IPA

Independent Project Analysis Newsletter

Independent Project Analysis, Inc. is the preeminent organization for quantitative analysis of capital project effectiveness worldwide. At IPA, we provide practices you can use to ensure your success.

Volume 4, Issue 3 **December 2012**

Research Spotlight:

Why Does Construction Safety Suffer In Pharmaceutical Projects?

Jordan Sealock and Natalia Zwart

Good project safety is the right thing to do; most owners agree that they have a moral obligation to do whatever possible to reduce construction worker injuries and deaths while they are building their capital assets. In addition, good safety brings about other benefits. A history of good construction safety can enhance a company's image and reputation, and good *project* safety translates into good *company* safety. Good safety can also mean lower insurance costs.

The pharmaceutical industry (pharma) often congratulates itself on its safety; however, IPA research shows that the oil refining, commodity, and specialty chemicals industries all have better safety than pharma. IPA reports on safety by company at its annual Industry Benchmarking Consortium (IBC) meetings, and as seen in ***Figure 1***, over the past 5 years, no pharma company had top quintile performance for total recordable incidents.

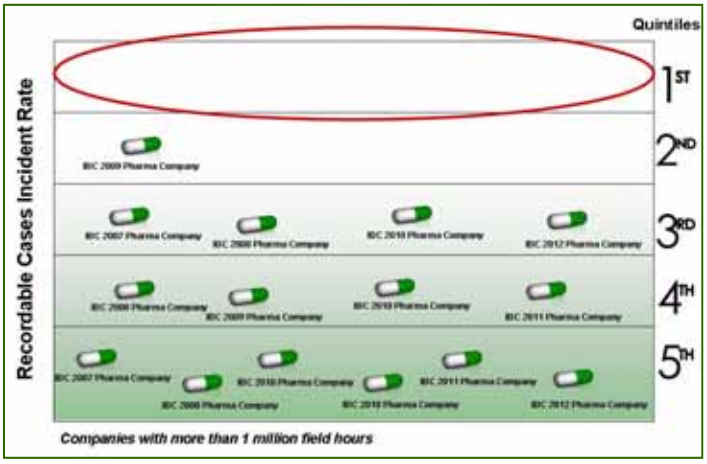

Figure 1. **Pharma's Recordable Incident Performance Is Consistently Worse than Industry**

We used our database to answer the following questions:

- ***Why do pharma projects have poorer safety performance than Industry?***
- ***What practices improve the safety performance for pharma projects?***

We developed two sets of projects from the IPA Downstream Projects Database: (1) a set of 238 pharma projects that were recently completed by 15 pharma and biotech companies and (2) a set of 2,789 refining and chemicals projects (Industry) that were recently completed by 74 companies; all projects had more than 10,000 field hours. The two sets are similar in project size (cost) and project types. The objective was to limit the sample to recent projects with enough worker exposure hours to ensure variability. We also eliminated projects from the Middle East and Asia; IPA data show that safety statistics on incidents from these regions are so extraordinarily low that the only explanation is underreporting.

We first checked to see if project characteristics—process type, project type, size, and contracting and target setting approaches—might explain the safety differences. We found that civil projects have a worse safety record; however, the trend is across all industries and does not explain differences in performance between pharma and chemical and refining projects. We also disproved a popular hypothesis that aggressive cost or schedule targets increase safety risks, as we found no correlation between target setting and ultimate safety performance.

IPA's analysis then concluded that project practices rather than project characteristics drive outcomes. Our analysis confirmed that every Best Practice benchmarked by IPA shows a significant correlation with recordable incident frequency. The results hold even after we control for project characteristics to eliminate any potential bias.

(Continued on page 2)

Inside this issue:

Editor: ***Kelli L. Ratliff***
IPA-Newsletter@ipaglobal.com

(Continued from page 1)

Use of Project Best Practices

Project definition, or level of Front-End Loading (FEL), at authorization is a key driver of safety outcomes. We hypothesize that better planning leads to more organized projects and fewer changes in the field, which leaves fewer opportunities for accidents. Projects that proceed into execution with *Inadequate* project definition have significantly higher incident rates than those with *Best Practical* definition. This relationship is true for all industries. Recent pharma projects, on average, achieved *Fair* to *Poor* FEL at authorization; recent Industry projects achieved *Good* to *Fair* FEL, on average. The lagging pharma project definition helps explain some of the safety differences between the two groups, as shown in ***Figure 2***.

