

# PROJECT LABOR AGREEMENTS (PLAs) AND TRIPARTITE APPROACH MODEL FOR CONSTRUCTION PROJECT MANAGEMENT SUCCESS

**INDEPENDENT APPLIED RESEARCH**

**CONDUCTED BY**

**RONDA SAUGET, D. MGT, MBA WEBSTER UNIVERSITY**

**MARV FINKELSTEIN, Ph.D. SOUTHERN ILLINOIS UNIVERSITY EDWARDSVILLE**



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## BUSINESS CASE STUDY RESEARCH ATTACHMENTS

1. Prairie State Generating Campus
2. Phillips 66 Refinery
3. Abengoa BioEnergy Company Ethanol Plant
4. Edwardsville School District
5. SIUE Success Center
6. West Washington School District

## EXECUTIVE SUMMARY

In the spring of 2014, The Labor Management Committee (LMC) of the Leadership Council Southwestern Illinois began a process of reviewing and assessing its most recent efforts to promote labor management cooperation and collaboration in the region. Moreover, the LMC wished to address several questions and challenges raised about the effectiveness of these efforts, especially in the use of Project Labor Agreements (PLAs) and Tripartite strategic arrangements in the construction industry. To accomplish this task, an independent applied research study was undertaken which would deepen the understanding of labor management cooperation and collaboration in the area, provide a detailed account of these cooperative efforts and address questions about the effectiveness of this process.

Thus, the purpose of this study has been twofold: 1) to provide a framework for understanding the historical context of labor management cooperation and collaboration in Southwestern Illinois and 2) to empirically document six business cases in the construction industry over the past decade which focus on PLAs and the Tripartite approach/model.

The following points summarize some of the major findings and conclusions of this study:

- All six cases reported highly positive results and mutual benefits from engaging in cooperative labor management agreements and practices for the stakeholder groups - owners, contractors, and labor.
- The use of PLAs and related Tripartite arrangements resulted in significant cost savings, improved quality, greater productivity, and higher levels of safety.
- There was no evidence to suggest that PLAs contribute to higher costs and reduced competition. To the contrary, successful PLAs tend to produce both short-term and long term cost savings. Results indicated all six projects were completed on-time and within budget.
- Cooperative agreements, such as PLAs and the Tripartite model, can increase communication, trust, respect, and collaboration among all parties, and encourage swift problems solving, innovation, and flexibility.
- Positive results may be attributed to an informed and committed labor management leadership who were able to successfully resist an adversarial past to learn, create, and maintain strong cooperative relationships.
- Future success of the construction industry in Southwestern Illinois may well hinge on workforce and leadership awareness of cooperative and collaboration agreements and practices. Without increasing workforce and leadership education, training, and support there is a strong likelihood that these efforts will fail.

The conclusions of the study may not be generalized beyond this Southwestern Illinois because of its unique history and local conditions. However there is little doubt that these practices could be replicated elsewhere, leading to the same positive results of completing projects on-time and within budget with excellent safety records.

## RESEARCH INTRODUCTION

In 2013, the SWIL Labor Management Committee (LMC) celebrated 30 years of advancing labor management cooperation in Southern Illinois. Perhaps its greatest successes can be found in dozens of the region's most prominent construction projects. It is from this sense of achievement that the LMC desired to highlight several of the area's top projects ranging from large to small investments as well as a wide variety of construction projects from building industrial plants to our local community schools. Over the past 30 years, the LMC strongly believes the skills, knowledge, and abilities of its members have contributed in creating a work environment that benefits key stakeholders. On hundreds of projects, labor management cooperation and collaboration has improved safety, quality, productivity, and kept projects on an acceptable timeline and within budget primarily through use of Project Labor Agreements (PLAs) and a Tripartite Agreement/Approach.

To document this progress, independent researchers Ronda Sauget, D. Mgt, MBA, Webster University and Marv Finkelstein, Ph.D., SIUE volunteered to build six case studies of the projects in an effort to highlight the value that strong labor management cooperation and collaboration has had in advancing the region's ability to attract billions of dollars in business and community investments. The construction project management model that is presented here is the result of years of development and refinement and is unique in the U.S. It demonstrates the LMC's commitment to labor management cooperation and its effort to overcome difficult challenges.

With billions of dollars of investments and millions of site work hours completed by skilled labor, several of the six highlighted projects, Prairie State Generating

Campus and Phillips 66 Refinery Expansion, represent two of North America's largest projects. The projects highlighted in this research reflect national and local contractors use of Project Labor Agreement (PLAs) along with a Tripartite Agreement/Approach in working together and building trust through open and honest communications during monthly project meetings involving contractors, owners, and labor at the table. This model clearly demonstrates that the adversarial tradition rooted in the past does not work well in today's collaborative construction environment.

## METHODOLOGY

A case study design was adopted for this research to gain "best forward thinking" in applied practical outcomes for this study. A qualitative interview approach was used as the primary source of data. Other public sources included trade journals, newspaper accounts, company and union publications, and public documents served as a source of common knowledge verification. The case study format has the advantage of drawing on several sources of information in order to provide a broad and vivid picture of the context of the construction process for the six individual construction projects profiled in this study. Since each project has unique characteristics, qualitative case study methodology was able to capture these important differences and qualities through open, honest discussions with key stakeholders willing to participate in this study.

There was an effort to select a variety of projects large and small, and private and public projects that had been completed in the last 10 years and who also had a willingness to participate in this study. Specifically, projects were selected which involved Project Labor Agreements and/or Tripartite arrangements/approach of some kind. Since two of North America's largest projects were completed in

this region during this timeframe, these two projects were included to gain a mega-project experience with multi-billion dollar construction investments. Permission and access to study projects was established before any data was collected.

Interview questions were developed in joint consultation with LMC labor and management representatives. Twenty-four in-depth interviews were conducted with labor and management officials involved in each construction project at their professional locations and/or by telephone with follow-up via emails. Responses were recorded and crosschecked with existing data. Follow-up questions were pursued to ensure accuracy. Interviews of those who have actual on-site experience and involvement in the research setting and in the ongoing development of respective projects provided meaningful and substantive data.

Each case study was constructed based on the intersection of all sources of data and were subject to review and approval by the study respondents directly. Feedback was used to ensure accuracy and clarity of presentation. In some cases, respondents also provided company logos and all case study stakeholders provided construction photos to be used in this study layout and design format.

## HISTORY OF LABOR AND MANAGEMENT RELATIONS OVER THE PAST 30 YEARS IN SOUTHWESTERN ILLINOIS

### THE SWIL LABOR-MANAGEMENT COMMITTEE

The SWIL Labor Management Committee is one of the oldest labor management committees in the United States. It was created in 1983 bearing the legacy of adversarial and contentious relations which had plagued the region for decades. The rise of international competition and the emergence of the global economy meant that American industry could no longer afford the luxury of in-fighting and antagonistic labor management relations. There was a recognition that if the negative perceptions and old ways of doing things didn't change, more plants and longstanding businesses would close, and the regional economy would suffer greatly well into the future. Thus, the purpose of the LMC from the outset was to foster labor management cooperation to help spur economic growth in Southern Illinois.

The LMC is a voluntary group of labor-management representatives who meet regularly, create crucial lines of communication, share information, and engage in activities that promote awareness, respect, and trust. It has focused on issues of common interest: workforce training and preparedness, safety, quality, and cost effectiveness. The committee is dedicated to the proposition that when labor and management work together to accomplish mutually beneficial goals, there is a more positive and constructive atmosphere in which the regional economy is more likely to thrive. Over the years, the committee has worked to advance major projects in Southern Illinois, such as the Mississippi River Bridge, Scott Air Force Base growth, and retention, Conoco-Phillips (Phillips 66)



refinery complex, and the new Prairie State Energy Campus. Thus, a growing culture of labor management cooperation has helped to change the persistent legacy of adversarial relations in the region. There is, however, widespread recognition that the region has more work ahead to create a new era of cooperation.

### PROJECT LABOR AGREEMENTS

In order to promote labor management cooperation, one of the LMC's top priorities is to secure Project Labor Agreements wherever appropriate. Though contentious in some places, these agreements can be effective mechanisms for promoting a high level of labor management cooperation and at the same time, result in successful construction projects that can benefit the community.

