorthWestern Energy, Tri-State G&T, and Ameren Illinios, and Nexant's involvement in the M&V activities for the Pentagon Renovation Project. Lynn has over seven years experience as a Program Manager for a wide-range of utility DSM programs, including program design and implementation, program progress reporting and regulatory support. Lynn has managed several evaluation projects for investor-owned utilities across the company, evaluating more than 20 residential and non-residential programs. She has extensive knowledge of and has been involved with Xcel Energy's programs for the past 7 years.

Recommissioning Team: Russ Chitwood

Russ is a Project Manager in Nexant's Boulder office, where he provides technical consulting to industrial clients, business owners and ESCOs as participants in utility sponsored energy efficiency programs. He performs and oversees staff who conduct due diligence reviews of submitted program application materials, performs M&V activities to determine savings and coordinates a network of vendors, engineers and architects who participate in utility sponsored programs, including a Commercial and Industrial (C&I) Custom Efficiency program and a new

construction Energy Design Assistance program. Russ' experience includes energy efficiency program implementation, M&V, utility rate analysis, energy simulation modeling, life cycle cost analysis, facility auditing, and project management.

Recommissioning Team: John Milton

John is a Project Engineer in Nexant's Boulder office where he is currently the program manager for the Xcel Energy On-Site Energy Assessment Program. John manages all facets of the On-Site Assessment Program including weekly correspondence with Xcel Energy managers, coordinating audit scheduling and efforts with the team of Nexant's auditing engineers, program tracking, and budget control. Because of John's role for the Xcel Energy Onsite Assessment Program, he will provide background knowledge of audits performed within the City of Boulder and the identification of potential RCx candidates.

Recommissioning Team: Michael Kaar

Michael is a Project Engineer in Nexant's Boulder office. He provides technical consulting to utility companies, and the commercial and industrial clients who participate in utility-sponsored energy efficiency programs. Since joining Nexant he has worked in Xcel Energy's Onsite Assessment and the City of Boulder's ClimateSmart program performing walk-through energy audits and analysis. He also provides M&V support of various energy saving projects. Prior to joining Nexant, Michael designed and implemented control systems in numerous projects nationally for Siemens Building Technologies. He was also responsible for issuing submittals, materials procurement, field personnel coordination and assistance with start-up commissioning.

1.4 SUBCONTRACTING PLAN

Nexant has engaged Control Service Center, Inc. (CSC) for the Implementation portion of the RCx measures identified through our RCx facility assessments. CSC has 28 years of experience in identification of RCx opportunities and the implementation of all types of measures that reduce customers' energy use and costs. CSC is a family-owned, small business that specializes in servicing the HVAC needs of their customers' commercial facilities throughout Boulder Valley. CSC's headquarters is located in the city and their trucks are frequently seen on the streets of Boulder.

Implementation Team: James Strouse

Jim, the president of CSC, joined the company in January of 1982 as a service technician. He spent the next 20 years in the field working on all types of commercial and residential equipment. Jim participated in numerous factory training programs and became licensed in all major control systems such as Carrier Gen II and Gen III VVT. In 2000 Jim became part owner and Vice President of Control Service Center. In 2007 he obtained 100% ownership of CSC and was named President. He continues to receive training in both business administration areas and also the latest in the HVAC industry.

Implementation Team: Brandon Strouse

Brandon Strouse, CSC's General Manager, started with the company in June of 2000 as an apprentice service technician. In February of 2007 he was promoted to service manager. He graduated from Friends University in Wichita, KS in May of 2007 with a Business administration degree and receiving several academic awards. In February of 2008 he was promoted to General Manager, and one year later, in February of 2009, became part owner. He continues to receive training in both business administration areas and also the latest in the HVAC industry.

Implementation Team: Wes Hill

Wes Hill, Service Technician, began his career in the HVAC industry in the Navy working on submarines. Afterwards, he joined the HVAC union and received further training and experience. He has been in the HVAC industry for 49 years. Wes is experienced in a vast majority of control and mechanical systems and has worked for several commercial based companies on some of the largest buildings in the Denver metro area. He is licensed in Carrier VVT and holds a NATE certification. Wes first joined CSC in March of 1999. After leaving the company in 2000 for a position in management, he returned in October of 2005.

Implementation Team: Michael Barone

Michael Barone, Service Technician, started in the HVAC industry in 1977. His expertise in refrigeration and control systems is highly sought after in the HVAC industry. He is licensed in Carrier VVT and has a great deal of training and experience in installing and troubleshooting Trane control systems.

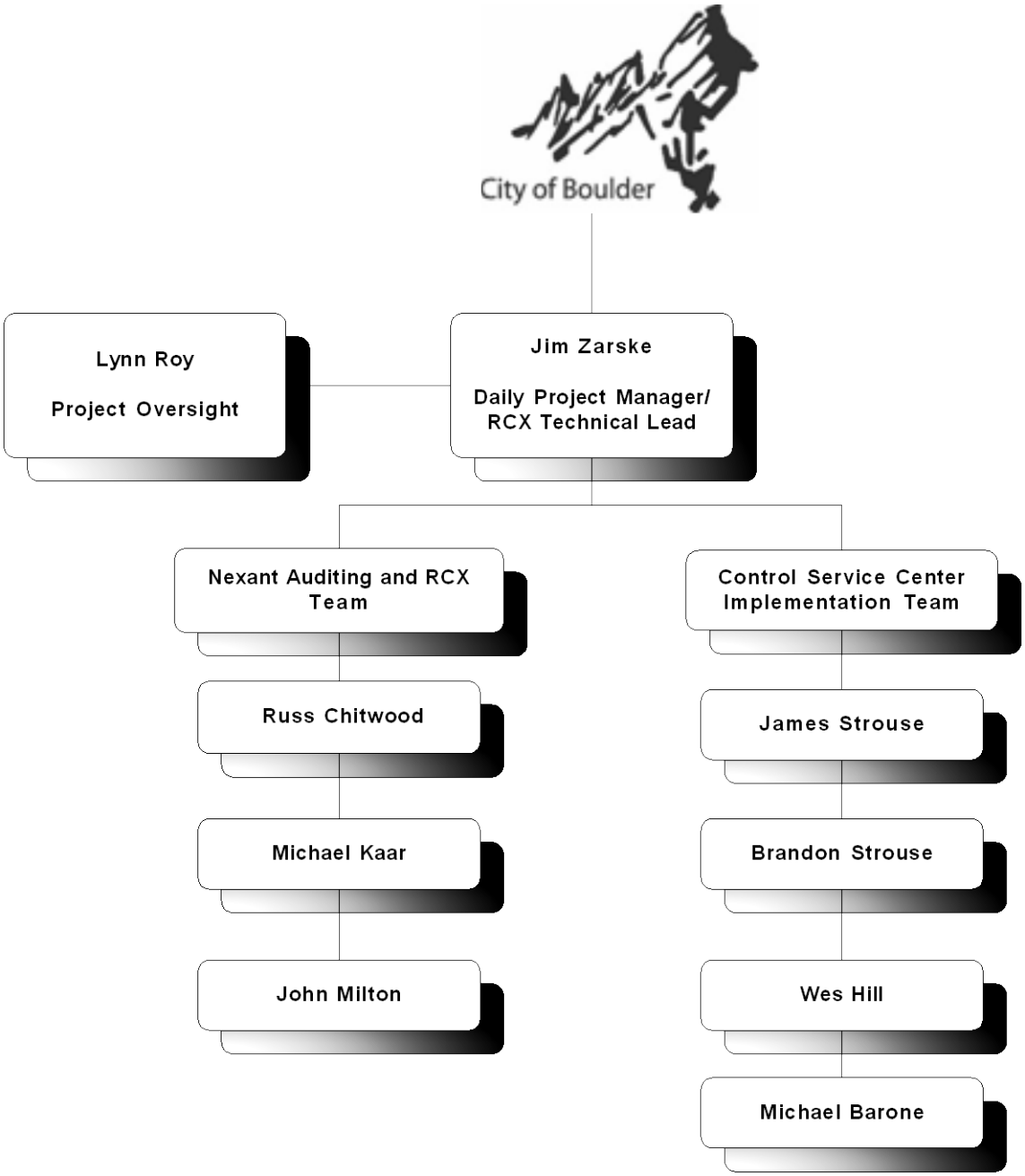

Figure 1.1: Nexant Recommissioning Management Structure

Nexant brings a unique blend of sales, marketing and technical expertise in all phases of energy efficiency and RCx program development. Nexant has designed, supported and implemented energy programs in Colorado and throughout the country. Our team is also familiar with the local Boulder market, including existing and proposed programs, and the key market participants and players. We are excited about the opportunity to share with the City of Boulder our experience – and demonstrated results – in promoting, implementing and supporting a wide range of commercial energy efficiency programs across the U.S.

We know that like all organizations, commercial facilities can improve the way they manage their facilities, improve their operational focus on energy and make investments that reduce energy costs. Through the City of Boulder's RCx Pilot Program they can also serve as sector leaders in promoting and implementing energy efficiency practices.

As a re or retrocommissioning agent for owners or operators of existing facilities, Nexant applies proven investigative, calculation and modeling techniques to identify poorly operating systems and equipment, determine the root cause of persistent operational problems, and develop corrective measures. Nexant has specific and long term experience working with end users to promote and influence the improvement of energy efficiency in existing buildings.

2.1 NEXANT RECOMMISSIONING PROJECT EXPERIENCE

Nexant has been a leader in the RCx industry since 1995 through the development of utility programs that leverage the benefits of building system tune-ups. Currently, staff located in the Boulder office are performing energy audits for the Xcel On-Site Energy Assessment Program, are a service provider for Xcel's Recommissioning Program, and are also the M&V contractor for the majority of Xcel's commercial and residential prescriptive and custom DSM programs. Additionally, we are actively involved in the City of Boulder's ClimateSmart at Work Program and the Colorado Governors' Energy Office multiple energy efficiency programs.

Nexant is also currently providing turnkey recommissioning program design and implementation services to Rocky Mountain Power, ComEd, and Wisconsin Focus on Energy.