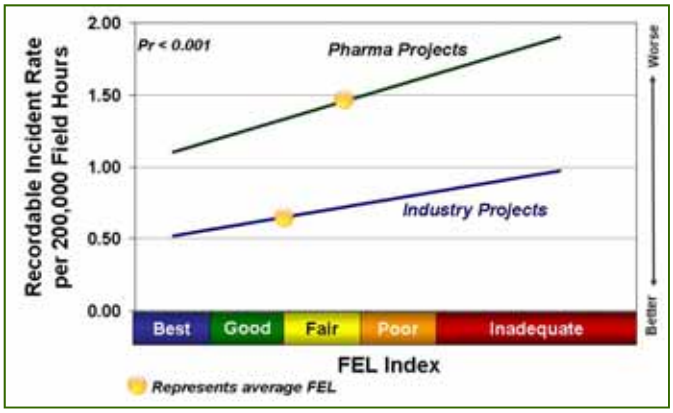

Figure 2. **FEL Drives Safety for Industry and Pharma**

Better execution discipline also leads to better safety for pharma and other industries, as shown in ***Figure 3***. First, project controls, which result in more organized projects, allow owners to identify potential problems early, develop mitigation plans, and better use their more detailed knowledge of field activities. In addition, more active and visible owner involvement helps foster better safety culture.

Inadequate project controls frequently lead to an increase in major late changes. Major late changes disrupt field work and increase the likelihood of accidents; pharma projects are more likely to experience major late design changes than other industry sectors, leading to worse safety. In fact, two-thirds of pharma projects record at least one major change after project authorization, compared to 50 percent of chemical and refining projects.

Second, continuity during execution supports better project organization and reduces safety incidents. IPA research shows that project manager turnover tends to destabilize projects and lead to worse safety. As shown in ***Figure 4***, pharma projects are more likely to experience turnover than Industry projects.

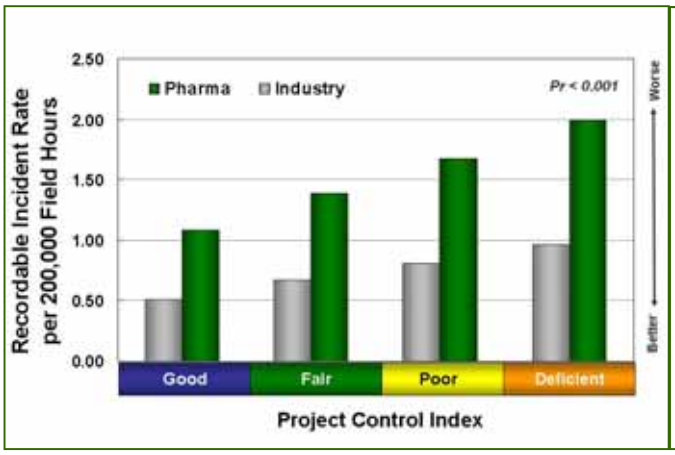

Figure 3. **Good Project Controls Improve Safety for Pharma and Industry**

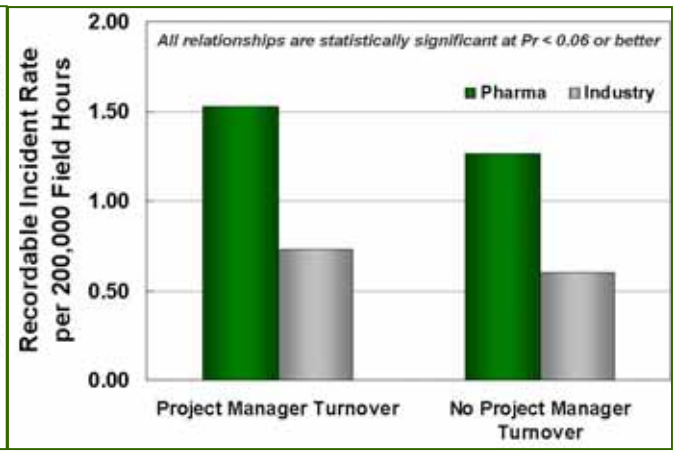

Figure 4. **Project Manager Turnover Increases the Recordable Incident Rate**

Use of Safety Best Practices

IPA also collects information about project safety practices; in this study, we evaluated each practice to determine if it had a measurable effect on safety, as shown in ***Figure 5***. Some of these practices are so commonly used that it is not possible to test their possible influence. However, there are six safety practices, in addition to project definition and controls, which show statistical correlations with recordable incident frequency.

(Continued on page 3)

(Continued from page 2)

Pharma projects are less likely than Industry to consistently use these Best Practices. Differences are most striking (and statistically significant) for Constructability Reviews and 3D CAD, immediate feedback on safety suggestions, and pre-task planning.

In conclusion, the likelihood of poor safety is not random; better prepared projects are in a better position to achieve good safety. There are specific Best Practices that correlate with safety, and these relationships hold across different industry sectors. Pharma projects achieve worse safety than Industry projects in large part because of the inconsistent application of these practices. Therefore, in order to improve project safety performance, it is critical that pharma companies enforce the use of Best Practices on every project.