Project Labor Agreements first came into existence in the U.S. in the 1930s in order to bring greater stability and predictability to major construction projects. This was especially true as the nation sought to quickly prepare for World War II. Typically PLA's create a jointly prepared preplanned framework for labor and management that specify the terms and conditions of work for a particular project. Rather than depend on a haphazard approach to the way an array of contractors, subcontractors and unions come together to work on a complex project, PLA's are meant to provide pre-job planning that can help to improve a project's organization and its operations. The PLA framework includes traditional collective bargaining obligations, but it augments and supersedes all other agreements between contractors and unions. PLA's set wage rates, benefits, grievance handling, and other provisions which both union and non-union employees and construction companies are required to abide by if they are to participate. In addition, all hiring is done

through the union halls. Strikes, work stoppages, job actions, or lockouts of any kind are prohibited.

Since the construction industry is unique in that many companies and unions may be brought together to work on a specific project on a temporary basis, the PLA is intended to reduce complexity and confusion, improve efficiency, and set uniform standards for safety, quality, productivity, and cost effectiveness.

Challenges to the use of PLA's are claims that they can be biased against non-union contractors and can cause signatory contractors expensive problems. According this view, non-union contractors may be discouraged from bidding projects, because wage rates may be set higher, union work rules, and requirements may be more costly, jurisdictional disputes between unions may cause time consuming work stoppages and disruption, and contractors may not be able to use their own workers, since hiring may only be done through the union hall. Thus, overall, the claim is that PLA's are anti-competitive and end up more costing more.

### LABOR MANAGEMENT THEORIES/RESEARCH

Labor Management Relations in the U.S. has been the subject of numerous studies and efforts to propose explanatory theories. Probably the biggest change in the research occurred in the mid 1980's when it became evident that the model of industrial relations based on the New Deal legislation and conditions of the 1930's and 1940's was no longer applicable. That model assumed labor and management interests to be inherently in conflict and oppositional. As such, the model can be characterized as "zero sum" since the assumption is one of opposing interests, that any gain made by one side is the other side's loss.

Whatever the flaws in the model and its assumptions, these were viewed less critically as long as the

economic pie was growing and companies could pass on the cost of wage increases and benefits to consumers in the form of higher prices. The model's viability increasingly came into question as plant closings and layoffs increased and U.S. market share shrunk in major industries such as auto, steel, and textiles. It became clear that a new model that linked the fortunes of both sides was needed.

The "new" model focuses on the logic of "win-win." In other words, the assumption is that it is possible to create labor management relationships in which there are mutual gains and benefits and where both sides find common ground. For example, an area of shared concern is workforce development, education, and training. The availability of a highly skilled workforce is a major concern of potential investors and existing employers. Management depends on this workforce to produce the highest quality products and services and to do so efficiently with a continuous eye toward innovation and invention. Labor has increasingly made workforce preparedness its central claim in advancing the advantages of having a unionized workforce.

In any case, there is a recognition that raising the skills and preparedness of the workforce cannot be left to chance. It cannot be fully realized by any one group by themselves. It requires the regional and local commitment from labor and management to work together to ensure a steady flow of skilled workers in the pipeline who are ready and motivated to take on increasingly complex projects. This begins with stable families and communities where schools -- from elementary to at least the community college level -- are developing educational programs and using the latest techniques. It also depends on local apprenticeship programs, libraries, and research institutions to ensure that knowledge and skills are cutting edge and support innovation in engineering, architecture, and project management-- all of which help to produce a world class workforce.

### LEVELS OF COOPERATION

#### *STRATEGIC*

PLA's have a key role at the strategic level of cooperative labor management relationships. They have been identified as a critical part of construction projects because connections must be made among a variety of stakeholders who may have different roles, functions and tasks in a large or complex construction project. For example, there are owners, contractors, subcontractors, union officers or international representatives, suppliers, vendors, and others all who in the past have made unilateral decisions based on independent interests. However, PLA's offer an alternative approach in which there are ongoing benefits from an awareness of the bigger picture of project planning. Like a road map, PLA's provide an opportunity for key players to understand strategically the paths they will be expected to follow and how they may intersect with others, the different stages of project completion and the sequences of events. Strategic planning helps to avoid major problems and mistakes and to make necessary adjustments. The result of joint strategies is the opportunity to develop a shared vision in which mutual interests and benefits may be more clearly seen.

#### *COLLECTIVE BARGAINING*

At the level at which collective bargaining takes place, there is an opportunity to transcend traditional adversarial approaches and to emphasize the importance of interest-based bargaining. Interest-based bargaining focuses on areas where interests overlap and are mutually beneficial, as opposed to the traditional approach where bargaining is positional and competitive. Research indicates that jockeying for position is likely to cause distrust and rivalry. Under such conditions, interests are narrow and instrumental, negotiations are contentious and antagonistic.



There is less willingness to find compromise and accommodation -- even if it might be of mutual benefit. Interest-based bargaining is focused on identifying common interests from the outset which can make it easier to come to agreement when the goal is to expand those areas where both sides find common ground.



### *WORKSITE*

Research suggests that the zero-sum model of labor management relations is rooted in organizational arrangements such as hierarchy and bureaucracy, which sharply separates the roles and functions of management from those of the rank and file worker. Such arrangements translate into a tendency toward the centralization of information, highly individualized or compartmentalized behavior, and a focus on discipline, obedience, and conformity. In other words, under such conditions, CYA (cover your ass) prevails. In such a work environment, it becomes more likely that participants have an "us versus them" view of labor management relations. Once that common understanding of work is established it is hard to change.

In contrast, cooperative relationships are ones in which information is shared on a daily basis because formal

roles and titles are relaxed. Open communication is encouraged and the work progresses based on group collaboration. There is greater honesty and trust, and less likelihood of debilitating jurisdictional or contractual issues erupting. Problems are addressed more effectively and efficiently. There is greater adaptability and flexibility. It is easier to make needed changes because there is greater agreement about how the work is going to be done on an ongoing basis and tough decisions can be made.

PLA's are based on a cooperative model of labor management relations. When properly structured they have the advantage of keeping everyone on the same page and keeping different groups working together instead of against each other.

### *TRUST*

There is no doubt that informal and personal relationships are the everyday "grease" that allows cooperative labor management relations to move forward. Respect, integrity, honesty, dependability, and trust are still the building blocks of ongoing efforts to create "win-win" outcomes. At every turn, labor and management representatives as well as public officials, members of school boards and city councils, ask themselves if they can trust the other side in PLA negotiations. Those who have established a reputation for "fair play" and as a "straight shooter," are invaluable to the process. That is what leadership on PLAs is all about. People are being asked to take risks, and they want to feel assured that they are not going to get "burned."

What is required are a series of "pre-job" meetings to foster effective communication, shared information, and a high degree of transparency to make sure that all the parties are informed and reassured about contractual issues and obligations. There needs to be an opportunity to express doubts and opposing

views. When participants have such an opportunity to express their views they are more likely come to terms, even if there hasn't been 100% agreement. Even if agreements can be achieved, each side is expecting the other to "deliver." This means that every day, expectations must be communicated along with snags, bumps, miscalculations, and mistakes.

Critical to these relationships, particularly in the construction industry where projects are temporary, is distinguishing between short and long term goals and interests. Each party is tempted to insure that short term and individual interests are met. Typically, there is enormous pressure from constituents and higher level players to secure immediate gains. It is often difficult to persuade the other side of the long term benefits of specific proposals, which may mean getting less in the short term.

This is especially true on cornerstone cooperative issues like quality -- which can easily take a back seat to productivity. Very often a quality job takes longer and more resources. Doing things right the first time may not always win out even though it may save time and money in the long run.

Similarly, there is a temptation to deploy a workforce that may lack the required skills or pre-job information that is necessary to produce quality results. This underlines the need for ongoing training, education, and pre-job planning, which may not translate into results for weeks, months, or perhaps years down the line. This certainly applies to safety issues where taking the time and expense to commit to the value of safety, helps to reduce injuries, suffering and fatalities as well as down time, insurance costs, and lawsuits. Thus, trust often requires long term commitments to quality, training, and safety. The short term can be much less problematic when all parties work together to build a better future.

### TRIPARTITE AGREEMENT/APPROACH

The term "tripartite" is used to define a trilateral or three-way approach, among owners, contractors, and unions, to organizing a construction project by first agreeing on the terms of working together collaboratively specifically stated in PLAs. Trilateral indicates a move from vertical, hierarchical relationships to more team-based horizontal ones.