A small subset of projects where we have done or are doing representative RCx work includes:

California Department of General Services (2007 – present)

Nexant is providing retrocommissioning services to the Department for seven state buildings totaling over 600,000 sq. ft. in Southern California. This project encompasses planning, investigation, implementation, training, and project hand-off phases. Nexant is surveying each building for low-cost/no-cost RCx measures, developing baseline energy usages, calculating the energy savings and simple payback for the RCx measures, performing functional testing, maintaining a master list of deficiencies, overseeing implementation, providing follow-up M&V services, preparing a Systems Manual, and training the building maintenance staff. The project includes helping participants apply for incentives from their electric and gas utilities.

Rocky Mountain Power RCx Program Design and Management (2005 – present)

As the turnkey provider for Rocky Mountain Power, Nexant has designed and is implementing the recommissioning program, which offers no-cost recommissioning services that help the participants identify low-cost and no-cost energy conservation opportunities. When recommissioning is complete, participating buildings are expected to save energy and demand primarily during the utility's peak summer period.

Beginning in 2005, the recommissioning program has helped participants realize approximately 10.2 million kWh/year from 4.3 million sq. ft. of cumulative building floor space. Participants in the program include high-rise office buildings, state-owned facilities, and process and manufacturing facilities ranging from approximately 45,000 sq. ft. to 900,000 sq. ft.

Nexant selected six qualified program service providers through a competitive bid process, and provides guidance and oversight to these firms to ensure service consistency and quality to meet program reporting and M&V requirements. The typical measures identified through the recommissioning process include:

- Optimize Equipment Schedules
- Optimize Lighting Schedules
- Optimize Air-Side and Water-Side Economizer Operation
- Static Pressure Reset Strategy
- Chilled Water Supply Temperature Reset Strategy
- Optimize Indirect-Direct Evaporative Cooler (IDEC) Operation

Nexant's program services have included:

- Program design, which includes development of rules, procedures, reporting requirements, marketing strategy, and budgeting
- Development of program M&V requirements, guidelines, and tools
- Procurement, which includes issuing the RFP and selecting service providers
- Project quality assurance for program services, which includes making Operations and Maintenance (O&M) recommendations, and assistance with engineering calculations
- Recommissioning: planning, investigation, implementation, and verification.

ComEd Smart Ideas for Your Business Retro-commissioning Program Design and Management (2008 – present)

As the turnkey provider for this utility program, Nexant has designed and is implementing the program, which offers no-cost retrocommissioning services for participants. The utility's goal is to achieve more than 18,500 MWh in annual energy savings over the first three program years.

Nexant provided the RCx services to four facilities during the pilot program year. These buildings are currently implementing measures that will result in annual energy savings exceeding 1.5 MWh. Additionally, Nexant has selected eight qualified program service providers through a competitive bid process, and provides guidance and oversight to these firms to ensure service consistency and quality and to meet program reporting and M&V requirements.

Our program services for this program include:

- Design, including development of rules, procedures, reporting requirements, marketing strategy, and budgeting
- Development of program M&V requirements, guidelines, and tools
- Procurement, including issuing the RFP and selecting service providers
- Project quality assurance for program services, O&M recommendations, and engineering calculations
- Retro-commissioning services.

Focus On Energy Recommissioning Program (2007 – present)

Nexant was retained by Wisconsin Focus on Energy (FOE) to support the development and operation of a retro-commissioning program for existing commercial buildings in the state of Wisconsin. During the development phase, Nexant's tasks include:

- Providing program design guidance by helping to establish the program's goals and objectives, identify and address local market barriers, specify customer eligibility requirements and screening methodology, establish incentive structures and levels, and determine program procedures
- Developing program documents, which include program manuals, application forms, retro-commissioning procedural forms (e.g. a site assessment form, diagnostic and calculation plan templates), and report templates
- Conducting retro-commissioning service provider training to ensure appropriate program marketing, persistent results, appropriate quality of work products, and realistic customer expectations

During the operation phase of the program, Nexant's tasks include:

- Completing due diligence and technical review of retro-commissioning projects to ensure accuracy, quality, and consistency
- Providing retro-commissioning services as necessary

225 W. Santa Clara Building, San Jose, CA (2008 – 2009)

Nexant is performing RCx activities at the 225 W. Santa Clara Building in San Jose, under Pacific Gas and Electric (PG&E) Company's Core Retro-Commissioning Program for commercial and industrial facilities. The 225 W. Santa Clara is a 16-story multi-tenant office

building that was built in 2002 and occupies approximately 340,000 sq. ft. The building is cooled by two water-cooled 400-ton centrifugal chillers. The computer and server rooms that account for approximately 5% of the total building area are cooled by water-source heat pumps. The facility is heated by two Ajax 3000 MBH boilers. The HVAC and lighting systems are controlled by an energy management control system.

Boulder County Recommissioning (2006 – 2007)

As part of a retrocommissioning project for the County of Boulder, Nexant identified capital improvements and performed data collection, re-commissioning analysis, and implementation. The project included 12 buildings, comprising a total of 575,000 square feet of facilities, which used over $1,000,000 in energy each year. In Phase 1 we conducted energy audits to identify capital improvement opportunities, and analyzed energy use. In Phase 2, we developed a detailed commissioning plan for each site, installed submeters and data loggers, programmed the EMCS to provide controls history reports, and provided recommendations for improved operation, maintenance, and control strategies. Phase 3 included oversight of the recommended implementation, training city staff, development of M&V strategies, and development of comprehensive operating plans. In addition to re-commissioning the county buildings, Nexant ensured that all commissioning requirements for LEED EB Certification of a subset of county buildings have been fulfilled.

One Boulder Plaza Recommissioning (2006-2007)

Nexant completed a comprehensive recommissioning project for two office buildings totaling over 200,000 square feet in Boulder, Colorado. This study relied heavily on data collection utilizing the HVAC control system, and stand-alone data loggers, as well as functionally testing equipment and systems. Although the complex was less than five years old and includes state-of the art HVAC systems, the opportunities identified by this study will pay back in less than one year reduce peak demand by 260 kW and reduce overall energy costs by 14%. This building uses a novel indirect-direct-DX air conditioning system that was not taking full advantage of the indirect and direct evaporative cooling stages.

Synnex Corporation: Retrocommissioning (2007)

Under Pacific Gas and Electric (PG&E) Company's Retrocommissioning program for commercial and industrial facilities, Nexant retrocommissioned three buildings, with a total area of 321,000 sq. ft., for Synnex Corporation in Fremont, California. The three office buildings were built in 2000. One of these buildings had been designed as a Level III facility to be used solely as a data center and was constructed with a raised floor with the electrical and data cables running through the crawl space. Current use, however, combines a data center (approximately 40,000 sq. ft.), office space (6,000 sq. ft.), and warehouse (19,000 sq. ft.). On this facility alone, our comprehensive investigation identified a total of 24 deficiencies. For each of the measures that would deliver savings and make it possible to operate the building to suit its current purposes, Nexant developed engineering estimates of the energy and cost saving potential, implementation cost, and simple payback period.

Xcel Energy Recommissioning Programs (2002 – 2005)

Nexant designed and implemented a recommissioning program for Xcel Energy in its Colorado service territory from 2002 through 2005. Initiated as a pilot, the program offered no-cost recommissioning services and implementation incentives to commercial facilities larger than 75,000 square feet and with 300 kW or more in peak demand. Verification used a cost-effective and innovative combination of end-use performance measurements, short-term monitoring, and engineering calculations. Nexant selected eight qualified program service providers through a competitive bid process and worked with them to ensure service consistency and quality. Nexant provided training, guidance, and oversight to the providers to meet technical and reporting requirements of the program. Nexant also directly provided recommissioning services for several projects.

The 62 participating facilities are expected to reduce the utility's peak summer demand by over 7,000 kW and save participants approximately 28,000 MWh per year.

Nexant provided the following consulting services:

- Design, including development of rules, procedures, reporting requirements, marketing strategy, and budgeting
- Development of program M&V requirements, guidelines, and tools
- Procurement, including issuing the RFP and selecting service providers
- Project quality assurance for program services, O&M recommendations, and engineering calculations
- Program administration and reporting
- Program recommissioning.

4001 Qwest Discovery Building Recommissioning (2004)

Nexant provided re-commissioning services for 4001 Qwest Discovery Building in Boulder, Colorado. Services to this 280,000 square foot research and development laboratory and office facility were provided through Xcel Energy's Recommissioning Program. The goals of this project were to reduce energy demand and expenditures, identify O&M improvements, and improve building system control and occupant comfort.

The recommissioning process for this project followed three diagnostic phases: planning, investigation, and verification. Our work focused on the AHU, chiller plant, boilers, and control systems, and included: verifying system schematics against field conditions, inspecting equipment for proper operation, sensor calibration, trending operating parameters, and checking sequences of operation for appropriateness.

Energy savings resulting from this project were verified to be 82 kW, 400,000 kWh, generating over $22,000 in savings each year.

CPUC Energy Partnerships Program: Retrocommissioning Services (2004-2005)

Nexant, as a subcontractor to Quantum Energy Service and Technology, provided retrocommissioning services in support of two CPUC-approved Building Tune-Up Programs within the State of California: (1) the Building Tune-Up (BTU) program offered throughout PG&E's territory and (2) the East Bay Energy Partnership in Alameda and Contra Costa counties. These two local programs comprise approximately $8.9 million in funding for commercial building retrocommissioning investigations and financial incentives for installed measures. Nexant's role is to identify and implement changes in building operations and related hardware to reduce energy use.

The retrocommissioning services are delivered through a three-step process: investigation, implementation, and hand-off. Nexant thoroughly reviews the building systems (using test procedures designed to identify and optimize the energy performance of existing systems); provides advice and consulting on the cost of the identified measures; and trains facility personnel in the efficient operation of installed/optimized systems, along with delivering a Systems Manual that documents the system changes and provides a reference to assist with savings persistence. Savings goals for the two programs total 33,973 MWh/year and 961,000 Therms/year.

Retrocommissioning Services for Sacramento Municipal Utility District (2000-2002)

Nexant assisted the Sacramento Municipal Utility District (SMUD) with the implementation of its 2001 and 2002 recommissioning program, which targeted the identification of no-cost or low-cost measures that would result in improved building performance and energy savings. Nexant performed building recommissioning services for four large commercial facilities that totaled nearly 2 million sq. ft. For each building, Nexant reviewed building design documents and recent utility bills, interviewed building operators, and inspected building equipment and energy management systems. Nexant engineers also collected trend data from the energy management systems, developed and executed equipment testing plans, and identified and quantified opportunities for improvements. Energy savings were estimated to be 690 MWh/yr and 1,654 MWh/yr for the 2001 and 2002 projects respectively.