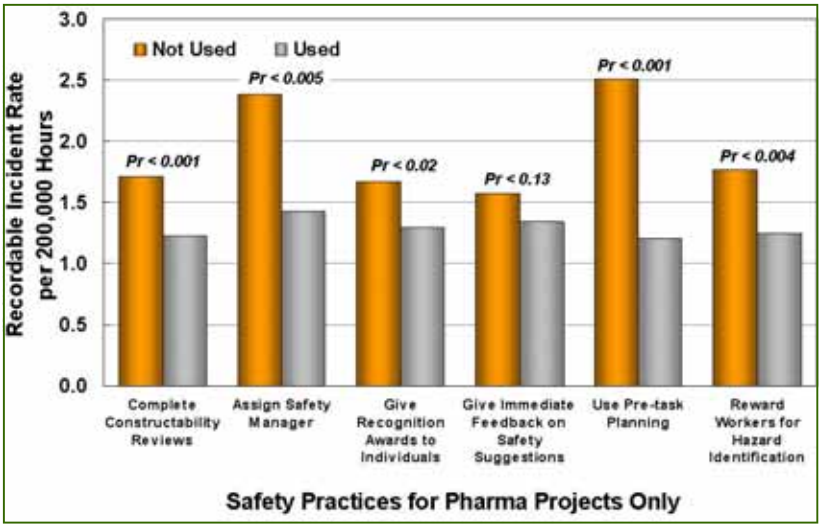

Figure 5. **Best Practices Reduce Recordable Incident Rate for Pharma Projects**

However, the differences in safety performance between pharma and chemicals and refining are so large that the use of Best Practices alone cannot explain them. Publicly available data from the Occupational Health and Safety Administration in the US show that the overall operational safety statistics for pharma are worse than refining and chemicals. One possible explanation for this gap in safety performance is that, in general, operational conditions in pharma are not as inherently dangerous as in the refining and chemicals industries. Therefore, the strict safety procedures and culture of the refining and chemicals industries translates into all aspects of the industry, including construction safety. In order to close this gap, pharma companies should review their safety cultures and approaches toward safety throughout their organizations. The objective should be to instill a heightened level of safety awareness that becomes a core company value.

Professional Profile: *Jordan Sealock, Project Analyst*

Jordan joined IPA in 2007 and since that time she has evaluated both large and small projects for companies in the pharmaceutical, consumer products, refining, and chemical industries. She has participated in a number of site and system benchmarkings and has been the lead analyst on various high-profile pharmaceutical capital projects. In addition, Jordan is IPA's client coordinator for two major global pharmaceutical companies and is involved with the update of pharmaceutical models and workbook documentation. Before coming to IPA, Jordan worked as a risk analyst for a large credit card processing company. Jordan is a member of the International Society for Pharmaceutical Engineering (ISPE).

Professional Profile: *Natalia Zwart, Manager Chemicals, Life Sciences, and Nutrition*

Natalia joined IPA in 2001 and has evaluated and benchmarked capital projects in the chemicals, petrochemicals, pharmaceutical, and consumer products industries. She helped clients improve the capital effectiveness of their projects and project systems, implement Best Practices, and manage project risks. Natalia holds a B.A degree in Economics from Hampshire College and an M.A. in Applied Economics from the Johns Hopkins University. Natalia is a member of American Chemical Society (ACS) and International Society for Pharmaceutical Engineering (ISPE).

The goal of the *IPA Newsletter* is to provide you with research-based articles on current capital project issues, announce upcoming IPA events and IPA Institute course offerings, and introduce new and future IPA products that can improve your project management systems.

To subscribe to the IPA Newsletter and to view an archive of all past issues, please visit our website at *www.ipaglobal.com/Newsletter*.

To be kept informed regarding upcoming IPA Institute programs and courses being developed for capital project improvement, please join our mailing list at *www.IPAInstitute.com*.

Quantitative Study of SAGD Well Cost and Duration Benchmarks

A Joint Industry Study on Steam Assisted Gravity Drainage (SAGD) Wells for In Situ Oil Sands Projects in Northern Alberta

Oil sands operators have asked Independent Project Analysis, Inc. (IPA) to sponsor a study on SAGD well construction costs and durations in the oil sands regions of Northern Alberta. The purpose of this study is to further establish cost and duration benchmarks in the region. The results of the study will be reported to participating companies in a confidential summary report with customized details on individual company performance in comparison to Industry.

Capital spend on greenfield and sustaining projects in the oil sands regions of Northern Alberta has been increasing over the last few years. Billions of capital dollars will continue to be spent over the next decade. The major components of in-situ greenfield oil sands projects consist of central processing facilities, infield flow lines, and well pads with steam assisted gravity drainage (SAGD) well pairs. The well pairs consist of a horizontal steam injection well and a production well that targets bitumen production.

To achieve and maintain nameplate capacity of the facilities, well pair installation requires an initial phase along with subsequent sustaining phases. Individual production wells typically produce less than a thousand barrels of bitumen per day and have an expected production period of only several years. The total number of well pairs required to achieve development nameplate capacity depends on the central processing capacity and the subsurface production potential. As such, a large number of initial well pairs and continued well pair construction are needed to maintain bitumen supply to the production facilities. Although the cost for an individual SAGD well is relatively low compared to other global exploration and production well costs, the large number of wells needed (well counts often in the hundreds) can raise the overall well program costs into the hundreds of millions of dollars per development.