The hallmark of such agreements is a high level of cooperation and collaboration among the three parties, especially labor and management. The concept includes planning, teamwork, implementation, and execution of mutual project goals and objectives. There is recognition that the tripartite model promotes increased communication and coordination central to the way things get done right. Such arrangements have been shown to improve quality, safety, productivity, and on-time cost savings, particularly on large complex projects with the required pride and professionalism of the working professional, but most of all, it insures trust and open lines of communications between all tripartite partners and at the end of the day, it is a mutual success story for all parties involved. Tripartite Agreement/Approach is very effective when used in coordination with PLAs to ensure everyone is working in good faith and has the best interests of all stakeholders as a top priority in completing the construction project on-time and within budget.

### THE PLA AND TRIPARTITE CHALLENGE

Like any effort to make systematic work-site changes, there is little doubt that implementing a PLA and using a Tripartite Approach requires a significant top level commitment. It means that labor and management leaders make fewer unilateral decisions and that they take a collaborative approach. This can be hard to do

especially when there is limited experience with labor management cooperation and PLAs. The failure of PLAs is often attributed to a lack of joint planning, preparation, and training at every level of project management.

Yet the benefits of doing PLAs right appear to be well worth this level of commitment and effort. Evidence suggests that such projects yield higher quality results, are cost effective, have lower accident rates, and set higher standards for those who wish to be successful in the construction industry.

## PROJECT CHARACTERISTICS AND RESEARCH FINDINGS

As described in the chart below, the research highlighted six construction projects representing national and local contractors, billions of dollars of investment, millions of site work hours completed, and thousands of skilled labor:

CONSTRUCTION CASE STUDY PROJECTS	PRIME CONTRACTOR(S)	PROJECT INVESTMENT	SITE WORK HOURS COMPLETED	LABOR FORCE
<b>Prairie State Generating Company</b>	Bechtel Power Corp.	\$4+ Billion Dollars	24 Million Site Work Hours	Over 4,000 Skilled Labor
<b>Phillips 66 Refinery</b>	Bechtel Oil, Gas, & Chemicals, Inc. Cherne Contracting Corp URS (Washington Division) Fluor Daniel Illinois, Inc.	\$3.8 Billion Dollars	22 Million Site Work Hours	Over 4,600 Skilled Labor
<b>Abengoa BioEngery Company Ethanol Plant</b>	Alberici Constructors	\$74 Million Dollars	700,000 Site Work Hours	Over 800 Skilled Labor
<b>Edwardsville School District</b>	Multiple Contractors over 8 projects managed by Superintendent directly	\$68 Million Dollars	N/A	Hundreds of Skilled Labor Worked on Multiple Projects
<b>SIUE Success Center Project</b>	Bruce Unterbrink Construction	\$11 Million Dollars	Approx. 99,000 Site Work Hours	Approx. 100 Skilled Labor
<b>West Washington School District</b>	Holland Construction Services	\$29 Million Dollars	165,798 Site Work Hours	Over 100 Skilled Labor

Each of the full construction case studies are listed on the Southwestern Illinois Building Trades Council Web Site ([swilbuildingtrades.com](http://swilbuildingtrades.com)) and included as attachments.

### CHALLENGES

The case studies of construction projects in Southwestern Illinois present strong evidence that the model of labor management cooperation as demonstrated in the use of Project Labor and Tripartite Agreements, can be highly effective and mutually beneficial. However, enormous challenges lie ahead. These joint strategies, practices, and procedures are only as strong as the participants who develop and implement them. Since the traditional and dominant approach to labor management relations remain adversarial, the leadership on both sides is likely to be less experienced with and less practiced in the "art" of cooperative efforts. This was clear in virtually every one of the cases presented here. For example, although PLA's have a history that can be traced back to the early part of the 20th century, data based on interviews with major project participants suggests that today most project managers know little about this history and have had limited experience with PLA implementation in their careers in the construction industry. In fact, most had serious misgivings given the widespread skepticism about PLA's and the atmosphere of distrust that has been the emblem of American labor relations. This lack of understanding and awareness, and the misleading assumptions regarding a cooperative approach, has served as formidable barriers to forging a commitment to change.

In the past, contractors were likely to believe that they would lose control of projects over key decisions regarding the workforce. They raised tough questions about costs and quality. But at Prairie State, for example, two years into the project when owners and contractors sought to raise such standards to a higher level, their labor counterparts were ready to listen and to join in the effort to help cut costs and improve quality. Thus when projects are so complex, involve so many workers and trades, and are filled with great uncertainty, contractors learned that they

can achieve their goals much more effectively by coordinating their efforts and relying on labor to fulfill their expanded roles. This was true at Philips 66 where several large contractors had little experience with having to coordinate their management of projects with other large contractors, and in particular, they had to share a virtual army of skilled workers each of who needed to understand their role in completing their assigned tasks. Project managers learned how important meetings with their labor counterparts were in assuring certainty, efficiency, and quality results. At public projects, contractors needed to gain the trust of the community in tandem with school administrators. None of this could be done unilaterally.

Labor had to learn to work with contractors and administrators to assure the quality and readiness of the workforce and to be committed to completing projects at or under budget. Across the cases presented, one strong labor leader stepped up to persuade locals to urge their members to address contractor concerns, and to become more aware of budget, scheduling, quality, and safety issues. This was especially true with regard to jurisdictional matters. There was a strong recognition that jurisdictional disputes were simply counterproductive. Settling these differences quickly and satisfactorily became more likely as unions felt compelled to join ranks to reduce any disruptions and maintain on-going schedules. This became part of the "standard of excellence" that many unions have set for themselves.

These cases suggest that labor management cooperation is extremely hard to do. It's much easier for leaders to revert back to past behaviors. That is, to be the toughest guy on the block and show your rank and file, if you are a labor leader, that you are fighting for "more" in every possible way. For management, it often means showing owners, investors, and upper management officials that you are not "caving in" to labor demands. Committing to an alternative

strategy based on a cooperative model is a serious, if not a fundamental change in the way construction projects are done. Yet, the traditional roles of labor and management rooted in the adversarial approach are no longer tenable. Labor and management do not forego their respective differences, so much as they recognize that their interests are better served when they work together instead of against each other. It requires leadership that is non-traditional - a leadership that empowers participants, shares information, and fosters communication and trust. It is a learning process, an evolution, more of an "art" than a hard and fast role or set protocol. Leaders in these cases had to continuously communicate and persuade others, take risks, and establish a culture of honesty, integrity, and trust.

The challenge for the future is to support labor management leaders who have the courage and foresight to change and to create change.

### **KEY HIGHLIGHTS OF PLAs AND TRIPARTITE AGREEMENT/APPROACH**

After 30+ years of addressing and solving local construction issues, the SWIL Labor Management Committee can see a significant return for its work over the years. As the case studies certainly demonstrate, each of the six construction projects highlighted in this research provides strong evidence that working collaboratively as a team really is the key to successful construction projects. For each of these important regional construction case studies, Project Labor Agreements (PLAs) and the Tripartite Agreement/Approach was used to create a positive work environment that sets the stage for mutually addressing issues and completing the projects within budget and on schedule with excellent safety records. The Southwestern Illinois Building Trades Council Executive Secretary Dale Stewart was mentioned in all of the cases as being a key part of developing relationships between contractors, owners, and labor

based on trust; willingness for labor and management to work together; selecting the right people with the right attitudes for key project positions; creating a positive work environment based on teamwork; opening lines of communications and problem solving; and focusing on safety and consistent training resulting in the strong regional foundation for which these construction projects were built upon.

### **TRUST, TEAMWORK, POSITIVE WORK ENVIRONMENT, PROBLEM SOLVING, AND OPEN COMMUNICATIONS**

Trust and willingness to work together were key repeating attributes throughout each of the six construction projects that created teamwork, positive work environment, problem solving, and open communications. Use of PLAs and the Tripartite Approach build a strong sense of mutual trust and respect among all project stakeholders. In the Edwardsville School District case, Dr. Ed Hightower, Superintendent, illustrated how demands were transformed into compromises, anger and frustration were voiced "behind closed doors" but because all the major parties had a chance to voice their serious concerns, trust and communication were forged in the long term relationships. Dale Stewart and Dr. Hightower worked together to help complete these projects at budget and on schedule, with few of the problems and distractions that were so evident at an earlier time. Dr. Hightower stated, "It was a "win-win" for labor and management and a proud accomplishment for the entire community. So strong was the trust and good feelings that these successes spawned, that smaller projects- maintenance buildings, booths for the athletic stadium, and storage facilities, were all done with volunteers including union members who donated their time and effort, reducing costs and allowing the school district to advance its ambitious plan further. Just a few years earlier, few people could have imagined that such things were possible. It appears as if the Edwardsville School District built more than new buildings."