2.2 CSC EXPERIENCE

CSC is a family owned Boulder-based company that's been in business since 1981. CSC's experienced and qualified service technicians and installers provide professionally designed and installed solutions and controls that offer energy saving solutions to meet any size or application. These range from simple heating and cooling programs that only run the equipment when and where it is needed, to full lighting controls that can be monitored by time and or motion.

CSC maintains equipment by not only lubricating moving parts, replacing disposable filters, changing belts, evaluating cooling and heating operations, inspecting heat exchangers, and more; they also go above and beyond by using the highest quality materials and trained technicians in maintaining client's equipment.

A few of the products lines that CSC carries and supports include:

- Carrier
- Gates Belts
- Honeywell
- Liebert
- Loren Cook
- Mitsubishi
- Raypak Boilers
- Rheem
- York
- Farr Filters
- Heil
- Johnson Controls
- Lennox
- McQuay
- Nortec Humidifiers
- RGF Air Purifiers
- Trane
- Zonex

CSC's customers have found that regularly scheduled maintenance programs, including RCx projects, are beneficial in finding trouble spots before they become an emergency. This service also provides peace of mind to building owners, property managers, and tenants by ensuring the following:

- Reduced Down Time of Equipment
- Extended Equipment Life
- Increased Air Quality

Some of CSC's local Boulder customers include:

- Bittner Commercial Advisors
- The Boulders Apartments
- Boulder Area Board of Realtors
- Boulder Valley Humane Society
- Chrisman Construction
- Colorado Group
- Engenio
- Faegre and Benson
- Gibbons White, Inc.
- Liberty Savings Bank
- Piedra Properties
- PN Eklund
- Prudential Rocky Mountain Realtors
- Rincon Development, Inc.
- Superior Plaza
- Uptown Broadway
- W.W. Reynolds Company, Inc.

CSC gets high praise for their customer-centric approach and results, such as:

"I've depended on Control Service Center for two decades. They are fast, reliable, friendly, and professional. When I call for service I know the problem will be fixed which makes my customers happy and it offers me peace of mind. Control Service Center is an indispensable business partner to my company."
~Chris Riley, W.W. Reynolds

I just want to say thank you so much for all you do for me and Faegre & Benson. You guys are always here to get the job done and it really makes my job easier."
~Lindsay Scott, Faegre & Benson

"Control Service Center has proven to be an indispensable member of our business team. The manner in which CSC conducts their operations gives us the assurance that they will handle our business with the highest level of responsiveness, courtesy, and professionalism. The amount of trust and respect that CSC has earned from us cannot be overstated."
~Amanda Salzman, Bittner Commercial Advisors

Section 3 Approach

Nexant intends to utilize our extensive local and national experience in utility RCx program design and management as well as our experienced RCx technical team to perform the requested work for the city's program. We will engage potential participants in the Pilot Program from local businesses in Boulder where we have conducted over 140 energy audits through the city's ClimateSmart at Work Program and Xcel's Onsite Assessment Program, and will provide RCx implementation services by partnering with a small, locally owned HVAC and controls services business in Boulder.

3.1 PROGRAM DEVELOPMENT AND IMPLEMENTATION

Throughout the pilot program, Nexant will continuously work with and provide feedback to the City of Boulder regarding program design and implementation options that will allow the pilot program to grow into a successful RCx program offered to the city's customers. We are well versed in best practices for Utility program design and implementation and we are a known industry leader for utility energy efficiency program development, design, and implementation throughout the US. While we have performed this work for Xcel Energy's RCx program in the recent past, we continue to provide these RCx services to Rocky Mountain Power, Salt River Project, and Common Wealth Edison, among others.

3.2 RECRUITMENT OF BUSINESSES FOR THE PROGRAM

Nexant fully understands the hurdles associated with the recruitment of customers for energy efficiency programs and we have proposed a plan to help address these hurdles through the pre-identification of a list of potential customers. Nexant is currently an auditor for Xcel Energy's Onsite Assessment Program and we are the exclusive provider of these energy audits for City of Boulder customers. We have compiled a list of customers that we believe to be good candidates for participation in the city's ReCXPP and will add to this list as we continue to complete audits for Xcel Energy's program. In addition, our partner CSC, with their extensive experience in the City of Boulder, can provide a list of facilities that have been serviced by CSC with additional RCx opportunities not yet enacted by the customer.

Table 3.1 below lists some of these pre-identified businesses for the ReCXPP.

Table 3.1 - Pre-identified Candidates for City of Boulder ReCXPP*

Building Name	Building Type	Building SqFt	Xcel Energy Audit Date
Fairways 5600 Arapahoe	office	10,500	3/27/2008
Elevations CU	office	43,000	5/8/2008
Aero-Tech Investments	office	42,586	6/10/2008
Box Canyon, LLC - 2305 Canyon	office	11,274	6/16/2008
4909 Pearl East Circle - WW Reynolds	office	23,612	6/19/2008
Water Street Plaza - 2425 Canyon	office	22,409	7/29/2008
Marshall-Rodeno Association	office	33,000	12/2/2008
Spirit Building, LLC	office	36,942	2/25/2009

Building Name	Building Type	Building SqFt	Xcel Energy Audit Date
Mock Realty	office	13,000	1/7/2009
Productive Computer Solutions	office	13,500	1/8/2009
Flatirons Medical Dental, LLC	office	22,197	1/20/2009
Geological Society of America Inc	office	30,000	1/13/2009
YGTP-B, Inc / Drexel, Barrell, & Co.	office	17,500	2/5/2009
1526 Spruce Partnership, LLP	office	10,928	1/10/2009
Eco-Products, Inc	office	20,650	4/8/2009
Dean Callan & Co. - 5303 Spine Rd	office	30,874	4/13/2009
Dean Callan & Co.- 3100 Arapahoe Ave	office	44,000	4/22/2009
Covidien Respiratory - 6135 Gunbarrel Ave	office	47,300	6/18/2009
Covidien Respiratory - 6165 Gunbarrel Ave	office	47,300	6/18/2009
Dean Callan & Co-28th Street, LLC	office	16,000	4/28/2009
RD Properties	office / Mfg	35,000	12/18/2008
RC special projects - Office / Showroom	office/warehouse	20,000	1/15/2008
RC special projects	office/warehouse	20,000	1/15/2008

*These are customers that Nexant has identified only - customers have not been contacted to gauge their interest in the ReCXPP program.

Nexant will begin the recruitment process by contacting these pre-identified customers to gauge their interest in RCx and the city's program. If customers are interested in participating, we will set up a site visit at the customer's facility that will allow us to solely focus on RCx opportunities previously identified in the Xcel Energy Onsite Assessment report.

We will also contact identified customers who have not participated in the Xcel Energy Onsite Assessment program and if interested, have the customer sign-up for the Xcel Energy program in order to utilize this low-cost service to generate RCx opportunities and to identify other capital energy efficiency improvements. Once Xcel Energy has received the customer application and forwarded it to Nexant, a Nexant engineer will complete the Onsite Assessment as standard for Xcel Energy AND will remain onsite for additional time to identify and quantify RCx opportunities at the facility.

Upon completion of the identification of measures and the establishment of cost and energy savings for these potential measures (Phase 1 of the RCx process), Nexant will sit down with the customer and a City of Boulder representative to discuss the findings in more detail. If the customer is interested in pursuing the RCx opportunities indentified, we will prepare a Commitment Statement for the customer to sign. This will state the identified RCx measures, potential annual energy and cost savings, and identify the customer's financial payback threshold necessary to enact each RCx measure. Since RCx measures are primarily low cost measures, we envision that this list will encompass the majority of the identified RCx measures from the

walkthrough. Upon signature of the Statement, Nexant will proceed to the RCx Implementation Process.

Nexant's proposed plan for identifying potential candidates and for completing Phase 1 for the ReCXPP is outlined in detail in Figure 3.1 below. The flow chart identifies the roles of the Nexant team, the City of Boulder, and the business customer.