Operators lack a preponderance of reliable industry data to use in planning and/or benchmarking their own SAGD well construction projects. Individual oil sands operators have collected and recorded cost and duration information on their own well programs, and they leverage this information in estimating and assessing their greenfield and sustaining well program developments. Although these data can be quite detailed, they are often limited to a single company's experience in only one or two oil sands development locations.

IPA has one of the most robust well datasets in the oil sands industry.

This study is planned to better understand factors that affect individual wells and the entire cost and duration estimates for greenfield and sustaining well programs. Information collected from multiple companies offers a broader understanding of the regional factors that affect cost and duration planning.

Key Questions To Be Considered

IPA is working with the participating companies to determine industry average cost and duration benchmarks for SAGD wells. Cost and duration factors will be identified and quantified to determine industry average costs and durations. A series of questions to be answered in the study will provide data in planning and estimating future greenfield and sustaining projects. A sample of the types of questions to be considered in the study include:

- What is the industry average cost and duration (drill and complete) for a SAGD production well?
- What is the industry average cost and duration (drill and complete) for a SAGD injection well?
- How does a specific SAGD well program compare to Industry in terms of cost and duration?
- What are the sources of performance gaps?
- What are the most frequently cited factors that affect installation and completion durations?
- What cost and duration benchmarks are most useful to operators in evaluating current performance and planning for future SAGD well programs?
- Are the current cost and duration estimates used in front-end project planning accurate or reliable? If not, what needs to change to make these more realistic?

(Continued on page 5)

(Continued from page 4)

- How have recent cost escalation trends affected the market? How predictable has cost and duration forecasting been when measured in terms of nominal cost growth and schedule slip? How can predictability be improved?
- What, if any, are the differences in performance between:
  - Large international oil companies (IOCs) versus medium/smaller independents?
  - Companies with large annual programs versus less frequent activity?
  - Organizations that have a defined process versus ad-hoc planning?
- Are there specific industry lessons learned from past SAGD well programs that can be collated and transferred to improve the performance of future work?
- What differences, if any, are there in planning for a greenfield development versus a sustaining project?

Approach

Our approach to increasing the success rate of a capital project is simple and effective: IPA has developed detailed, carefully normalized databases that contain data about the entire project life cycle, from the business idea to early operation. We have used these data to develop powerful statistical tools that enable us to compare project performance in numerous areas.

The analysis for this study will be based on project-specific and well-specific data collected for projects in the Athabasca, Cold Lake, and Peace River oil sands regions ***(Figure 1)***, augmented by data currently in the IPA SAGD well dataset (1,000+ wells in IPA's database). In addition, IPA has an extensive dataset of onshore well programs that this study can also use.

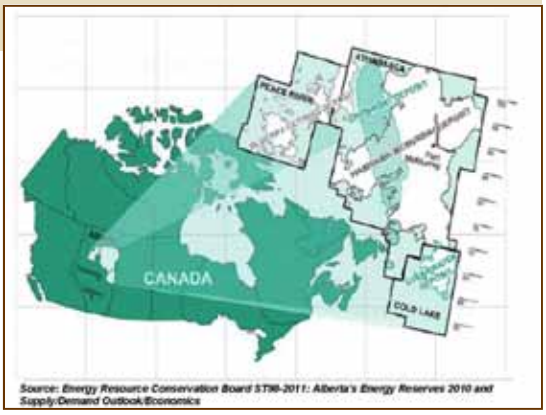

Figure 1. **Alberta Oils Sands Areas**

For more information about the technical details of the SAGD study or participation requirements, please contact Tony Bryda, Senior Project Analyst, at tbryda@ipaglobal.com.

UPSTREAM INDUSTRY UIBC 2012 BENCHMARKING CONSORTIUM

The UIBC 2012 annual meeting was held from November 12 to 14, 2012 in Tysons Corner, Virginia. The agenda for this year's meeting focused on the theme of ***Organizational Improvement and Integration*** and was prepared with the guidance of the UIBC Steering Committee.

Ratings from the attendees were among the best ever received and membership grew to a record of 21 companies. This year IPA introduced the UIBC membership to IPA's new approach to measuring Facilities FEL for offshore facilities, which now incorporates project specific factors. The research studies presented this year included the following: *Uncertainty of the Prize; Importance of Highly Functional Teams to Difficult Projects; The True Economic Impact of Project Decisions; Sustainability and Community Engagement in the Upstream Oil and Gas Sector; Challenges to Improving Project Systems; FPSOs – Do I Have a Deal for You!;* and *Exploration to Project Development Handover.*

The UIBC 2013 Road Show will be hosted by Shell this year in Houston, Texas, on June 11. This road show is open to all UIBC companies, and extends the UIBC metrics and research to company participants that were unable to attend the main UIBC 2012. For more information on the UIBC annual meetings or the UIBC 2013 Road Show, please contact ***David Rosenberg*** at ***drosenberg@ipaglobal.com***.