According to Dale Stewart, "We worked extremely hard as a team to overcome any challenges and promote an atmosphere of trust and collaboration. It was clear from the start that open communication and working through tough issues would create a sense of community faith in the projects and overall pride that everyone was working to make the right decisions for the school district and children." The "shared vision" that gave birth to improved and cooperative labor-management relations has flourished and the community has learned important lessons for the future. It was clear that PLAs and Tripartite Approach to conducting meetings made a significant difference in how the school district and community viewed construction projects and the role of skilled labor that is a unique model for future construction projects. (*Business Case 4*)

The same sentiments of trust and open communications was mentioned by the Phillips 66 Senior Project Engineer **Larry Sicking** on the Mega-Project consisting of \$3.8 Billion dollars of investment and 22 million site work hours completed on the refinery expansion and upgrading. Sicking stated, "We had a very good relationship with all of key construction stakeholder groups; including union labor, contractors, and WRR Construction Management team; on this project and we continue to build those long-term relationships of trust and communications. As this project clearly documents, these types of working relationships really do payoff in terms of completing this mega project on-time and within budget. We learned a lot along the way that will help Phillips 66 on future projects." The Phillips 66 case further illustrates the importance of trust and willingness to work together as key foundational attributes to overcome project challenges that in the past might have created costly delays and the workforce challenges. The case demonstrates why

taking the time to set up the project correctly with the right people and right planning is well worth the time and effort. (*Business Case 2*)

At Prairie State Energy Generating Company, **Michael P. Rother**, Corporate Director of Industrial Relations and Security, and a central participant in the project's construction from the beginning as PSGC's Manager of Contracts and Industrial Relations, stated, "We needed the certainty of outcome to meet the stringent budget and schedule constraints of our challenging \$4 plus billion dollar project and that certainty drew us to the selection of Bechtel and the union working professionals who represented the Southwestern Illinois Building and Construction Trades. To date, over five years later, our selection of the union craft has proven to be, without a doubt, a complete success story and every craft worker involved should be proud to have their footprint of success on our historic and celebrated project." He further explained, "The tripartite group knew the essential goal was to 'get the work done right the first time, on time and on budget but most importantly, in a safe and productive manner.'" Rother, referred to the many achieved major project milestones to underline a key safety high point: "With all craft workers empowered by Bechtel and Prairie State to implement, and consistently drive towards a 'zero- accident performance' goal, the tripartite team succeeded in achieving 5.3MM safe hours without a lost time incident at the peak of our project." As one of North America's largest construction projects, this case emphasizes how skilled labor, contractors, and owners all working together collaboratively was the key to this project's success of being on-schedule, within budget, and with an outstanding safety record. (*Business Case 1*)



***“With several other large projects under construction at the same time, we worked very closely with Alberici to ensure all aspects of the project was maintained at the highest levels, such as safety standards and quality workforce.”***

*- Dale Stewart, SWIBTC*

According to LeRoy Stromberg, Alberici COO, stated, “Alberici worked with Dale Stewart early in the pre-job planning stage agreeing to use PLAs and Tripartite Agreements as a mechanism to ensure no work stoppages and setting the stage for working together on the Abengoa Bio-Energy Ethanol Plant.” Alberici has worked with these agreements extensively in the past successfully and wanted to get this project off to a strong foundation from the beginning. Stromberg indicated, “this is a great way in this region to get people to work together from the start on a large project like this one with a tight timelines and the no strike assurance helps us to establish confident project timelines.” Labor leader Dale Stewart underlines this point when he states, “With several other large projects under construction at the same time, we worked very closely with Alberici to ensure all aspects of the project was maintained at the highest levels, such as safety standards and quality workforce. We made sure any concerns were addressed and resolved immediately enabling the project to be completed on time and within budget.” Additionally, Alberici expressed how Tripartite Agreements encourages everyone to be at the table for the key decisions on the project and this was something that Abengoa BioEnergy was not as familiar with in their past projects, so this was a completely new type of management tool for them.

***“This project was on-time and in-budget. We have an excellent relationship with the trade unions and have been working with them for years. The trades bring a level of performance consistency and quality of work that helps us to achieve our project goals. We work all over the country and struggle to find the quality of people we see here in our regional area. It would be great if all construction trades were trained to this level with this type of performance across the US.”***

*- LeRoy Stromberg, Alberici*

One of Alberici's greatest project accomplishments was the ability to implement an effective schedule recovery effort because of the agreements with labor. Engineering delays, owner-initiated scope changes, and late equipment deliveries negatively impacted the project schedule. Despite these challenges, the client remained committed to the original delivery date. All of these efforts drove the project to an on-time



completion with a good safety and project quality record. Stromberg indicated, "this project was on-time and in-budget. We have an excellent relationship with the trade unions and have been working with them for years. The trades bring a level of performance consistency and quality of work that helps us to achieve our project goals. We work all over the country and struggle to find the quality of people we see here in our regional area. It would be great if all construction trades were trained to this level with this type of performance across the US." As a national contractor, Stromberg's comments emphasize the level of training excellent and focus on safety that have emerged as a key aspects of this unique construction process developed in Southwestern Illinois.

In other areas of the country, Alberici staffs up its team to supervise construction workers and non-union people to ensure the same quality, safety, and performance levels. Stromberg believes labor management harmony speaks for itself bringing a level of trust, respect, and communications that is hard to find in other parts of the country. The Tripartite monthly meetings bring the right people with the right authority to the table to make key decisions keeping the project on time and in budget. Stromberg said in closing comments, "We feel our relationships with labor enables us to work together to do a great job on our projects and accomplish our goals for our clients." This point further suggests how unique this approach is in comparison to construction projects around the U.S. It also illustrates how enabling this approach might be to other construction projects around the world as future model to aspire to in terms of a key project management tool to be learned, applied, and studied further. (*Business Case 3*)

According to the Holland Construction team on the West Washington County School District #10 K-12 School Project, "Dale Stewart strongly encouraged

that the meetings take place regularly given the number of contractors, trades, and the complexity of the project. These meetings helped to create on-going lines of communication and to address unanticipated problems as they emerged." Early in the project, demolition and site preparation had to be done while school was in session. This meant that safety measures must be maintained at the highest levels and this required a lot of communications and coordination among all project stakeholders. The Holland Construction team indicated that problems like these might have caused costly setbacks and delays in the project's completion in the past. However, the PLA structure and continuous pre-job and on-site meetings involving key stakeholders helped to overcome these types of problems efficiently and effectively. This might not have been the case in the 80's and 90's, when the traditional adversarial approach to labor-management relations meant that working together and solving problems cooperatively was not a priority.

In this regard, according to Jim Niemeyer, Holland's Field Site Superintendent, "it's getting a lot better." He also emphasized in the past differences between the trades might have disrupted work and caused delays. Niemeyer stated, "Now it's better because there is far more unity in the trades" – referring to efforts to iron out differences before they might create contentious issues given how work can often overlap traditional jurisdictional lines. Dale Stewart indicated, "With the use of PLAs and Tripartite agreements, job monthly progress meetings address any project concerns or challenges immediately because owners, contractors, and labor representatives feels so comfortable communicating concerns and resolving any challenges promptly. These meetings focus all of the key stakeholders on the value each group brings to the construction process in completing the project on-time and within the budget at the highest level of performance quality, safety, and owner satisfaction."