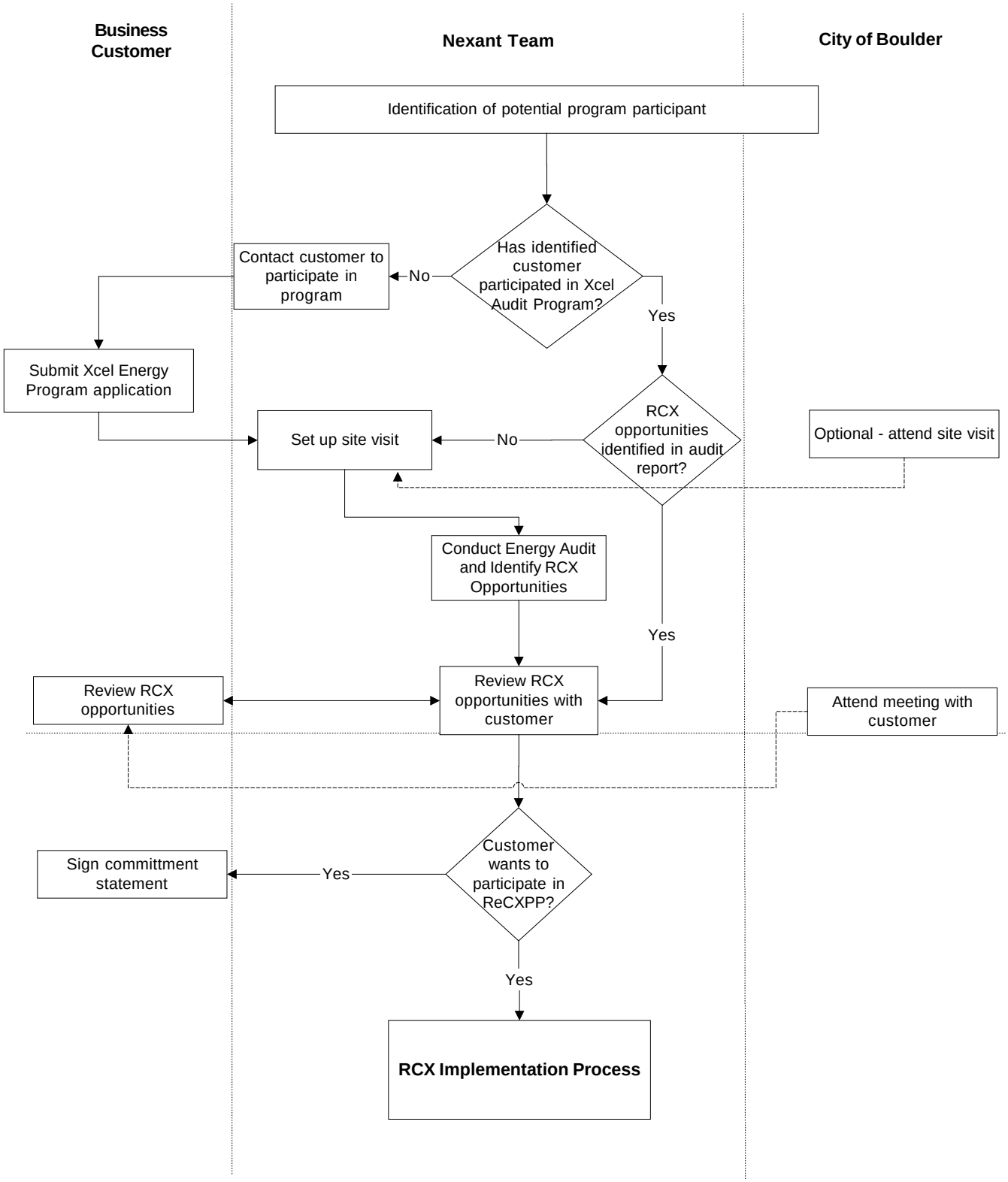

Figure 3.1- ReCXPP Project Identification Process

3.3 CONDUCT RECOMMISSIONING ACTIVITIES

Nexant has participated in and understands the entire RCx process including the hardships often encountered and overcome through a project. Through our work on RCx projects and managing RCx programs, Nexant has determined that the benefits and results of a project hinge on quality implementation and testing of the equipment.

Figure 3.2, illustrates the process we use when performing RCx projects and/or manage other RCx agents. While this approach represents a comprehensive look at the RCx process, Nexant understands that only a subset of these tasks may be applied to the buildings that fall under City of Boulder RCx program. Nexant plans to tailor the scope and effort of the RCx activities based on the City of Boulder's and building owner's goals, available project budget, size of the building, quantity and complexity of the building systems, and the energy savings potential. A more detailed explanation of our planned approach for conducting RCx activities for ReCXPP is outlined later in this section.

Depending on the accuracy required of the energy savings data reported at the end of this project, Nexant is prepared to side-step most of the data trending activities and use deemed or calculated savings for typical RCx measures in an effort to implement cost effective measures immediately identified in the field. However, Nexant also wants to make sure the City of Boulder is meeting any reporting requirement set forth in the Boulder City Council resolution passed in May 2002.

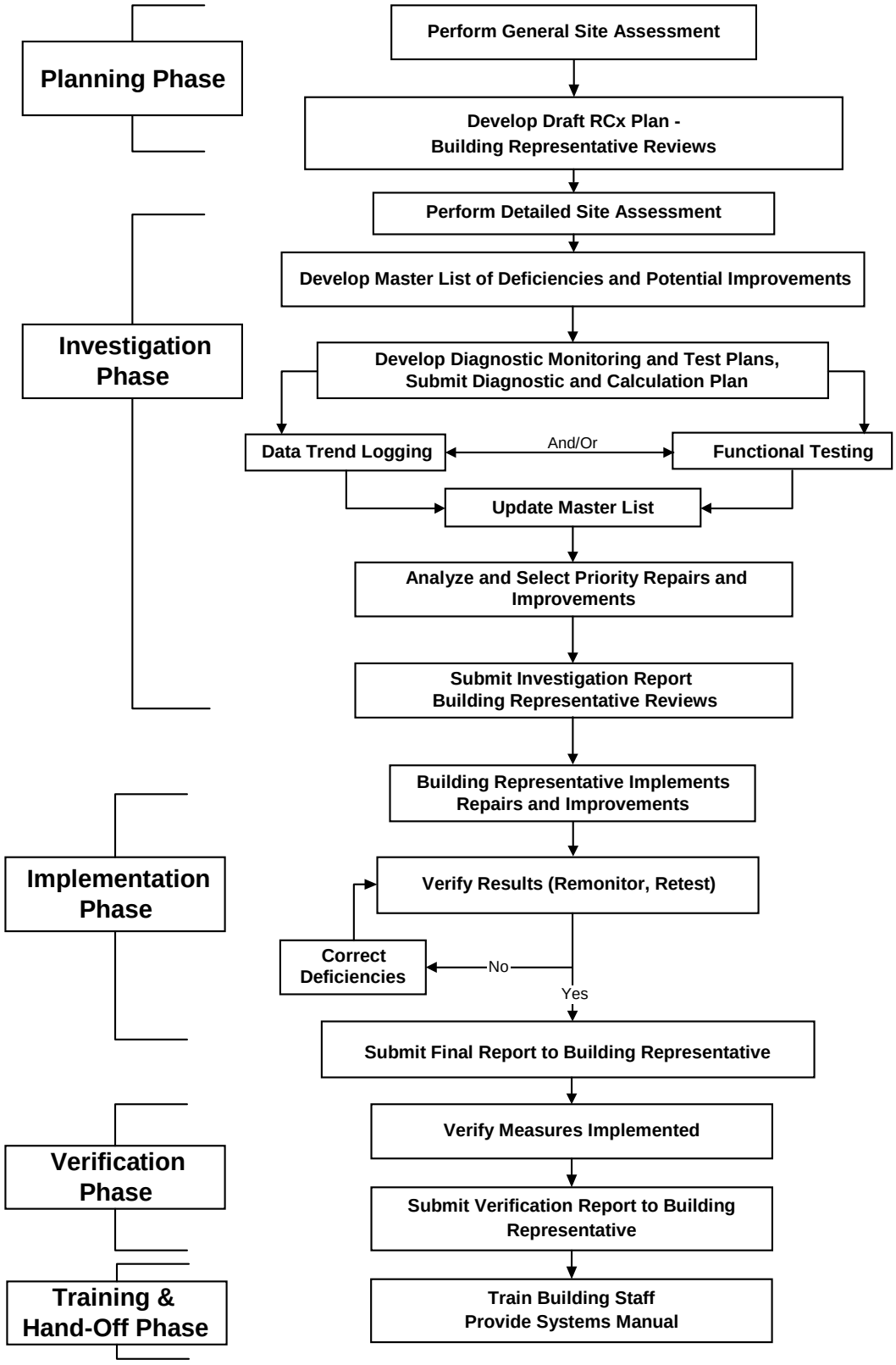

Figure 3.2 - Typical Recommissioning Project Process

3.3.1 Planning and Investigation Phase

The planning and investigation phase sets the stage for the implementation phase and is critical to successful RCx services. The planning phase can range from a low-cost walk thru audit of the facility to the development of a full RCx plan. The investigation phase can range from one site visit to the need for multiple site visits, the development of a master list, data trend logging, functional testing, etc.

Due to the size and complexity of buildings that will typically participate in the city's pilot program and due to the current program budget, we will most likely recommend that the planning and investigation phases be limited to the site visit conducted either in addition to the Xcel Energy Onsite Assessment or at the same time as the Onsite Assessment. All RCx findings from the investigation phase will be summarized in a Master List, including those adjustments and repairs made during the course of the investigation process. The list will include the name of the system or piece of equipment, a description of the deficiency or problem, and a suggested solution.

For the RCx measures that are identified, Nexant will calculate the estimated energy and cost savings, the implementation costs, and a simple payback time in years. Some measures may focus only on occupant comfort with little or no energy or demand savings, and for these Nexant will quantify the benefits using standard indicators such as mean radiant temperature, vertical air temperature difference, and draft. All calculations will be documented and submitted with the recommissioning report, as well as any data used in support of the calculations. Automated calculation spreadsheets are typically used to calculate savings associated with implementing common measures.

The categorized master list will be reviewed with the customer and a representative from the City of Boulder and will be the starting point of discussion for the implementation phase.

3.3.2 Implementation Phase

Once the qualified RCx measures are selected, Nexant will work closely with CSC and the facility staff during the measure implementation period. It is Nexant's responsibility to provide the contracting services with CSC to address mechanical hardware issues for the measure implementation. A short list of services provided by CSC include HVAC and lighting controls' tune-ups, TAB, cleaning coils, replacing filters, and tightening fan belts. For this particular project, we intend to implement simple measures that do not require hardware improvements and fix deficiencies as encountered in the field.

The follow table is our approach to the measures noted in Section II.A of the RFP. We have identified activities and deliverables that can be completed during the investigation phase and those activities that will require further investigation and/or implementation.

Table 3.2 - Typical Recommissioning Measures and Associated Activities/Deliverables

Measure	Description	Activities and Deliverables to be completed during Walkthrough	Activities for Further Investigation and/or Implementation not completed during initial Walkthrough
1	Testing & Balancing	Spot check air and water flows. For VAV and other VFD applications, verify functionality of equipment	If air and water flows are found to be incorrect, provide cost to owner for full TAB effort.
2	Building Equipment Scheduling and check/install temporary building overrides	Determine intended operating schedules and verify operation. If system/equipment schedules are incorrect, reset.	If schedules cannot be reset, advise owner of costs to repair/replace faulty controls and install temporary override controls to minimize excessive operation.
3	Minimum Outside Air and Economizer Adjust/Repair DX Compressor Outside Air Lockout	Locate existing economizers and determine condition and functionality. If faulty, adjust or repair. Once repaired, recommend/install a DX outside air compressor lockout.	If repair costs exceed allowance, advise owner of solution and costs.
4	Boiler/Furnace Adjustments	Inspect gas combustion equipment for normal operation. If faulty, adjust or repair	If repair costs exceed allowance, advise owner of solution and costs.
5	DHW temp and recirc settings	Inspect setpoint for DHW heating and adjust if necessary.	If adjustment is not possible, or repairs exceeding allowance, advise owner of solution and costs,
6	Lighting occupancy sensors	Check calibration. If incorrect, adjust.	If equipment has failed, identify components and provide cost estimate to repair or add where cost effective
7	PC Power Management	Spot check for Energy Star settings or central power management	If there is no current ability to manage IT equipment use, provide advice on solutions
8	BMS and control system sensors	Review the point list and controlled equipment/systems. Discuss possible adjustments and if appropriate make changes to	For more extensive modifications, provide recommendations to owner.