InSites Corner:
Highlights from Small Project News and Research

InSites is a blog dedicated to improving small project performance. **InSites** features a series of short articles to address issues specific to small, site-based projects. These articles will address everything from key practices to driving more competitive performance, to commonly asked questions about how to prepare for an IPA benchmarking.

To add your name to the distribution list or for more information regarding the blog articles below, please contact ***Phyllis Kulkarni***, Plant-Based Systems Manager, at ***pkulkarni@ipaglobal.com***, or visit the IPA InSites website at ***www.IPAGlobal.com/News-Room/InSites***.

InSites Blog Article: *Trending Thoughts for Site-Based Projects*

A few weeks ago I taught the IPA Institute's ***Best Practices for Small Projects*** course to 32 attendees from 20 different companies at the Bellagio in Las Vegas. As always, I enjoyed sharing IPA's key research findings for site-based projects, and learning an equal amount in return from the participants' good questions and comments.

For participants, these courses are an opportunity to hear IPA's latest research on small projects, network with other project professionals, and earn some PDUs. For me, it's a great opportunity to hear what's on the minds of the folks that are responsible for developing, directing, and delivering capital projects at some of the world's leading manufacturing companies.

Thinking back to the conversations over the 3-day course, a few topics stand out:

What project costs do you capitalize, and when you do capitalize them? And, who is responsible for capital?

It's always interesting to me to see the differences in accounting practices, as well as accountability for use of capital, company to company. Sometimes these differences can have an outsize influence on project system behavior. A few examples:

- Is the plant manager held accountable solely for expense dollars, and allowed to treat capital as "free money from corporate"? If so, it may be tough for project managers at that site to get support for project Best Practices. In other words, if the plant manager isn't accountable for the use of capital, there may not be interest in practices that help optimize the use of that capital. Yet, a few companies in the room have incorporated *some* capital project-related metrics into their plant managers' Key Performance Indicators – the folks from these sites reported better success with issues like getting operations input on projects.
- Many project professionals have a horror story or two about accounting during turnarounds. If there is no clear agreement on how shared services during the shutdown will be charged to projects, projects are likely to pay the price for any maintenance overrun. In IPA's experience as well, it's not uncommon to see a small project pay a "turnaround tax" or shared service cost that is disproportionate to the project's actual installation scope during the turnaround, as well as significantly higher than what the team expected the cost to be. This causes volatility in the capital project budget, as well as friction between the project group and maintenance.
- How is early FEL funded? Some sites capitalize this cost, others expense it. Based on the discussion in the room, either approach can work provided that there is support and funding for the approach. The folks that reported challenges are from sites that do not have access to funds – whether capital or expense - for this work. In that situation, projects may skip this early definition phase (which should be spent transforming an idea into a clear set of objectives) and move straight to the scoping or basic definition phase. The lack of early definition work makes it hard to prioritize the project portfolio and eliminate suboptimal projects early on, and can impede good project definition.

If you feel that accounting practices are undermining your project performance, it may be encouraging to know that some sites have successfully changed their approach to better facilitate good project development – sometimes even by using IPA data to make their case to plant management.

Behavior based safety

It seems that virtually every major manufacturing company is using this, yet the actual implementation may vary. I would say that many of the Best Practices that IPA has statistically correlated with better safety performance are part of any behavior-based methodology – for example, top owner management has to visibly show their support for safety, good safety behavior

(Continued on page 7)

(Continued from page 6)

should be reinforced/rewarded at the craft level, and hazardous behavior should receive immediate feedback and re-direction. IPA continues to conduct research on safety to try to identify practices that can help industry achieve zero incidents.

How to set clear priorities and deliver them

One of the most interesting questions that was asked is, has IPA seen a project team, site or company, that successfully delivers projects under both a cost-driven model and a schedule-driven model? I would say yes, but not frequently. Often companies get into a routine – pharma or consumer products companies that are used to driving for speed on their large, market-driven projects often apply the same strategies to their smaller site-based projects, even though these may not be revenue-generating. Likewise, commodity companies that do an excellent job delivering low-cost projects may struggle to effectively trade cost for schedule when schedule is paramount. Holding a Classes of Facility Quality or similar session early in the project life can help clarify objectives and ensure buy-in from business, engineering, and operations. Further, even though the core Best Practices for these different models are the same, IPA research has shown there are nuances in terms of which Best Practices are most beneficial for each model.

Things are looking up!

Finally, from my perspective, it was very encouraging to survey the room about different Best Practices and see just how many companies are using them. About half the companies in the room reported developing resource-loaded schedules for their small projects, and about the same percentage had some in-house project controls capabilities. Given that these are historically weak areas for small projects, it's great to see that the companies represented in the room were trending in the right direction.

These are just a few of the many interesting discussions that came up during the course. The next ***Best Practices for Small Projects*** course is at the Las Vegas Venetian in March 2013. I'm confident that the course and the discussions will be just as compelling. For more information, please visit the IPA Institute course details page at: ***www.ipainstitute.com/Best-Practices-for-Small-Projects***.