***“Much of the credit was attributed to a positive work environment and the high levels of communication and collaboration on the job.”***

*- Jim Niemeyer, Holland Construction*

Niemeyer further states, “The project was completed April 2013 and came in on-time and in-budget with a zero accident rate. By all accounts, though there was a tight schedule to ensure a smooth transition into the school year, the project was a resounding success! Much of the credit was attributed to a positive work environment and the high levels of communication and collaboration on the job.” Niemeyer also stated, “It was a joy to work at the school.” He emphasized the good feelings and on-site positive work environment that was created as the project progressed. Clearly the work environment has changed significantly over the past 30 years demonstrating more collaboration, open communications, problem resolution, and stakeholder engagement. *(Business Case 6)*

On the SIUE Student Success Center project, **Bruce Unterbrink** indicated, “To make up for the challenge to the project timeline [due to delays caused in the demolition and asbestos removal process], contractors and labor representatives agreed to work together to ensure the project would be completed on the set completion deadline. This required working overtime to make sure the project was completed on time for the University to use this new building by the beginning on the Fall Semester.” Having open communications and weekly (sometimes daily) meetings to troubleshoot any issues was critical to keep everyone on the same page and working together as a team. Project labor agreements were signed at the beginning of the project and served as a medium for working together in a cost effective manner. The overall work environment was good. Everyone followed the safety rules, so there were no safety issues. Bruce

Unterbrink stated, “Like I said previously due to the delays everyone pitched in, added extra workers, and worked overtime to complete this project on time and with great quality in workmanship. This is something to be proud of!” This project further demonstrates the key attributes of the PLA and Tripartite Approach of teamwork, safety, resolving challenges, and maintaining high quality work. *(Business Case 5)*

***“Everyone pitched in, added extra workers, and worked overtime to complete this project on time and with great quality in workmanship. This is something to be proud of!”***

*- Bruce Unterbrink, Unterbrink Construction*

As stated in their own words, the six case study participants did not hesitate to emphasize how PLAs and the Tripartite Approach to construction project meeting added significant value and created a unique model for completing small, medium, and large projects on-time, within budget, and with excellent safety records.



### **FOCUS ON SAFETY AND CONSISTENT TRAINING**

The SWIL Labor Management Committee and Southwestern Illinois Building Trades Council (SWIBTC) focused on building a strong sense of

safety and consistent training into every aspect of the construction project management process. As the case studies have emphasized, these important standards of success are mentioned prominently as key areas of focus and attainment. For example in the Phillips 66 Refinery project, the Phillips 66 management had a significant influence over safety performance by setting clear expectations and providing the necessary support and resources. Leadership's support of the safety program at all levels in the organization improved performance. Management's commitment to execute the project without interruption provided a competitive advantage as other mega-projects experienced slowdowns or cash flow constraints during project execution. The Project Management effectively engaged key stakeholders in key scope decisions during Steering Committee meetings using the Tripartite approach and having very strong working relationships between union trades, contractors, and owners.

Larry Sicking, Phillips 66 Senior Project Engineer, stated, "We learned quickly how impactful meetings were using a true tripartite approach to the overall success of our project. We openly discussed real problems and proactively solved those problems without blaming each other. It was critical to have the Business Managers, Contractors, and the Phillips 66 leadership involved to overcome any project challenges on such a large construction project." The Wood River Refinery (WRR) CORE Construction Management Team stated that the Tripartite approach provided a strong foundation of cooperation, trust, safety, and productivity. This led to the creation of an overall positive work environment where WRR CORE Construction Management kept the focus on safety for all workers, which resulted in building a stronger team effort across all stakeholder groups because everyone was looking out for each other.

***"The areas achieving the best safety performance had excellent craft engagement and were able to win the "hearts and minds" of the crafts. The proper balance of positive recognition and personal accountability to follow safety procedures also proved important to success in safety."***

*- Larry Sicking, Phillips 66*

Safety performance during project execution was above the targets and good in comparison to other mega-projects. According to Larry Sicking, "The areas achieving the best safety performance had excellent craft engagement and were able to win the "hearts and minds" of the crafts. The proper balance of positive recognition and personal accountability to follow safety procedures also proved important to success in safety." (*Business Case 2*)

Once again this emphasis on safety and training was mentioned in the Prairie State Energy Campus case, Bechtel worked very closely with the SWIBTC members in getting the working professionals engaged in the decision making process with regard to safety, quality control and meeting schedule deadlines—the end result was a tripartite success. Michael P. Rother said, "You could see the growing pride in what we were doing here. The union working professionals had a sense of ownership, wore PSGC hats and tee shirts implying, 'we were part of this historic project and proud of it.'" Also, to help accomplish the task of meeting the demand of qualified welders and tackle the large number of critical and specialized welds on the project, Bechtel and the United Association implemented a 16 week welding school as well as installed on-site UA training facilities particularly to meet quality standards on complex welding.

***“It was the Boilermakers commitment to excellence and their “do it right the first time attitude” that allowed the Boilermaker welders to achieve this awesome quality performance...”***

*- Michael P. Rother,  
Prairie State Energy Campus*

Rother continued to emphasize the importance of the quality of the work when he pointed out that, “The UA Welders performed at the top of their game, by making over 35,000 pipe welds with a less than 2% weld reject rate. This extremely low reject rate on the critical welds x-rayed is a remarkable achievement.” Rother further stated, “It was the Boilermakers commitment to excellence and their “do it right the first time attitude” that allowed the Boilermaker welders to achieve this awesome quality performance ....with 70,000 field welds made and no “Field Weld” Leaks. This outstanding performance and the fact that the overall Boilermaker welder low rejection rate for the project was 1.15%, is simply remarkable, and a true testament of the skills and character of the Boilermaker craft.” It is from this level of commitment by all stakeholders that enabled these large projects to reach the highest levels of safety excellence and training consistency. (*Business Case 1*)

## CONCLUSION

In conclusion, the six business case studies demonstrate how the PLA and Tripartite Agreement/Approach project management process is a unique model that has emerged based on 30+ years dedication by the SWIL Labor Management Committee and the Southwestern Illinois Building Trades Council. After 30+ years of addressing and solving local construction issues, the SWIL Labor Management Committee can see a significant return for its work over the years. As the case studies certainly demonstrate, each of the six construction projects highlighted in this research provides strong evidence that working collaboratively as a team really is the key to successful construction projects. For each of these important regional construction case studies, Project Labor Agreements and the Tripartite Agreement/Approach was used to create a positive work environment that sets the stage for jointly address issues and completing the projects within budget and on schedule. This model was the critical factor in developing relationships between contractors, owners, and labor based on trust; willingness for labor and management to work together; selecting the right people with the right attitudes for key project positions; creating a positive work environment based on teamwork; opening lines of communications and problem solving; and focusing on safety and consistent training resulting in the strong regional foundation for which these construction projects were built upon. This a significant model in achieving project objectives that are on schedule, within budget, and a focus on maintaining highest levels of project safety. Key research findings are as follows:

- All six cases reported highly positive results and mutual benefits from engaging in cooperative labor management agreements and practices for stakeholder groups - owners, contractors, and labor.
- The use of PLAs and related Tripartite arrangements resulted in significant cost savings, improved quality, greater productivity, and higher levels of safety.
- There was no evidence to suggest that PLAs contribute to higher costs and reduced competition. To the contrary, successful PLAs tend to produce both short-term and long term cost savings. All six projects were completed on-time and within the projects budget.
- Cooperative agreements, such as PLAs and the Tripartite model, can increase communication, trust, respect, and collaboration among all parties, and encourage swift problems solving, innovation, and flexibility.
- Positive results may be attributed to an informed and committed labor management leadership who were able to successfully resist an adversarial past to learn, create, and maintain strong cooperative relationships.
- Future success of the construction industry in Southwestern Illinois may well hinge on workforce and leadership awareness of cooperative and collaboration agreements and practices. Without increasing workforce and leadership education, training, and support there is a strong likelihood that these efforts will fail.

The conclusions of the study may not be generalized beyond this Southwestern Illinois because of its unique history and local conditions. However there is little doubt that these practices could be replicated elsewhere, leading to the same positive results.



### RECOMMENDATIONS AND NEXT STEPS

1. Increase resources and efforts to promote awareness and understanding of labor management cooperation in Southwestern Illinois by promoting use of Project Labor Agreements and the Tripartite Approach/Model in projects at a regional and national level through strong marketing and communications efforts.
2. Develop and implement new training and educational programs that focus on cooperative and collaborative practices, PLAs and Tripartite arrangements or integrate these elements into existing programs.
3. Plan and organize conferences, seminars, and workshops that focus all aspects of labor management cooperation in the region.
4. Identify organizations and projects that might provide examples of on-site "best practices" that could be learned from and shared throughout the region and national organizations.
5. Identify, recognize, and support individuals who are actively involved in promoting labor management cooperation in the region.
6. Post and promote this applied research information and solid "best forward thinking" business case studies regarding labor management cooperation, so it is easy to access for anyone seeking "best thinking" models for success. Continue to build a compendium of case studies and information to inform and advance use of this PLAs and Tripartite Approach Model.
7. With an eye on the future, it will important to develop a strategy to address several major issues facing both labor and management construction industry moving forward:
  - A. Encourage and support more vocational and STEM education programs for students starting at an early age and continued through the community college system for older students. This would include promoting construction trades as a strong professional career option to students and their parents with an emphasis on further workforce development efforts thus attracting "new blood" into the industry.
  - B. Both labor and management should continue to update its respective technology skills as this industry segment grows more complex. For example, it will be important for labor to continue to update their members technical skills. This type of updating technological skills can also been seen in 3D modeling usage and competencies for contractors, engineers, and other key stakeholder groups.