Measure	Description	Activities and Deliverables to be completed during Walkthrough	Activities for Further Investigation and/or Implementation not completed during initial Walkthrough
		programming and setpoints	
9	BMS and control system programming	Verify that overrides are not used. Review control sequences and appropriate use of controls. If incorrect, work with building operator to revise and reset.	Identify additional work and repair/replacement such as software upgrades and additional programming.
10	Other energy using systems	Investigate and Adjust/Repair equipment serving process loads and other building equipment.	If adjustment is not possible, or repairs exceeding allowance, advise owner of solution and costs.

3.3.3 Verification

Verification activities will highlight any significant differences found between the recommended measures and the actual implementation, and explain why things may have been done differently than recommended. It will also discuss whether some measures are planned for future implementation, and if so, when they are scheduled and why they were delayed.

Upon completion of the verification activities and based on actual implementation, the energy savings and implementation costs will be calculated and documented in the final report.

3.4 FINAL REPORT

Nexant is fully prepared to work with the project team to author a program summary report which will outline program benefits, challenges, and suggested refinements for the 2010 calendar year. We would also like to suggest that the findings of this program be co-presented (Nexant and the City of Boulder) at local conferences and/or the National Conference on Building Commissioning.

4.1 REFERENCES

Project	Contact Name, Title	Address	Telephone Email
Boulder County Facilities RCx	Ron Diederichsen, Facilities Division Project Coordinator	Boulder County P.O. Box 471, Boulder, CO 80306	303- 441-3186 Rdiederichsen @bouldercounty.org
DGS RCx Southern California Building Group 3	Conrad Lewis, Project Manager	State of California – Department of General Services; 707 3rd Street – 4th Floor, West Sacramento, CA 95605	916.376.1630 Conrad.lewis@dgs.ca.gov
Zions Securities Corporation RCx Project	Yousef Abouzelof, CEM; Director of Facilities & Energy Management	Zions Securities Corporation Salt Lake City, UT 84180	801.321.7562 AbouzelofY@zsc.com

NEXANT TEAM HOURLY RATES

Based on the RFP, Nexant understands that the City of Boulder has an initial budget of $60,000 for the Recommissioning Pilot Program. Nexant will work with the city to remain within this budget while working to achieve the city's energy efficiency goals. The city should be aware that pricing for RCx services can vary significantly based on the complexity of the identified measures. Therefore, Nexant proposes to complete this work on a time and materials (T&M) basis unless otherwise requested by the city. Table 5-1 outlines the proposed rates for the Nexant team. These rates will be valid for one year from the date of the contract.

When applicable, mileage to and from the project site from our Boulder, CO office will be billed at the current IRS business mileage rate. Payment will be due 30 days after delivery of the invoice.

Table A-1: Nexant Team Hourly Rates

Staffing Title	Typical Roles	Hourly Rate Direct Cost
Senior Project Manager	Project Oversight	$150
Project Manager	Project Management and Technical Lead	$135
Sr. Project Engineer	RCx Technical Lead	$125
Project Engineer	RCx Engineer	$110
Engineer	RCx Engineer	$100
Control Service Center Staff	RCx Implementation	$66
Administrative	Clerical / Administrative	$65
Expenses	Materials / Mileage	At cost – no markup

Jim Zarske, PE, CEM, LEED AP, GBE

Project Manager

Jim Zarske, Project Manager, has over 10 years of engineering experience with focus on building energy efficiency and sustainable design, energy modeling, HVAC design, commissioning and retro-commissioning. He has experience working with a variety projects and clients including government, commercial and industrial facilities, school districts, hospitals, commissiaries, new construction, and residential.

Areas of Expertise

Energy Service Performance Contracting (ESPC): Oversaw and provided guidance to owners on several ESPC projects including reviewing contracts, technical energy audit reports, M&V plans, owner training, and answering any general questions about the nature of the project and type of work being performed.

Energy Design Assistance: Worked with several design teams to optimize buildings for energy efficiency and achieve LEED credits for maximizing energy performance. This work has included working with utilities to determine available new construction incentives for energy efficiency, meeting with the design teams on a regular basis to report design alternatives that exceed code level energy performance, building eQUEST models to determine energy savings and calculate life cycle costs, and filling out the appropriate LEED paperwork and/or providing a summary report to the client.

Energy Analysis: Performed energy audits in many types of buildings to both identify control and capital based energy efficiency measures. Modeled over 75 different new and existing buildings using eQUEST, which is a front end for DOE 2.2. Developed several spreadsheet simulation tools to model specific controls and capital retrofit energy efficiency measures. Conducted life cycle costs analysis of energy conservation measures.

Building Commissioning: Acted as Commissioning Authority for new construction, retrofit and LEED commissioning projects, including: developing a commissioning plan, pre-functional, and functional test forms, reviewing submittals, overseeing weekly commissioning meetings with the project team, performing the pre-functional and functional testing, TAB verification, assembling and closing out punch-list deficiencies, and assembling and submitting a commissioning report.

Building Retro-commissioning: Developed and implemented retro-commissioning projects for existing building systems. Jim's experience covers the entire retro-commissioning process for a variety of building types and includes benchmarking; building walk-throughs and owner interviews to identify energy saving opportunities; system trending both through existing building control systems and placing temporary data loggers; calibrating energy models based on the trends and determining energy savings; project implementation and oversight of contractors; functionally testing implemented project and confirming the savings; and finally, system level benchmarking.

Engineering Design: Assessed design capacities of existing systems and performed load calculations to determine if a current design needs to be enhanced or if it is sufficient. Supervised the HVAC design of a new smoking lounge at Denver International Airport. Worked with vendors to specify new equipment based on load calculations.

Representative Project Experience

Colorado Governor's Energy Office (2008 through present)
Jim is the lead engineer for Nexant to represent and provide technical services for GEO on a variety of projects. The majority of the work includes overseeing ESPCs that are regulated through GEO and its pre-qualified list of energy service companies (ESCOs). This includes providing guidance and training to the customers on the ESPCs, reviewing the technical energy audit reports and M&V plans, and answering and general and/or technical questions the owner may have. The types of customers include K-12, municipalities, higher education, counties, and state buildings located throughout the state of Colorado.

Other projects for GEO include providing simple payback analyses for small projects that are funded by the State, developing an incentive program to stimulate the CO economy by promoting energy savings and creating jobs funded by the Federal Stimulus Bill, and developing a plan for school districts to track their energy use and performance using their utility bills.

Commissionining Projects (2005 through present)

- Jim is the project manager overseeing the LEED Fundamental Building Commissioning for the Xcel Alamosa Service Center in Alamosa, CO. This work includes, providing commissioning specifications, writing a commissioning plan, assembling the forms and performing pre-functional and functional testing, assembling and closing out deficient and punch-list items, assembling and presenting a final commissioning report.
- Jim is the project manager overseeing the LEED Fundamental Building Commissioning and M&V Credits for the Harmony Technology Park in Ft Collins, CO. This work includes design reviews, attending construction meetings, providing commissioning specifications, writing a commissioning plan, assembling the forms and performing pre-functional and functional testing, assembling and closing out deficient and punch-list items, assembling and presenting a final commissioning report, and providing the owner with M&V plans for both the base building and the tenants.
- Jim is the project manager overseeing the LEED Fundamental Building Commissioning and Enhanced Commissioning of Macerich's Northgate Mall in San Rafael, CA. This work includes design reviews, attending construction meetings, reviewing submittals, providing commissioning specifications, writing a commissioning plan, assembling the forms and performing pre-functional and functional testing, assembling and closing out deficient and punch-list items, performing a warranty building walk-thru, providing training oversight, and assembling and presenting a final commissioning report and systems manual.
- Jim was the project manager on a LEED commissioning job with the Department of Military and Veteran's Affairs for their new maintenance facility in Grand Junction, CO (2006). This work included design reviews, reviewing the energy modeling results performed by another consultant, attending construction meetings, reviewing submittals, providing commissioning specifications, writing a commissioning plan, assembling the forms and performing pre-functional and functional testing, assembling and closing out deficient and punch-list items, and assembling and presenting a final commissioning report.
- Jim was the project manager for the commissioning of a new police station (located in the Southern California). This work included performing submittal reviews, assembling the functional test forms, performing the functional tests, TAB validation, providing the customer with a list of deficiencies for the general contractor to address, and providing a final commissioning report.
- Jim was the project manager and initially involved in the commissioning of new school in Colorado Springs, CO. This initial work included design reviews and attending design team meetings.

Retro-Commissioning Projects (2004-Present)

- Jim is the project manager providing RCx services to the State of California's Department of General Services for seven (7) state buildings totaling over 600,000 SF in Southern California. This extensive project will extend over a year to include planning, investigation, implementation, training, and project handoff phases. Nexant will be surveying the buildings for low cost/no cost RCx measures, developing baseline energy usages, calculating the energy savings and simple payback for the RCx measures, performing functional testing, maintaining a master list of deficiencies, overseeing implementation, providing follow-up M&V services, assembling a systems manual, including training the building maintenance staff.
- Jim continues to provide training, assistance and oversight of the RCx efforts in Nexant's Salt Lake City, UT office to support Rocky Mountain Power's RCx program. The commercial buildings have ranged in size from 100,000 SF to 1,000,000 SF.
- LA County, SoCal Edison, SoCal Natural Gas Retro-Commissioning Pilot Project: Jim was extensively involved in a pilot project to retro-commission 11 courthouses (over 1.5 million square feet) in the Los Angeles area. This project included benchmarking, site walk-through's to identify opportunities, owner interviews to identify overall building operation and on-going problems, data trending through both an existing building control system and with temporary data loggers, developing and calibrating energy models to quantify energy savings of several measures, implementation and oversight of controls and TAB contractors, functionally testing and confirming operation of implemented measures, and assembling reports to summarize project activity.

PacifiCorp (2000 through present)

Jim has worked and been familiar with PacifiCorp's energy auditing program since fall of 2000. More recently, he has managed several projects through the Energy FinAnswer and FinAnswer Express programs offered in their Utah service territories. Responsibilities include walk-through's of existing buildings, coordinating energy savings strategies with customers, engineering analysis, technical quality control, commissioning, confirming savings, performing final inspections, program tracking, and reporting. Jim has also assisted with developing PacifiCorp's new (January 2007) design assistance program for both new construction and major renovation projects to guide project teams with energy modeling efforts, to take advantage of available utility incentives and design energy efficient buildings.