Transportation Capital Project Forum

IPA will be hosting a Transportation Capital Project Forum at the Lansdowne Resort in Lansdowne, Virginia, on March 19, 2013. The purpose of this Forum is to present latest transportation industry trends, research, and findings from IPA's statistical analysis of pipeline and pipeline-related capital projects. In addition, IPA will facilitate discussion among participants on Best Practices for transportation projects, and participants will have the opportunity to provide input into IPA's research initiatives. The Forum will also include presentations by guest speakers on their experience in improving their organization's performance in delivering transportation capital projects.

The Transportation Capital Project Forum will be held in conjunction with IPA's 2013 Industry Benchmarking Consortium (IBC). Last year, about 300 project professionals from nearly 40 owner companies attended IBC to exchange data, information, and metrics to improve the effectiveness of their capital project systems. Attendees to the Transportation Capital Project Forum will have the opportunity to join the IBC attendees for relevant IPA research presentations. In addition, attendees will have the opportunity to network with all of the IBC attendees during a catered lunch and a dinner and open exhibit reception to be held at the Smithsonian's Udvar Hazy Air and Space Museum in Dulles, Virginia.

Who Is Invited to Attend

IBC members are encouraged to include individuals from their transportation organizations in their IBC delegations to attend the Forum. In addition, the Forum will be open to non-IBC member companies for a small fee. To facilitate open discussion however, only owner personnel are invited to attend. Functions involved in the planning and execution of capital projects are encouraged to attend, including but not limited to: project management, engineering, construction management, procurement, project controls, contract administration, and capital project business sponsors.

If you have any questions about the Transportation Capital Project Forum, please contact ***René Klerian-Ramírez***, Deputy Business Area Manager, HPT at ***+1 (703) 726-5469*** or ***rklerian@ipaglobal.com***.

Follow IPA on LinkedIn at *http://www.linkedin.com/company/independent-project-analysis*

Highlights from IPA's Global Outreach and Community Service Program

Kelly Mitchell, Global Outreach Coordinator

One of IPA's main Principles of Operation is: Social and Ethical responsibility to our customers and our community. IPA recognizes and accepts that we have a responsibility to our community and to those in our community who are less fortunate. In an effort to put these principles into action, IPA conducts a number of efforts throughout the year, both locally and globally.

Global Initiative

IPA's 2012 Global Initiative was to raise money for ***Doctors Without Borders***. Doctors Without Borders/Médecins Sans Frontières (MSF) works in nearly 70 countries providing medical aid to those most in need regardless of their race, religion, or political affiliation. Throughout the year, we have raised over $2,000, through various fundraising efforts. Our efforts include: Bake Sales, the IPA Annual Chili Cook Off Event and The Hague's Charity Movie Night.

Service Activities

Loudoun Area Agency on Aging – Home Delivered Meal Program:
IPA volunteers deliver prepared meals to homebound residents in the Leesburg area once a week throughout the year.

Leesburg ROCK (Recreational Outreach for Community Kids):
All IPA employees worked together to assemble and distribute 23 bicycles to local school-aged children.

CampWrite UNC:
IPA's Production Department produced books that were distributed to Creative Writing Summer Camp attendees in Chapel Hill, NC.

United Way - Shoebox Project:
Employees assembled decorated shoeboxes with personal toiletry items to distribute to the elderly, veterans and homeless in the Washington DC area.

Environmental Clean-Up Efforts

Clean Up Australia Day:
IPA Australia employees and family members spent the day cleaning up a local wetland and park area in Melbourne.

Keep Loudoun Beautiful:
IPA North America employees participated in cleaning up a local watershed in Ashburn, Virginia.

Charity Fundraisers, Drives, and Collections

Loudoun Library Foundation: Used book drive that earned $250 plus 27 boxes of books *(IPA North America)*

Ladies Board of Loudoun Hospital Center: Clothing drive that collected 47 bags of clothing *(IPA North America)*

The Dr. Leocadio Jose Correia Nursery School: Nursery school children toy & clothing drive *(IPA Latin America)*

Lar Esperanca: Easter chocolate collection for children of low-income families *(IPA Latin America)*

HWWZ (Haagse Wijk-en WoonZorg): Children's toy and clothing drive *(IPA Netherlands)*

LINK: Food drive that collected a van full of non-perishable food, and $100 in cash donations *(IPA North America)*

Thames Valley Air Ambulance: Halloween Pumpkin Carving Competition & Bake Sale raised 100 Euros *(IPA UK)*

Bulgarian Children's Refuge Foundation: "Candy Corner" initiative raised 650 Euros *(IPA Netherlands)*

Cancer Council Australia: Morning Tea Event raised $816 *(IPA Australia)*

Upcoming IPA Events & Presentations for 2013

February 5 - 6

IPA to Speak at the SPE Applied Technology Workshop in Abu Dhabi

Rolando Gächter, IPA Manager of Exploration & Production is scheduled to speak at the upcoming Society of Petroleum Engineers (SPE) Applied Technology Workshop on Integrated Asset Modeling in Abu Dhabi on February 5th to 6th. This workshop will highlight the importance of integrated asset modeling in all phases of an oilfield life cycle. Rolando will be speaking during the Field Development Planning session. This session will address how IAM allows integrated field development planning by providing consistent and realistic inputs to subsurface and surface projects.