NOTE: See Fred B. Kotler, "Project Labor Agreements in New York II: In the Public Interest and of Proven Value, Research Studies and Reports", Paper 36, Cornell University (2011) for an extensive, in depth reporting of many of the key elements presented here.



Independent Research conducted by  
Ronda Sauget, D.Mgt, MBA - Webster University  
Marv Finkelstein, Ph.D. - Southern Illinois University at Edwardsville (SIUE)

## **BUSINESS CASE 1: PRAIRIE STATE GENERATING COMPANY (PSGC) POWER PLANT**

The Prairie State Energy Campus (PSEC), a technologically advanced electric generation facility, is one of the largest completed construction projects in Illinois history, and is the largest coal-fired power plant to be built in the United States since 1982.

Located about fifty miles southeast of St. Louis, in Washington County, Illinois, the PSEC is comprised of two 800 MW supercritical units and an on-site underground coal mine, with approximately 200 million tons of recoverable coal; estimated to fuel the power plant for thirty years. The facility generates 1,600 MWs of power, with 95 percent of the output dedicated to eight Midwestern-based non-profit utilities. Prairie State's owners, six public power entities, two rural electric cooperatives and Peabody Energy, invested more than \$1 billion in emissions control equipment, placing PSGC among the top 10 cleanest plants in the nation. Prairie State is a stand-alone energy facility, producing base-load electricity for 180 Midwestern communities, across eight different states, serving 2.5 million families.

Prairie State had its visionary start in the early 2000s, followed by a historic groundbreaking in 2007, and has been producing power on behalf of its owners since 2012. At its construction peak, more than 4,000 skilled union working professionals were employed and 24MM total craft man-hours were logged to complete the power plant construction project, equal to more than \$1 billion dollars in craft wages. Specifically, more than 60,000 tons of structural steel, 15,000 tons of rebar, 165,000 cubic yards of concrete, 129 miles of pipe, and 1,200 miles of cable were used in the construction



of Prairie State's power plant. The Prairie State Energy Campus has also become an important landmark of the southern Illinois landscape, with its power plant stack standing at 700 feet tall—70 feet taller than the St. Louis Gateway Arch.

Since its inception, Prairie State has hired more than 250 local vendors, spending \$80 million in Washington County, Illinois alone, with an estimated economic impact on the region equal to more than \$785 million annually. Currently, more than 600 industry experts from communities across southern Illinois and the St. Louis metro east area are employed at Prairie State. An economic impact study from the University of Illinois predicts that Prairie State will stimulate the creation of more than 800 additional jobs in the region.

The successful completion of the PSEC power plant project is due, in part, to the unique tripartite partnership, between owners, contractors and union labor supported by a strong pre-construction

planning process, a mutually agreed National Labor Agreement and the successful implementation and execution of Project Labor Agreements (PLAs) with the SWIBTC. Michael P. Rother, Corporate Director of Industrial Relations and Security for the PSEC, and a central participant in the project's construction from the beginning as PSGC's Manager of Contracts and Industrial Relations, further explains the tripartite arrangement with Bechtel Power Corporation, our primary EPC contractor, and union labor represented by the Southwestern Illinois Building and Construction Trades Council (SWIBTC):

"We needed the certainty of outcome to meet the stringent budget and schedule constraints of our challenging \$4 plus billion dollar project and that certainty drew us to the selection of Bechtel and the union working professionals who represented the Southwestern Illinois Building and Construction Trades. To date, over five years later, our selection of the union craft has proven to be, without a doubt, a complete success story and every craft worker involved should be proud to have their footprint of success on our historic and celebrated project."

To understand the framework undertaken at Prairie State, it is critical to understand what the tripartite model is. Tripartite is used to define a trilateral or three-way approach to organizing a construction project by first agreeing on the terms of working together collaboratively clearly stated in PLAs. The "lateral" part of the term indicates a move from vertical, hierarchical relationships to more team-based horizontal ones. The hallmark of such agreements is a high level of cooperation and collaboration among the three parties, especially labor and management. The concept includes planning, teamwork, implementation and execution of mutual project goals and objectives. There is recognition that the tripartite model promotes

increased communication and coordination central to the way things get done right. Such arrangements have been shown to improve quality, safety, productivity and on-time cost savings, particularly on large complex projects with the required pride and professionalism of the working professional, but most of all, it insures trust and open lines of communications between all



tripartite partners and at the end of the day, it is a mutual success story for all parties involved. In order to best meet the remaining challenging schedule deadlines, PSGC worked closely with Bechtel's project management team to best facilitate the highest levels of labor management cooperation and communication. With this, signatory unions of the SWIBTC responded with their own programs; reinforcing the tripartite model. For example, the United Association of Plumbers and Pipefitters (UA), under the leadership of UA General President Bill Hite, in partnership with Bechtel Power Corporation, initiated its Standard of Excellence program which, according to Rother, "We placed emphasis on organizational effectiveness, commitment, accountability and most of



all leadership. All of these attributes were necessary in order to meet the remaining project milestones, and the implementation of these standards of excellence programs ultimately drove the success of our project to final completion."

Bechtel worked very closely with the SWIBTC members in getting the working professionals engaged in the decision making process with regard to safety, quality control and meeting schedule deadlines—the end result was a tripartite success. Rother said, "You could see the growing pride in what we were doing here. The union working professionals had a sense of ownership, wore PSGC hats and tee shirts implying, 'we were part of this historic project and proud of it.' The tripartite group knew the essential goal was to 'get the work done right the first time, on time and on budget but most importantly, in a safe and productive manner.'" Rother referred to the many achieved major project milestones to underline a key safety high point: "With all craft workers empowered by Bechtel and Prairie State to implement, and consistently drive towards a 'zero- accident performance' goal, the tripartite team succeeded in achieving 5.3MM safe hours without a lost time incident at the peak of our project."

Also, to help accomplish the task of meeting the demand of qualified welders and tackle the large number of critical and specialized welds on the project, Bechtel and the United Association implemented a 16 week welding school as well as installed on-site UA training facilities particularly to meet quality standards on complex welding. Per Rother, "The UA Welders performed at the top of their game, by making over 35,000 pipe welds with a less than 2% weld reject rate. This extremely low reject rate on the critical welds x-rayed is a remarkable achievement." Dale Stewart, Executive Secretary of the SWILBT Council, also commented, "We are

extremely proud of how well our welding trades preformed on this project. Pre-planning and working collaboratively is the key to having a successful construction project. Our monthly tripartite 'job-in-progress' meetings provided the communication opportunity to solve any project issues that may have arose. "

The Boilermakers also rose to the highest level of perfection by making 70,000 welds to build and erect Prairie State's high capacity boilers. As a result, another major milestone for the project was achieved: 35, 000 welds made on each Unit by the Boilermaker welders without a single leak following Boiler Hydro's. Per Rother, "It was the Boilermakers commitment to excellence and their "do it right the first time attitude" that allowed the Boilermaker welders to achieve this awesome quality performance on Unit 1 & 2 Boiler Hydro's ....with 70,000 field welds made and no "Field Weld" Leaks. This outstanding performance and the fact that the overall Boilermaker welder low rejection rate for the project was 1.15%, is simply remarkable, and a true testament of the skills and character of the Boilermaker craft."

Similarly, the International Brotherhood of Electricians (IBEW) instituted its Code of Excellence emphasizing the importance of teamwork, mutual respect, partnership, accountability and personal responsibility. Similar to the UA Standard of Excellence initiative, the IBEW President Ed Hill emphasized that, "we are applying for the job and we won't let you down. "Concurrently, the International Union of Insulators successfully executed their Professional Craftsman Code of Conduct.

Bechtel and the International Union of Ironworkers rose to the occasion at the early stages of the project using the Ironworkers Standards of Excellence initiatives, by successfully installing over 30,000 tons of Boiler steel

in a safe, productive and timely manner, thus allowing all other crafts to get into the Boiler Structures to execute their scopes of work.

“***The Prairie State Energy Campus power plant project was truly a tripartite triumph.***”

*- Michael P. Rother*

The tripartite model is a dramatic change from years past, when negative perceptions of labor management relations existed in southwestern Illinois. There were misconceptions, miscommunication and distrust surrounding many construction sites.