Denver Areas School Districts' Commissioning and Retro-commissioning Projects

Oversaw and performed commissioning on several new and existing K-12 schools in the Denver metro area. This work included providing commissioning specifications, developing a commissioning plan and functional test forms, conducting weekly commissioning meetings with the project team, reviewing submittals, performing pre-functional and functional testing forms, assembling and closing out deficient and punch-list items, and assembling and presenting a final commissioning report.

Defense Commissary Agency

Jim performed energy audits and design reviews on several commissaries both nationally and internationally. Work included site walk-through's on existing commissaries, assembling refrigeration energy models on both existing and proposed facilities to quantify energy savings on multiple measures, and summarizing the results in a report. He also performed several one and two day training programs for commissary staff on how to make their commissaries more energy efficient.

Xcel Energy Recommissioning Program
Jim has been involved with DSM projects that have included field surveys and data trending to identify demand savings measures. Work was completed for the implementation and measurement and verification phases of the various projects.

Work History

Nexant, Inc.: Boulder, CO
Senior Project Engineer (2006–present)

EMC Engineers, Inc., Lakewood, CO
Project Engineer and Manager (2000-2006)

Schiller Associates, Boulder, CO
Graduate Research Assitant (1999)

Achitectural Energy Corporation,Boulder,CO
Engineering Intern (1998)

County Sanitation Districts of Los Angeles County,Whittier,CA
Engineering Intern (1997-1998)

Education and Licensing

MS in Civil, Environmental and Architectural Engineering from the University of Colorado, 2000. Thesis: *Component Based Modeling of Cooling Systems Using Short-term Data.*

BS in Civil Engineering from California State Polytechnic University, Pomona, 1998.

Jim is a registered professional engineer in Colorado and California. License # 37750 and #33013, respectively. Jim has been a professional engineer since 2003.

Jim is a Certified Enegy Manager (CEM) granted though the Association of Energy Engineers since 2003.

Jim is a LEED Accredited Professional granted through the United States Green Building Council since 2004.

Jim is a Green Building Engineer (GBE) granted through the Association of Energy Engineers for both having a P.E. and LEED accredidation.

Representative Publications

Bradford, J.D., Zarske, J., Schroeder, C., and Brandemuehl, M., 2000. *First Principles Model for Integrated Cooling Systems,* Proceedings of the American Council for an Energy Efficient Economy (ACEEE) 2000 Summer Study on Energy Efficiency in Buildings, August 20-August 25, 2000.

Affiliations

American Society of Heating Refrigeration and Air Conditioning Engineers (ASHRAE)

Lynn Roy, EIT

Senior Project Manager

Lynn is a Senior Project Manager in Nexant's Energy and Carbon Management Division. In her tenure at Nexant, Lynn has managed the design and administration of large scale Utility DSM programs, evaluations of utility DSM programs for compliance with PUC requirements, multiple energy audit projects, and the measurement and verification process of building performance projects. Specifically, Lynn has managed a variety of projects including M&V analysis and modeling for the Pentagon renovation project, an ongoing 10-year redesign of all building systems in Wedges 2 thru 5 of this 6.5 million sq ft building, Xcel Energy's Colorado On-Site Assessment Program, Xcel Energy's Colorado multi-year residential energy efficiency programs, and the City of Boulder's ClimateSmart at Work program. She recently led a team that evaluated NorthWestern Energy's comprehensive suite of energy efficiency programs. Lynn is currently overseeing three market potential studies that Nexant is conducting for Tri-State Generation and Transmission, NorthWestern Energy, and Ameren Illinois Utilities.

Areas of Expertise

Program Management: Manage large scale evaluations of utility DSM programs for compliance with PUC requirements. Work directly with service providers on program management issues; budget tracking; program design; marketing support; regulatory support, and program energy savings tracking and reporting. Work directly with service providers and program sponsors on program administration issues; ensure compliance with energy program rules by completing due-diligence reviews; review and approve applications and energy savings reports. Manage multiple energy audit projects including quality assurance of engineering analysis. Work directly with mechanical contractors and Government employees throughout the measurement and verification process of building performance, including weekly, monthly, and quarterly progress reports.

Engineering: Whole-building energy audits for multi-family residential properties; analyze building energy consumption using the eQUEST Modeling Tool, Microsoft Excel and Microsoft Access and analyze projects for economic feasibility. Measurement and verification of building performance and energy consumption through the analysis of multiple measured data points. Impact evaluation of Utility DSM residential and commercial incentive programs, including calculating and verifying energy impacts.

Energy Analysis: Conduct reviews for energy and demand savings including equipment replacement and upgrades; evaluate potential DSM programs and measures for cost-effectiveness. Utility cost tracking, energy use analysis, budgeting, and savings verifications using Metrix™ software.

Market Assessments: Perform market potential feasibility studies for energy efficiency and load management programs.

Representative Project Experience

NorthWestern Energy Market Potential Assessment
Nexant is currently conducting a market potential assessment for NorthWestern Energy to identify and characterize the remaining, achievable, cost-effective electric energy efficiency potential in their Montana electric supply territory and to quantify the amount of electric energy usage savings achievable through energy efficiency programs. Lynn is the project manager and is responsible for general project oversight, client communication, and reporting.

Tri State Generation and Transmission Market Potential Assessment
Nexant is currently conducting a market potential assessment for Tri State Generation and Transmission to identify and characterize the remaining, achievable, cost-effective electric energy efficiency potential throughout Tri-State's system wide electric supply territory and to quantify the amount of electric energy usage savings achievable through energy efficiency programs. Lynn oversees this project and is responsible for general project oversight, client communication, and reporting.

Xcel Energy's Onsite Assessment Program
Lynn oversees Nexant's involvement in the Xcel Energy Onsite Assessment Program, which provides audits and cost benefit analysis for local facilities seeking to improve their energy efficiency. As consultant to Xcel Energy, Nexant conducts building energy audits, performing detailed energy analysis, evaluating economic performance of potential energy conservation measures; and writing energy savings reports including recommendations for energy efficiency improvements.

City of Boulder ClimateSmart at Work Program
Lynn is the Project Manager for the city of Boulder's ClimateSmart at Work Program, which offers energy audits for commercial customers within the city of Boulder, typically for facilities with square footage greater than 10,000 sq ft. Lynn manages all facets of the program including on-site auditing, engineering analysis, quality control, customer follow-up and program marketing.

Northwestern Energy
Lynn was the Project Manager for the Process and Impact Evaluation of Northwestern Energy's (NWE) 2004-2006 DSM programs. This fast-paced project included the evaluation of 13 programs offered in NWE's service territory to residential and non-residential customers. She managed all facets of the program evaluation, including the work of two subcontractors, while also working closely with a team of impact evaluators to review reported energy savings through standard engineering calculations, modeling, and research. Through the work of the impact evaluators, realization rates and adjusted energy savings were reported, and used along side the results of the process evaluation, to determine the cost effectiveness of NWE's programs. A final report of finding was issued to NWE and the Montana Public Utilities Commission for past and future use.

Pentagon Performance Assessment
Lynn was the Project Manager for the energy performance assessment and verification activities used to evaluate the impact of the 10 year Pentagon renovation. She utilizes outputs from a DOE-2 model to estimate annual energy consumption and evaluate compliance with a target budget. She also develops a comprehensive, end-use based M&V plan for verifying achieved performance. The M&V plan includes definition of the base case, procedures for calculating the adjusted target budget, and a metering plan for measuring energy consumption.

Avista Utilities
Nexant, acting as a subcontractor to Research Into Action, has conducted an evaluation of Avista Utilities 2007 natural gas DSM programs offered to both residential and non-residential customers throughout Avista's Washington and Idaho territory. Lynn was the program manager for Nexant's tasks in the evaluation which involved the verification of energy savings for all measures offered through Avista's residential, non-residential, and limited income programs.

Salt River Project
Nexant is designing, implementing, and administering Salt River Project's residential and non-residential incentive programs. Lynn assisted in the design of the residential appliance programs including the recommendation of program incentives and energy savings and the development of the program manuals and rebate applications.

Xcel Energy
Lynn was the Program Manager and Program Administrator for Xcel Energy's 2003-2005 Central AC Rebate Program within their Colorado Front-Range service territory. Lynn was also the Program Administrator for Xcel Energy's 2005 Evaporative Cooling Rebate Program. Program management duties included budget tracking and program progress reporting to CPUC and other interested parties. Program administration services included due-diligence review of program applications, marketing distribution, random inspections, tracking and reporting, and phone call support for participating dealers, distributors, and retailers. Program design functions involved the analysis of eligibility criteria, application development, and marketing and outreach plans.

AIMCO Capital
Lynn is the Project Manager for energy audits of multi-family residential properties for AIMCO throughout the United States. Lynn coordinates the scheduling of the audits, conducts site visits, analyzes utility bill data, and evaluates potential energy conservation measures for each property.

Platte River Power Authority
Lynn was involved in the administrative support activities for Platte River Power Authority's Cooling Rebate Program. Services included program design support, random inspections, reporting, and general program support as needed.

Xcel Energy
Lynn has conducted market assessment studies for the Xcel Energy Air Conditioning and Evaporative Cooling Rebate Programs and the Xcel Energy Saver's Switch Program, all in the residential sector. Analyses included estimates for customer costs and participation rates, program administration costs, and energy and demand savings, resulting in a complete cost effectiveness analysis for determination of Total Resource Costs, Program Administrator Costs, and Ratepayer Impact Measure Costs.

Work History

Nexant, Inc.: Boulder, Colorado
Senior Project Manager (2008-present)
Project Manager (2006 – 2008)
Sr. Project Engineer (2005 – 2006)
Project Engineer (2001–2004)

Washington Group: Littleton, Colorado
Process/Mechanical Engineer (2000–2001)

Education

Lynn holds a M.S. in Mechanical Engineering from the University of Colorado at Boulder and a B.S. in Engineering Physics from the University of Nebraska.