March 18 - 21

IBC 2013 in Leesburg, Virginia

The Industry Benchmarking Consortium (IBC) 2013 provides an independent forum for each participating company to view its performance against other companies' performance. The consortium highlights Best Practices used and reinforces their use to improve capital effectiveness. During the consortium meetings, attendees learn ways to improve specific elements of capital project execution through presentations and face-to-face discussions. For more information regarding the content of the IBC, please contact ***Andras Marton*** at ***amarton@ipaglobal.com***.

April 9 - 10

IPA to Speak at the LARTC 2nd Annual Meeting in Rio de Janeiro, Brazil

Carlos Flesch, Regional Director IPA Latin America and Félix Parodi, Ph.D., Review Board Member will present a paper titled ***"Reinvigoration of Capital Projects in Latin America"*** at the Latin America Technology Conference (LARTC) 2nd Annual Meeting. Carlos and Félix will discuss Best Practices and Lessons Learned on capital projects of the Latin America region. The meeting will be held April 9th to 10th in Rio de Janeiro, Brazil.

June 12 - 13

2013 Upstream Cost Engineering Committee (UCEC) in Houston, Texas

The UCEC, formally organized in 1999, is an approved subcommittee of the UIBC. The purpose of the UCEC is to improve upstream project and business results by providing metrics for better cost engineering. The UCEC metrics provide asset evaluation and concept development professionals with a better understanding of costs and schedules. The fifteenth annual UCEC meeting will be hosted by Shell in Houston, Texas. For more information, please contact ***Carlton Karlik*** at ***ckarlik@ipaglobal.com***.

September 17 - 18

Cost Engineering Committee (CEC) 2013 in Tysons Corner, Virginia

The CEC, formally organized in 1998, is an approved subcommittee of the IBC. The CEC focuses on all aspects of cost (or investment) engineering, including cost estimating, scheduling, and project control practices and metrics, with the goal of expanding the capability of the owner cost engineer. The primary vehicles for accomplishing these objectives are metrics, research, and practice sharing. The event is structured as a working meeting in which active participation is expected; the reward for participants is greater insight into the metrics and Best Practices. For more information, please contact ***Robert Brown*** at ***rbrown@ipaglobal.com***.

November 18 - 20

UIBC 2013 in Leesburg, Virginia

The Upstream Industry Benchmarking Consortium (UIBC) provides an independent forum for each participating company to view its performance against the performance of other companies. The consortium highlights Best Practices, reinforcing their importance in driving improvements in asset development and capital effectiveness. Consortium attendees learn ways to improve specific elements of capital project execution through presentations and interactive discussions. For more information, please contact ***David Rosenberg*** at ***drosenberg@ipaglobal.com***.

2013 IPA Institute Programs Schedule

To view full course descriptions, pricing, up-to-date registration details, and special discounts, please visit our website at www.IPAInstitute.com

Public Courses

Project Management Best Practices (22 PDUs)

- February 5 - 7: Houston, Texas
- April 2 - 4: Seoul, South Korea
- May 14 - 16: Sao Paulo, Brazil
- June 18 - 20: Lima, Peru
- July 23 - 25: Perth, Australia
- August 13 - 15: Houston, Texas
- September 17 - 19: Abu Dhabi, United Arab Emirates
- October 8 - 10: Moscow, Russia
- October 29 - 31: Shanghai, China

Best Practices for Small Projects (22 PDUs)

- February 19 - 21: Sydney, Australia
- March 5 - 7: Las Vegas, Nevada
- May 28 - 30: Beijing, China
- June 4 - 6: New Orleans, Louisiana
- July 2 - 4: Kuala Lumpur, Malaysia
- September 24 - 26: The Hague, The Netherlands
- October 8 - 10: Orlando, Florida

Megaprojects - Concepts, Strategies, and Practices for Success (22 PDUs)

- March 12 - 14: Rio de Janeiro, Brazil
- May 20 - 22: Moscow, Russia
- June 11 - 13: Calgary, Alberta, Canada
- October 14 - 16: Perth, Australia
- October 15 - 17: Bogotá, Colombia

Best Practices for Mining Projects (16 PDUs)

- April 23 - 24: Santiago, Chile
- June 25 - 26: Brisbane, Australia
- September 24 - 25: Belo Horizonte, Brazil

Gatekeeping For Capital Project Governance (16 PDUs)

- May 14 - 15: Bangkok, Thailand
- July 30 - 31: Johannesburg, South Africa
- September 4 - 5: Gold Coast, Australia
- September 25 - 26: Houston, Texas

Contracting in the Changing World of Projects (12 PDUs)