Subsequently, to demonstrate the strength of the tripartite, early in the construction of the Power Plant, PSGC site management agreed to take a key part of the infrastructure scope of work outside the PSGC power plant, called the CCW Unloader Project at the Jordan Grove site, and awarded this important project to a union contractor and the SWIBTC. This was decided due to the many union success stories achieved at the Power Plant. The Unloader Project was a critical endeavor for PSGC which planned to handle millions of tons of residual ash collected from the Unit boilers and scrubbers. However, given the strong relationship between key players like PSGC's Michael P. Rother and SWIBTC's **Dale Stewart**, a PLA was also implemented and signed to perform the Unloader project as a union project with direct oversight by PSGC.

As it turned out, the Unloader project was considered a crucial “test case” for the execution of more PLA agreements and it passed that test with flying colors, as the Unloader Project was a tripartite success story. The contractor and the union trades not only

embraced their Standard of Excellence programs, but a true tripartite partnership attitude spilled into this historic PLA as well. Eventually, these positive labor-management initiatives spread to other work within the PSEC allowing other projects to be done in the form of PLA's.

Success can build onto success if attitudes remain positive and the benefits of labor management cooperation can be recognized.

The Prairie State Energy Campus demonstrates what can be done when labor and management collaborate and communicate effectively. The results can be seen in the time and cost savings, and the quality and the outstanding levels of safety achieved in this immense project. It is a tribute to the men and women union working professionals who came together to build a plant that will serve its member-owners for decades to come.

Michael P. Rother summed up the significance of the Prairie State case in this way: ‘The Prairie State Energy Campus power plant project was truly a tripartite triumph’.





Independent Research conducted by  
Ronda Sauget, D.Mgt, MBA - Webster University  
Marv Finkelstein, Ph.D. - Southern Illinois University at Edwardsville (SIUE)

## **BUSINESS CASE 2: PHILLIPS 66 WOOD RIVER COKER AND REFINERY EXPANSION (CORE) PROJECT**

The Phillips 66 Wood River Refinery (WRR) has been a strong member of the business community for the last century employing over 800 workers. WRR is located in Southwestern Illinois near St. Louis, MO. The facility has overcome the cyclical business nature of the petroleum industry and invested in growing its refinery facilities throughout the years. As one of North America's largest refineries, Phillips 66 has partnered with Cenovus Energy, a Canadian Oil Company, on the \$3.8 billion dollar Coker and Refinery Expansion (CORE) Project to gain an advantage as new opportunities arose in the energy production industry. The CORE Project significantly improved the competitive position of WRR in processing heavy Canadian crude oil. The project leveraged WRR's size and location to increase total crude throughput, doubled the processing of price advantaged, heavy crude, significantly increased coking capacity, and improved clean product yield. The driver for this expansion was the availability of heavy Canadian crude via the new Keystone Pipeline running through the Wood River area.

The CORE Project built new units, as well as affected nearly every existing unit in the refinery. The complexity of this project was quite high as it involved major and minor revamps, unit re-starts, new grass-root units, upgrades to utilities and other infrastructure, and new off-site facilities. The project was classified as a "mega-project" in terms of size with over 22 million site work hours and \$3.8 billion dollar investment in new refinery equipment, processing technology, and other enhanced capabilities.



In March 2006, the Phillips 66 team began engineering design and scope development for the CORE Project. In December 2007, the project received full funding approval to move forward with the detailed engineering, procurement, and construction phases of the CORE Project. Construction began in September 2008 with multiple large projects being built simultaneously within the refinery. All construction was completed in November 2011 with the commissioning and startup of the new Coker. There were no significant impacts to refinery operations or environmental performance during project execution and start-up. The start-up of the units went extremely well with zero safety incidents.

This project also benchmarked very favorably with five other refining industry mega-projects executed during the same time period. It was the safest, experienced the least cost growth, and was the second fastest in project completion in comparison to other mega-projects within the refinery industry.

This was one of the largest projects of its kind within Phillips 66 and to provide overall perspective, key project facts are listed below:

- 175 miles of new pipe = St. Louis to Indiana
- 104,000 cubic yards of concrete = 2 Empire State Buildings
- 22,000 tons of structural steel = 1/2 Empire State Building
- 3 million feet electrical cable = St. Louis to Dallas



## PROJECT SCOPE & EXECUTION

The CORE project was split into three areas to facilitate the project management and control all aspects of each project component. The three areas are listed below:

### New / Grass Roots Units

- Coker Complex (Coker, Coker Gas Plant, Coker Naphtha Hydrotreater, and Vacuum Flasher Unit)
- Sulfur Complex (Sulfur Recovery, Tail Gas Treating, Amine Treating, and Sour Water Stripper)
- Hydrogen Plant

### Revamp / Re-start Units – Modifications to existing refinery process units

- Distillation Unit #1 Upgrades
- Lube Crude Re-start
- Catalytic Cracking Unit #1 and #2 Upgrades
- Ultra Low Sulfur Diesel Unit Upgrades
- Hydrocracker Unit Modifications

### Offsites and Infrastructure (OSBL)

- Interconnecting piping and piperacks
- WWTP upgrades to handle higher solids loading and flow rate
- Fire water system upgrades for the new Coker Complex
- New refinery air compressor
- Crude tank farm modifications and connection to the Keystone Pipeline
- Diesel system upgrades
- Expanded rail loading for sulfur





The CORE project required significant pre-planning to prepare for each of the construction phases. For example, the Phillips 66 team worked diligently to enhance a nearby Mississippi River dock facilities for offloading of very large modular construction components. Additionally, the entire roadway from the river dock facility to the refinery construction site required significant enhancements to allow for the large equipment to be transported effectively. This process required building new heavy access roadways, widening and strengthening other roads, moving utility electric lines, and working extensively with Illinois Department of Transportation (IDOT). The transport process also required significant assistance from local municipalities and the Illinois State Police to ensure safe movement of the large equipment modules.

The construction work environment was extremely complex. Four of the largest US construction contractors were employed to execute the work with over 4,600 construction workers at various construction sites at the same time. This required extensive coordination, such as on-site badge approvals, staggered interval shifts for start/lunch/end of work scheduling, supervision of on-site workers, building additional parking lots, etc. The site also required extensive materials management and inventory control to ensure all of the needed

components and equipment was ordered and on-site when needed for construction.

For construction of each of the primary scope areas, a prime contract was awarded to the following national contractors:

- **Bechtel Oil, Gas & Chemicals, Inc.**  
New Units
- **Cherne Contracting Corp**  
Revamped and Restarted Units
- **URS (Washington Division)**  
Sulfur Units
- **Fluor Daniel Illinois, Inc**  
Offsite and Infrastructure Modifications

In addition to the prime contracts, the WRR CORE Procurement and Contracts Team at site issued more than 1,500 service agreements to local contractors (e. g., MCI, Widman, Helmkamp, JF Electric, Wegman, GRP, etc.) for work managed directly by the WRR CORE Construction Management Team.

On site, construction was performed by union contractors under the General President's Project and Maintenance Agreement (GPPMA) that covers site policies and work conditions. Additional general contractors and the direct-hire service contractors provided services for the WRR CORE Construction Management Team. Using the Tripartite approach, monthly job progress meetings provided the foundation for a good work environment with a high level of cooperation from all parties. The monthly meetings included members from WRR Core Construction Team, the construction contractors, and labor represented by Dale Stewart of the Southwestern Illinois Building and Construction Trades Council. Additional site-wide safety leadership teams and construction management teams met on a monthly basis. WRR CORE Construction Management

team emphasized how critical it was to the overall project's success to have owner representation at every meeting, so key decisions and follow-up could be made to demonstrate Phillips 66 commitment to safety, quality construction, and productive work environment with all stakeholders. Larry Sicking, Phillips 66 Senior Project Manager, stated, "We learned quickly how impactful meetings were using a true tripartite approach to the overall success of our project. We openly discussed real problems and proactively solved those problems without blaming each other. It was critical to have the Business Managers, Contractors, and the Phillips 66 leadership involved to overcome any project challenges on such a large construction project."