Russ Chitwood, PE, CEM

Project Manager

Russ Chitwood, Project Manager in Nexant's Energy & Carbon Management division, provides technical consulting to industrial clients, business owners and ESCOs as participants in utility sponsored energy efficiency programs. He performs and oversees staff that performs due diligence reviews of submitted program application materials, conducts measurement and verification activities to determine savings and coordinates a network of vendors, engineers and architects who participate in utility sponsored programs, including a Commercial and Industrial (C&I) Custom Efficiency program and a new construction Energy Design Assistance program.

Russ' experience includes energy efficiency program implementation, measurement and verification, utility rate analysis, energy simulation modeling, life cycle cost analysis, facility auditing, project management, and RFP responses for corporate and governmental entities. Prior to joining Nexant, Russ was an Energy Engineer for various Utilities and Performance Contracting companies, including Siemens Building Technologies, Enron Energy Services, and Pacific Gas and Electric Company.

Areas of Expertise

Energy Analysis: Conducting due-diligence reviews for energy and demand savings; auditing, identifying, analyzing and estimating energy consumption and savings in building and process loads using statistical and computer simulation techniques; metering, measurement, and verification of systems' energy/demand savings, and conducting cost-benefit analyses of energy conservation measures.

Engineering: Developing and reviewing measurement and verification (M&V) plans; conducting energy monitoring and inspections of commercial equipment, including HVAC, motors, lighting, and industrial process; studying technical feasibility of energy efficiency projects.

Program Management: Ensuring compliance with energy program rules; working directly with service providers, vendors, and customers on projects; advising contractors on savings estimates; providing technical advice to service providers.

Representative Project Experience

Xcel Energy's Custom Efficiency Program (2004 to present)
Russ manages and conducts project reviews for Xcel Energy's Custom Efficiency Program. He reviews project submittals by energy services companies (ESCOs) and private companies involved in the program. His work includes evaluating potential savings estimates, writing and evaluating Measurement & Verification plans, performing site inspections, working directly with service providers and program sponsors on program administration issues; ensuring compliance with energy program rules by completing due-diligence reviews; and reviewing and approving applications and energy savings reports.

Xcel Energy's Energy Design Assistance Program (2004 to 2005)
Russ reviewed projects for Xcel Energy's Energy Design Assistance Program. This program provided incentives to commercial and industrial clients to include energy efficiency measures in their new construction projects. To verify installed energy saving measures, he performed site

inspections and conducts measurement and verification activities, including the installation of power monitoring equipment, to ensure that client selected efficiency measures were providing savings as predicted in pre-construction modeling scenarios.

Work History

Nexant, Inc.: Boulder, CO
Senior Project Engineer (2004 – present)

The Brendle Group, Inc.: Fort Collins, CO
Energy Engineer (2003-2004)

Siemens Building Technologies: Littleton, CO
Performance Assurance Engineer (1999 – 2003)

Enron Energy Services: San Ramon, CA
Energy Engineer (1998-1999)

Pacific Gas and Electric Company: San Francisco, CA
Energy Engineer (1991-1998)

Education

Russ holds a B.S. in Mechanical & Environmental Engineering from the University of California at Santa Barbara. He is a registered Professional Engineer in the State of Colorado, and also a Certified Energy Manager with the Association of Energy Engineers.

Representative Publications

Chitwood, R., Bradford, J., and Liu, C., 2007. *Practical M&V for Recommissioning Projects*, National Conference on Building Commissioning (NCBC), May 2-4, 2007.

Affiliations

Vice President (2009), Rocky Mountain Chapter of Association of Energy Engineers (RMAEE)
American Society of Heating Refrigeration and Air Conditioning Engineers (ASHRAE)
American Society of Mechanical Engineers (ASME)

John M. Milton

Project Engineer

John Milton, Project Engineer in Nexant's Energy and Carbon Management division, provides technical consulting to utility companies, and the commercial and industrial clients who participate in utility-sponsored energy efficiency programs. He currently manages Xcel Energy's Onsite Energy Assessment and supports their Custom Efficiency Program. John's experience includes: energy and cost savings, measurement and verification, and DSM regulatory support. Prior to joining Nexant, John gained extensive project management experience, overseeing teams of up to seven people, performing turn-key printed circuit board assembly for a nationwide electronic component distributor.

Areas of Expertise

Energy Analysis: Conducting cost-benefit analyses of energy conservation measures, and estimating energy and consumption in building and process loads.

Engineering: Measurement and verification of building performance and energy consumption through the analysis of multiple measured data points. Conducting energy evaluations of commercial equipment, including HVAC and lighting; studying technical feasibility of energy conservation measures.

Project Management: Management of turn-key processes; time-management skills; training, and oversight of project teams.

Representative Project Experience

Xcel Energy's Onsite Energy Assessment Program
John performs all internal program management and administration for Xcel Energy's Onsite Energy Assessment Program. He manages a group of 12 engineers that participate in site visits, identify energy saving recommendations, perform utility bill analysis and benchmarking, and introduce potential rebates for capital improvement projects and energy saving projects that require further study before implementation.

Xcel Energy's Custom Efficiency Program
John conducts project reviews for Xcel Energy's Custom Efficiency Program. He reviews project submittals by energy services companies (ESCOs) and private companies involved in the program. His work includes evaluating potential savings estimates to ensure compliance with program rules, and reviewing and approving applications.

Xcel Energy DSM Program Support
John provides support for Xcel Energy's existing DSM programs to determine the potential for program revisions and enhancements to increase customer participation. He also conducts market potential feasibility studies for commercial energy efficiency programs, including benchmarketing and researching best practices.

Work History

Nexant, Inc.: Boulder, CO
Project Engineer (2009)

All American Semiconductor: Broomfield, CO
Project Manager (2002 – 2005)

Education

John holds a Bachelor of Science in Mechanical Engineering with Honors from the University of Texas at Austin.

Michael Kaar, EIT, LEED AP

Project Engineer

Michael is a Project Engineer in Nexant's Boulder office. He provides technical consulting to utility companies, and the commercial and industrial clients who participate in utility-sponsored energy efficiency programs. Since joining Nexant he has worked in Xcel Energy's Onsite Assessment and the City of Boulder's ClimateSmart program performing walk-through energy audits and analysis. He also provides M&V support of various energy saving projects. Prior to joining Nexant, Michael designed and implemented control systems in numerous projects nationally for Siemens Building Technologies. He was also responsible for issuing submittals, materials procurement, field personnel coordination and assistance with start-up commissioning.

Areas of Expertise

Energy Analysis: Conducting utility bill analysis as well as conducting walk-through energy audits determining demand and energy consumption of building equipment and also cost-effective, energy efficient implementation measures.

Engineering: Measurement and verification of building performance and energy consumption through the analysis of multiple measured data points. Conducting energy evaluations of commercial and industrial equipment, including HVAC, lighting, and motors.

Representative Project Experience

Xcel Energy's On-Site Assessment Program
Michael performs walk through energy audits for industrial and commercial facilities that apply and qualify for the On-Site Assessment Program. This program focuses on electric demand and usage reduction by providing audits and cost benefit analysis for local facilities seeking to improve their energy efficiency. His work includes conducting building audits, performing detailed energy analysis, evaluating economic performance of potential energy conservation measures, and writing energy savings reports and proposals.

Boulder County's CilimateSmart and Pace EnergySmart Programs
Michael prepares energy analysis reports for facilities involved in the City of Boulder's ClimateSmart Program. This program provides audits and cost benefit analysis for local facilities seeking to improve their energy efficiency. His work includes conducting commercial facility audits, analyzing utility bill data, generating an energy analysis of possible electric and natural gas saving measures, and preparing and reviewing Energy Audit Reports for the facility.

Work History

Nexant, Inc.: Boulder, CO
Project Engineer (2009 – present)

Siemens Building Technologies: Denver, CO
Design Engineer (2009)

Barrett Woodyard, and Associates: Norcross, GA
Mechanical Consulting Engineer (2006 – 2008)

McKenney's, Inc.: Atlanta, GA
Support Engineer (2002-2003)

Education

Michael holds a B.S. in Mechanical Engineering from the Georgia Institute of Technology. He is a registered Engineer in Training in the State of Georgia, and is LEED accredited.

3280 Pearl St
Boulder, CO 80301
Phone: (303) 449-7405
Fax: (303) 449-7415

Control Service Center, Inc.

James Strouse
President

Jim Strouse joined Control Service Center in January of 1982 as a service technician. He spent the next 20 years in the field working on all types of commercial and residential equipment. He participated in numerous factory training programs and became licensed in all major control systems such as Carrier Gen II and Gen III VVT. In 2000 Jim became part owner and Vice President of Control Service Center. In 2007 he obtained 100% ownership of CSC and was named President. He continues to receive training in both business administration areas and also the latest in the HVAC industry.

Jim has received specialized training in the following areas:

Continuing Education Class	Date Completed
EPA Type I & II	
Lennox Heating & Air Conditioning Electricity & Maintenance	April-85
CDJ Mechanical Systems Balance	August-85
Lennox Heating & Air Conditioning Electricity & Maintenance	April-85
CDJ Mechanical Systems Balance	August-85
Lennox Heat Pump Service & Application	September-85
R.S.E.S. Refrigeration & Air Conditioning Training Class	1987
Copeland Compressor Operation & Service	October-87
R.S.E.S. Controls Course	1988
Honeywell Comm./Ind. Combustion/Safety Controls	October-88
R.S.E.S. Controls Course	1989
Boiler & Combustion Seminar	November-89
Carrier Reciprocating Liquid Chiller Course	March-90
Carrier VVT Level 1 Certification	December-91
R.S.E.S. Proper Refrigerant Usage	August-93
Carlyle Compressor Service Seminar	November-93
R.M.G.A. Heat Exchanger Safety & Inspection	October-94
R.M.G.A. Air Balance - Tools & Their Use	December-94
Carrier Technical Development Program	January-97
Carrier VVT Recertification	May-97
Carrier VVT Gen III, Level II Software	December-97
Carrier VVT Recertification	October-98
Carrier Hands on Service Tool	March-99
Carrier VVT Recertification	March-00
Trane IntelliPak Rooftop Training	September-00
Trane VariTrac & Tracker Integrated Comfort Systems	November-00
Trane Rooftop Unit Class	December-00
Carrier VVT Recertification (Gen II & III)	September-01
CDJ Advanced Hydronic Systems Class	November-02
S.B.D.C. Co. Leading Edge Entrepreneurial Course	May-03
Carrier VVT Recertification (Gen II & III)	November-03
Lennox R410 A	May-06

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Control Service Center, Inc.