- July 17 - 18: Santiago, Chile

Exploration and Production Project Best Practices (22 PDUs)

- August 6 - 8: Rio de Janeiro, Brazil

Establishing Effective Capital Cost and Schedule Processes (16 PDUs)

- August 27 - 28: Sao Paulo, Brazil

Private Programs *Contact IPAInstitute@ipaglobal.com for more information*

Megaprojects - Concepts, Strategies, and Practices for Success (22 PDUs)

- January 14 - 16: Houston, Texas *(Sasol)*

Exploration and Production Project Best Practices (22 PDUs)

- February 4 - 6: McAllen, Texas *(Monclova Prineos Gas)*

The Industry Benchmarking Consortium (IBC) is a premier training opportunity in capital stewardship for both business and project professionals. As in previous years, IPA will present metrics of the participating companies as well as findings of research studies performed by IPA.

DETAILS:

The 23rd annual meeting of the IBC 2013 is scheduled to take place from ***March 18 to March 21, 2013***, at the Lansdowne Resort in Leesburg, Virginia.

The IBC provides ample networking opportunities during breakfast, lunch, and breaks, in addition to evening reception on Monday at the Lansdowne Resort. Dinner Tuesday evening will be held at the nearby ***Udvar-Hazy National Air and Space Museum*** at Dulles Airport.

AGENDA:

Monday

- The IBC begins on Monday with a Metrics and Statistics Primer session, followed by highlighted research presentations from previous IBCs. Roundtable sessions will also be held to provide the opportunity for small groups of company representatives to discuss a topic of interest with facilitation by IPA.

Tuesday & Wednesday

- The centerpiece of each IBC is the sharing of outcomes and practices of the participating project systems. Two metrics sessions will be held as part of this focus. The first will be a plenary session on Tuesday that will highlight overall industry trends and overall company metrics; the second session on Wednesday will be broken into smaller groups by industry sector to discuss trends and practices for each sector.
- Major research studies to be presented may include the following:
  - **How Business Decisions Shape Project Value**
  - **Schedule Review and Validation**
  - **Leadership of Large Complex Projects**
  - **Sustainability**
  - **Role of Project Steering Committee and Decision Review Board in Project Governance**
- IPA research will be complemented by presentations from member companies on relevant topics.

Thursday

- The objective of this portion of the conference is to share performance results and practices that are specifically applicable to site-based projects. Site-based systems metrics and turnaround trends will be presented in addition to the following research studies:
  - **Impact of Site Contracting Approaches on Site-Based Projects**
  - **Site Organizational Effectiveness**

On Wednesday and Thursday mornings, the IPA Institute will present two selected modules from the Institute's project management courses. These 1-hour presentations will be free to attendees. The IPA Institute welcomes your suggestions for course modules you are interested in attending at IBC 2013. Check out the Course Catalog page at IPAInstitute.com and send your suggestions to IPAInstitute@ipaglobal.com.

For more information about the research topics and conference content, contact **Andras Marton** at ***amarton@ipaglobal.com***. For logistical information, contact **Ellie Reynolds** at ***ereynolds@ipaglobal.com*** .

www.ipaglobal.com

IPA improves the competitiveness of our customers through enabling more effective use of capital in their businesses. It is our mission and unique competence to conduct research into the functioning of capital projects and project systems and to apply the results of that research to help our customers create and use capital assets more efficiently.

www.IPAInstitute.com

The IPA Institute's mission is aligned with the overall IPA mission to improve the capital productivity of its clients. The programs offered provide a forum for in-depth understanding of key elements of the capital project process and how to apply these learnings to effect positive changes and improvements, resulting in the more effective use of capital.

IPA North America

The IPA Institute
44426 Atwater Drive
Ashburn, Virginia 20147
PH: +1 (703) 729-8300
Fax: +1 (703) 729-8301

IPA Latin America

Rua Pasteur, 463-salas 1201/1202
Curitiba, Paraná 80250-080, Brazil
PH: +55 (41) 3028-9028
Fax: +55 (41) 3028-9024

IPA United Kingdom

Wellington House, First Floor,
Worton Dr.
Reading, RG2 0TG
PH: +44 (118) 920-7800

IPA Netherlands

Prinsenhof Building, Prinses
Margrietplantsoen 32
2595 BR The Hague,
The Netherlands
PH: +31 (070) 335-0707
Fax: +31 (070) 335-0642

IPA Singapore

#03-07 Creative Resource
31 International Business Park
Singapore 609921
PH: +65 6567-2201
Fax: +65 6567-2231

IPA China

Beijing Mairuo Industry
Technical Consulting Company
Room 9912B, Jingshi Building
No. 19 Xinjiekouwai Street
Hai Dian District
Beijing
P.R. China 100875
PH: +86 (10) 5880-1970
Fax: +86 (10) 5880-1957

IPA Australia

Level 1, 56 Burgundy Street
Heidelberg, Victoria, 3084
PH: +61 (39) 458-7300
Fax: +61 (39) 458-7399