## What is the tripartite model?

*Tripartite is used to define a trilateral or three-way approach to organizing a construction project by first agreeing on the terms of collaboratively working together per the GPPMA. The "lateral" part of the term indicates a move from vertical, hierarchical relationships to more team-based horizontal ones. The hallmark of such agreements is a high level of cooperation and collaboration among the three parties, especially labor and management. The concept includes planning, teamwork, implementation and execution of mutual project goals and objectives. There is recognition that the tripartite model promotes increased communication and coordination central to the way things get done right. Such arrangements have been shown to improve quality, safety, productivity and on-time cost savings, particularly on large complex projects with the required pride and professionalism of the working professional, but most of all, it insures trust and open lines of communications between all tripartite partners and at the end of the day, it is a mutual success story for all parties involved.*



*"It is the quality of people sitting around the table that makes the difference."*

*-Tom DeClue III, GRP Mechanical Company*

The WRR CORE Construction Management Team stated that the Tripartite approach provided a strong foundation of cooperation, trust, safety, and productivity. This led to the creation of an overall positive work environment where WRR CORE Construction Management kept the focus on safety for all workers, which resulted in building a stronger team effort across all stakeholder groups because everyone was looking out for each other. According to Tom DeClue III, President of GRP Mechanical Company, "It is the quality of people sitting around the table that makes the difference. Whether you are an owner, contractor, or member of labor; everyone treats each other with great degree of respect that just builds long-term relationships of trust and communications, so there is a high level of cooperation and everyone is there to enhance project outcomes - safety, schedule, costs, and productivity." This aspect was further supported by Terry Buhs, President of Wegman Electric Company. Buhs stated, "We have been doing



electrical work at the refinery since 1960's and we believe strongly in this approach. Everyone comes to the table and discusses any concerns leading to a quick resolution. We installed over 68 miles of high voltage electrical lines in this project without an lost time accident enabling us to stay on schedule and within budget. I am proud of this project and especially how everyone came together to make this mega-project a big success!"



Safety performance during project execution was exceptional in comparison to other mega-projects. The project achieved a Total Recordable Incident Rate (TRIR) of 0.38 and a Lost Time Incident (LTI) rate of 0.02 with over 22 million field work hours. The project finished strong the last 24 months without a lost time injury with over 15MM work hours completed.

According to Larry Sicking, "The areas achieving the best safety performance had excellent craft engagement and were able to win the "hearts and minds" of the crafts. The proper balance of positive recognition and personal accountability to follow safety procedures also proved important to success in safety." Dale Stewart commented, "There was a strong emphasis on safety from the beginning of this project with everyone looking out for each other. If any concerns existed, we openly discussed and the issues were promptly addressed. For a project of this size, I am so proud of how everyone work together and communicated openly."

With so many construction workers coming into the area from different union halls, the WRR CORE Construction Management team recognized varying degrees of experience and work backgrounds; therefore the team strongly believes it is critical to have the right people with the right attitudes in leadership positions who can motivate the workforce and inspire trust through good communication and management. Dale Stewart stated, "We recognized that everyone needed to have consistency, so we addressed this challenge directly when it arose with strong training and production oversight and measurement. Construction trades strived to reduce any need for project rework and increase project productivity. It is critical to have open communications and willingness to work together across at all levels on the job."

*"It is critical to have open communications and willingness to work together across at all levels on the job."*

- Dale Stewart, Southwestern Illinois Building Trades Council

In the final project phases, the commissioning and start-up activities encompassed approximately 27 different units, other existing process equipment, new utility systems, and new refinery interconnecting pipe racks in a safe and timely manner. A dedicated Prepare to Operate (PTO) team planned and executed the commissioning and start-up activities. The organization had significant refinery experience both in leadership positions and at the individual project levels. The PTO team coordinated the interface with the existing refinery to complete over 500 tie-ins without impacting refinery operations.

working relationships really do payoff in terms of completing this mega project on-time and within budget. We learned a lot along the way that will help Phillips 66 on future projects. "



Overall, the start-up effort for all areas of CORE from 2007 to 2011 was highly successful with no safety incidents in operations or start-up personnel and no significant environmental incidents. Larry Sicking stated, "We had a very good relationship with all of key construction stakeholder groups; including union labor, contractors, and WRR Construction Management team; on this project and we continue to build those long-term relationships of trust and communications. As this project clearly documents, these types of



Independent Research conducted by  
Ronda Sauget, D.Mgt, MBA - Webster University  
Marv Finkelstein, Ph.D. - Southern Illinois University at Edwardsville (SIUE)



## BUSINESS CASE 3: ABENGOA BIOENERGY ETHANOL PLANT GRANITE CITY

Alberici Constructors was selected by Abengoa BioEnergy Company, a Spanish firm, to be the EPC contractor and to build a new ethanol facility at America's Central Port located in Granite City, Illinois. Alberici Constructors is known as a national contractor working on construction projects across the U.S. Alberici constructed the new ethanol plant to achieve a production capacity of 88 million gallon per year of ethanol, a renewable fuel. The facility utilized Vogelbusch technology to process corn into ethanol which has been recognized as the most efficient corn to ethanol processing technology. The contract amount of this project was \$74 million dollars with cost reimbursable with caps on profit of the project.

The project started in May 2008 and was completed in October 2009. The project featured more than 700,000 labor hours without a lost time incident. Alberici self-performed 333, 514 of those hours, including structural steel erection, pre-fabrication building erection, concrete placement, carpentry, layout, masonry, and equipment installation.

As a leader in innovative and green construction, Alberici saw the Abengoa project as an opportunity to apply new construction technologies. The radical concrete forming system (Patent Logik360) sharply reduced waste through the application of reusable formwork. Alberici also decreased labor costs and improved quality by using UltraCURE to replace the inefficient wetted burlap methodology. The net effect of these and other similar Alberici-led initiatives was a project executed in a more environmentally-responsive manner, while significantly reducing client project costs.

Alberici coordinated all key vendors as well as all process and grain handling equipment. Alberici also self-performed on-site work including concrete, structural steel erection, pre-engineered building erection, and equipment installation. According to **LeRoy Stromberg**, Alberici COO, stated, "Alberici worked with Dale Stewart, SWIBT Representative, early in the pre-job planning stage agreeing to use PLAs and Tripartite Agreements as a mechanism to ensure no work stoppages and setting the stage for working together." Alberici has worked with these agreements extensively in the past successfully and wanted to get this project off to a strong foundation



from the beginning. Stromberg indicated, "this is a great way in this region to get people to work together from the start on a large project like this one with a tight timelines and the no strike assurance helps us to establish confident project timelines." Dale Stewart mentioned, "With several other large projects under construction at the same time, we worked very closely



with Alberici to ensure all aspects of the project was maintained at the highest levels, such as safety standards and quality workforce. We made sure any concerns were addressed and resolved immediately enabling the project to be completed on time and within budget."

Additionally, Alberici expressed how Tripartite Agreements encourages everyone to be at the table for the key decisions on the project and this was something that Abengoa BioEnergy was not as familiar with in their past projects, so this was a completely new type of management tool for them. The project received approximately \$5M in tax incentives and other benefits from the State of Illinois which made the project move from planning to the actual construction phase much faster.

One of Alberici's greatest project accomplishments was the ability to implement an effective schedule recovery effort because of the agreements with labor. Engineering delays, owner-initiated scope changes, and late equipment deliveries negatively impacted the project schedule. Despite these challenges, the client remained committed to the original delivery date. As a result, Alberici instituted a demanding recovery schedule of six day weeks, with all trade crafts working 10 hours per day and labor levels peaking at nearly 650 tradesmen on site during the day shift and another 150 tradesmen during the night shift. All of these efforts drove the project to an on-time completion with a good safety and project quality record. Stromberg indicated, "this project was on-time and in-budget. We have an excellent relationship with the trade unions and have been working with them for years. The trades bring a level of performance consistency and quality of work that helps us to achieve our project goals. We work all over the country and struggle to find the quality of people we see here in our regional area. It would be great if all construction trades were trained to this level with this type of performance across the US."



*"We feel our relationships with labor enables us to work together to do a great job on our projects and accomplish our goals for our clients."*

*- LeRoy Stromberg, Alberici*



In other areas of the country, Alberici staffs up its team to supervise construction workers and non-union people to ensure the same quality, safety, and performance levels. Stromberg believes labor management harmony speaks for itself bringing a level of trust, respect, and communications that is hard to find in other parts of the country. The Tripartite monthly meetings bring the right people with the right authority to the table to make key decisions keeping the project on time and in budget.

Stromberg said in closing comments, "We feel our relationships with labor enables us to work together to do a great job on our projects and accomplish our goals for our clients." He indicated that St. Louis should be more regional and work together rather than the parochial fragmentation we often see in our region.