Brandon Strouse
General Manager

Brandon began working for Control Service Center in June of 2000 as an apprentice service technician. He began receiving in field and factory provided technical training. In February of 2007 Brandon was promoted to service manager. He graduated from Friends University in Wichita, KS in May of 2007 with a Business administration degree and receiving several academic awards. In February of 2008 Brandon was promoted to General Manager, and one year later in February of 2009 became part owner of Control Service Center, Inc. He continues to receive training in both business administration areas and also the latest in the HVAC industry.

Brandon has received specialized training in the following areas:

Continuing Education Class	Date Completed
EPA Type I & II	
Lennox R410A	6/16/2006
Intermediate Electricity	5/9/2007

Clarence W. Hill
P.O. Box 1062
Brighton, CO 80601
(720) 685-8856 (home) (720) 308-5619 (cell)

LICENSES:

City and County of Denver Licenses.
Steam and Hot Water Supervisor.
Refrigeration Supervisor.
NATE Certified

EXPERIENCE:

10/2005- Present: Control Service Center-- Commercial heating, air-conditioning; chillers, boilers, controls, pneumatic, DDC, VVT installation and maintenance.

02/2002-01/2006: Major Heating and Air-Conditioning- Commercial and residential; computer air-conditioning, centrifugal air-conditioning, pneumatic controls, boilers, forced air, solar systems and solar controls.

12/2000-20/2002-Western Building Services- Commercial and residential; computer air-conditioning, centrifugal air-conditioning, pneumatic controls, boilers, forced air

03/1999-12/2000: Control Service Center- Commercial heating, air-conditioning; chillers, boilers, controls, pneumatic, DDC, VVT installation and maintenance.

06/1993 -07/1998: Design Mechanical, Inc.- Field Service Manager: Design and construction of various control systems including custom built controls, Carrier VVT, Carrier controls, Network (DDC), Trane tracker and tracer system. Installing Trane Summit Systems (DDC). Supervision and technical support of up to sixteen installers and service technicians for start ups, warranties of new equipment and service of equipment from tlvee to five hundred tons air-conditioning including reciprocating, screw and centrifugal compressors. Pipe fitting, boiler controls, hot water systems, chilled water systems, make-up air units and air handling units uses in VAV and
VVT systems.

12/1989- 06/1993: Major Heating and Air-Conditioning- Commercial and residential. Computer air-conditioning, centrifugal air-conditioning; pneumatic controls, boilers, forced air. Solar systems and controls.

07/1987- 03/1989 Advanced Mechanical- Computer air-conditioning and centrifugal air-conditioning and compression systems to 150 tons. Commercial boilers, pneumatic controls, piping installation.

10/1975 - 07/1987: Self-Employed: Hill Mechanical Service - Commercial and Industrial heating and air-conditioning. Air-Conditioning limits 300 tons. Pneumatic controls, boilers. Installation, service and maintenance.

10/1974 - 10/1975: Robert Shaw Control Company-- Heating and air-conditioning, pneumatic controls, installation, service and maintenance.

10/1973 - 10/1974: Powers Control Company - Commercial and Industrial pneumatic controls, installation, service and maintenance.

10/1970- 10/1973: Natkin Service - Worked on commercial and industrial heating and air-conditioning, pneumatic controls, five to fifteen hundred ton cooling equipment including centrifugal absorption and screw compressors, start-ups on new and industrial boilers.

1967 - 1970: Bell Plumbing and Heating - Worked on residential and commercial heating and air-conditioning, steam, hot water and forced air

EDUCATION:

1993-2003 Carrier VVT training levels 1 & 2. Carrier 6D/6E compressor rebuilds. Carrier trouble-shooting the economizer. Contractor course on control network DDC controls. Carrier update on contractor

1969-1973: Local 208, Denver, Colorado; completed five-year pipe fitter apprenticeship on *01/12/1973.*
Courses including: Science; Trigonometry; Pipe-fitting, soldering, brazing and fabrication. Refrigeration and refrigeration controls. Electronics and electronic controls. Chillers, absorber, and centrifugal. Pneumatic and industrial controls. Blueprint reading and mechanical drafting.

1968: Attended 11 months training for Heating, Air-Conditioning, and refrigeration at National Electronic Institute.

1960-1964: U.S. Navy: E l-E5 - Two years in engine room with high pressure steam turbine engines. Two years in operation and maintenance on a destroyer repair ship repairing valves, pumps, miscellaneous equipment pertaining to steam propulsion systems.

CAREER OBJECTIVE:

To work in my chosen field using my education, experience and skills acquired in school and on the job to provide technical assistance and guidance, as well as my own work

MICHAEL BARONE

2118 SHERRI MAR STREET
LONGMONT, CO 80501-0956
303-774-8143
Mdbarone@mindspring.com

EXPERIENCE:

1998 to present — **CLIMATE MASTERS SERVICE COMPANY,** Longmont, Colorado

HVAC Service Technician

Lead service technician repairing residential and commercial natural gas and propane furnaces, boilers, combination rooftop units, unit heaters, radiant tube heaters, pulse and high efficiency furnaces, electric heat, humidifiers, electronic air cleaners, UV lights, and cooling equipment 2 through 20 tons.

1984 to 1998 — **CONQUISTADOR APARTMENTS,** Hollywood, Florida

HVAC Technician/Maintenance Supervisor/Assistant Manager

Repairing and installing central air conditioning, heating, refrigeration, appliances, electrical, plumbing, carpentry, irrigation systems, and swimming pool. Employed, trained and supervised staff of 4 maintenance employees for 318 unit, 14 acre apartment complex. Maintained "24 hour emergency on-call service". Coordinated all sub contractors. Implemented computerization of administrative functions. Designed databases for parts inventory, resident records and work requests.

1982 to 1984 — **ALL COUNTY AIR CONDITIONING,** Fort Lauderdale, Florida

HVAC Technician

Lead service technician for new company. Installed and repaired air conditioning and heating units (1/2 to 20 tons), refrigeration and major appliances.

1977 to 1982 — **ALLCO AIR CONDITIONING,** North Miami Beach, Florida

HVAC Technician

Installed and repaired air conditioning and heating units, refrigeration, major appliances, fiberglass ductwork fabrication and installation.

EDUCATION:

1994 — **CONTRACTORS EXAM SCHOOL,** Hollywood, Florida

Refrigerant Recovery Certification

Completed refrigerant transition and recovery certification I and II.

1985 to 1986 — **MIAMI DADE COMMUNITY COLLEGE,** Miami, Florida

Air Conditioning Engineering

Completed coursework consisting of Heating and Refrigeration, Load Analysis, Construction Drafting, Fundamentals, Air Distribution, Equipment and Central Systems Design.

1976-1977 — **MIAMI LAKES TECHNICAL EDUCATION CENTER,** Miami, Florida

Air Conditioning, Heating & Refrigeration

Completed 1080-hour course in Air Conditioning, Heating & Refrigeration.

COMPUTER SKILLS: Microsoft Windows 3, 95 & 98. Word Processing, Databases, Desktop Publishing and Spreadsheets. Assembling, configuring, troubleshooting and upgrading PC hardware and software.

PERSONAL: Age 42, Married, Non Smoker, Drug Free, US Citizen.

REFERENCES: Excellent references furnished upon request.

ACCEPTANCE OF TERMS AND CONDITIONS

Use this form to indicate exceptions that your firm takes to any terms and conditions listed in the Professional Services Boilerplate Contract attached to this RFP, as well as the RFP itself. Proposals that take exception to the specifications, terms, or conditions of this RFP or offer substitutions shall explicitly state the exception(s), reasons(s) therefore, and language substitute(s) (if any) in this section of the proposal response. Failure to take exception(s) shall mean that the proposer accepts the conditions, terms, and specifications of the RFP.

If your firm takes no exception to the specifications, terms, and conditions of this RFP, please indicate so.

List exceptions here:

Following are our proposed modifications that were previously accepted by the City of Boulder in the Agreement for Consulting Services between the City of Boulder and Nexant, dated July 24, 2005 and are incorporated into the extension for services up to December 31, 2009:

- In Services Contract, Section 8, last paragraph, suggest to delete "or change." The deletion of this part of the sentence is requested because Nexant's Certificate of Insurance only indicates that it will provide City of Boulder thirty days notice prior to cancellation in coverage, not change in coverage.
- In Services Contract, Section 9, replace the paragraph with the following, "The Contractor shall be responsible for all damages to persons or property caused by them, their agents, subcontractors, employees or representatives which may arise from their negligent or wrongful performance of Contract, and shall indemnify, hold harmless, and defend the city and its officers, agents and employees from any claim or action brought by reason thereof. As part of this obligation, the Contractor shall compensate the city for the time, if any, spent by its counsel in connection with such claims or actions at the rates generally prevailing among private practitioners in the City of Boulder for similar services. The Contractors' obligation to indemnify the city as set forth in this Agreement shall survive the termination or expiration of this Agreement." This modification is requested because Nexant shall only indemnify City as a result of its failure to perform the services up to the standard of the duty of care. All other breaches of the contract shall be covered by direct claims of breach of contract, or covered by Nexant's insurance.
- In Services Contract, Section 13, insert the following at the end of the paragraph, "Notwithstanding the foregoing, either Party retains the right to assign its rights and obligations hereunder in connection with a sale of substantially all its assets or pursuant to a merger." This modification is requested because allowing the assignment of the contract in the event of merger or sale of assets prevents any interruption in the provision of services to the City of Boulder; however, it should be noted that Nexant does not envision those situations happening.

Additionally, we would like to suggest the following modification:

- In Services Contract, a new Section, with the following, "Either Party's total liability to the other Party arising out of or in connection with the Contract shall not exceed the total Fee paid to Contractor under the Contract, and both Parties agree to release the other Party from any liability in excess thereof. Under no circumstances shall either Party be liable to the other Party for any consequential or incidental damages, including but not limited to loss of use or loss of profit." This modification is requested because limiting both Party's liability to the fee and restricting damages to only direct damages provides risk management benefits by capping the amount of risk that each party is exposed to under this project. Both Parties are also liable for direct damages in performance of the services, and are not subject to unforeseen damages. This in turn helps Nexant propose lower fees to clients, as Nexant's insurance costs are decreased.

Signed,

By: _____

James Bradford, Senior Vice President

Date: September 2, 2009

For: Nexant, Inc.

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