



BEST PRACTICES IN  
Contractor Management





## Executive summary

This report summarizes the results of a Campbell Institute research project to aggregate the best practices of world-class organizations in EHS around the management of contractor and supplier safety. The area of contractor safety management is especially pertinent in an increasingly global and complex world that involves work in multiple countries, non-routine work and the use of international and temporary workforces. The specific aims of this research project were to:

- 1 Outline the gaps currently faced by many organizations regarding contractor EHS management and summarize the major ways in which safety can be affected by contractor use;
- 2 Describe the best practices of Campbell Institute members and partners in managing contractor safety at all stages of the contractor life cycle;
- 3 Identify the common challenges experienced by Campbell Institute members and partners in monitoring and evaluating contractors.

These research aims were addressed through a mixed-method approach involving a group discussion, document content analysis, peer-to-peer presentations and phone interviews with member organization representatives. A panel of EHS experts was convened to outline the stages of the contractor life cycle, from the initial vetting and prequalification stage to a final post-job evaluation. Participants in the research project offered their contractor and supplier guidelines for content analysis by Institute research staff to identify the comparison points of contractor programs based on the steps of the contractor life cycle. Finally, data collection occurred through peer-to-peer presentations to the Institute Research & Knowledge Subcommittee and a series of one-hour phone interviews with Institute participants.

Results showed that Institute participants share many common best practices in the first half of the contractor life cycle, specifically in terms of initial procurement and prequalification, pre-job task and risk assessment, and contractor training and orientation. This research also brings up the implications of reliance on third-party prequalifying agencies and heavy emphasis on a contractor's lagging statistics. The common challenges among Institute participants appear to lie in the follow-up steps of job monitoring and post-job evaluations, particularly in having formally structured disciplinary action and post-work debriefings.

Most contractor programs tend to focus heavily on managing risk and insurance coverage, which at first glance may demonstrate that the bottom line of the contractor prequalification and management process is to reduce ex-post costs. In other words, a cursory conclusion is that money and contract cost appear to be the primary driving factors for creating a contractor management program. Another way to look at this, however, is that safety is just good business. Screening for high incident rates and avoiding contracts to high-risk contractors not only reduces liability and insurance claims, but creates safer work sites and increases the potential profitability for all parties involved – owners, contractors, and subcontractors alike.

# Introduction and Background

The issue of managing contractor EHS performance is an ongoing concern among organizations of all industries, typically because contractors may be performing non-routine work at sites that are not directly supervised by an EHS manager, or any manager at all. Much research has already been done to determine why safety can be negatively impacted through contractors and how much (or little) attention is paid to managing contractor safety. This research report investigates how and why Campbell Institute Members manage contractors on site from prequalification to post-job evaluation, overall exploring cross-industry best practices for contractor management.

The prequalification process for contractors involves numerous steps and variables, with safety and health being just one factor out of many. Empirical and anecdotal evidence shows that occupational safety and health (OSH) is often poorly managed in contractor relationships. This fact, however, paradoxically offers an opportunity for contractors and supply chains to be used to enhance OSH in supplier and purchaser organizations.

OSH is often overlooked in contractor relationships and the prequalification process because other criteria tend to take precedence during vetting. In a literature review and exploratory survey of 58 program managers, directors and general managers, Watt et al. (2009) found that the top preferred criteria to evaluate contracts were: contractors' management and technical capability, past experience and performance, reputation, and proposed work methods. Environment, health and safety ranked only about tenth in a list of important criteria in the literature review, and ranked even lower in the survey results. A survey of those in the construction industry (Wong et al., 2001) asked participants to rank the importance of "site organization, rules and policies (health and safety, etc.)" in awarding contracts. While this particular factor was never ranked below 13 out of 37 for any type of project, the most consistently highly ranked factor was "ability to complete on time."

While it is a rigorous and often drawn-out process, there are many benefits to the prequalification process that go beyond mere assurance of occupational safety. In terms of relationships and communication, prequalification was found as an opportunity to develop solid relationships between owners and contractors and encourage contractors to modify their behavior in light of a long-term view of the contracting relationship (Baroudi & Metcalfe, 2011). Additionally, because prequalification forces contractors to scrutinize their practices and systems, it appears that prequalification provides opportunities for continuous improvement (Ibid., 2011).

Despite formal language in company guidelines that focus intently on a contractor's "financial soundness, technical ability, management capability, and health and safety performance" (Walters & James, 2011:991, *italics added*) during the bidding process, researchers have found that the factors most in consideration during pre-qualification were contractor experience, quality record, and company reputation (Ibid., 2011). OSHAS 18001 standard recommends that safety and health requirements be applied to contractors and the ANSI Z10-2012 standard implies that contractors be vetted with respect to their previous safety performance before being awarded a contract. Even with these recommendations, contractor outsourcing is far from standardized across companies.

Several researchers have looked into the major ways in which occupational health and safety is compromised by use of contractors. Researchers typically identify three sets of factors explaining why safety outcomes are compromised through outsourcing and subcontracting (Quinlan et al., 2013; Underhill & Quinlan, 2011). First, financial pressures and impending deadlines often lead to contractors cutting corners or engaging in unsafe behavior. Workers in temporary employment often work with minor injuries out of fear of losing employment, making them susceptible to greater injury.

Secondly, hazardous forms of disorganization, such as lax training and supervision and fractured information flows can compromise safety among contractors. Contracted employees and subcontracted workers may be undertrained and underqualified, and lack of communication and supervision means that they never acquire the needed skills or safety knowledge for the job. Cox and Cheyne (2000) found that contracted workers expressed concern that briefing documents were unclear and ambiguous and that opportunities for their involvement in safety initiatives were low. The hiring and oversight of subcontracted workers is of particular concern in communicating safety information and defining safety roles. Unclear work responsibilities among contractors, subcontractors and owners (e.g. Who should conduct hazard assessments? Who oversees subcontractor safety?) can lead to higher incident and injury rates (Clarke, 2003; Loosemore & Andonakis, 2007). To compound matters, the potential amount of cultural diversity and different languages can make it difficult to communicate safety and health information (Loosemore & Andonakis, 2007; Schubert & Dijkstra, 2009).

Lastly, insufficient safety standards for contractors and relaxed enforcement of such standards explain why contractor safety performance is lower than owner organizations. These factors contribute not only to the compromised safety of subcontracted workers, who are more susceptible to risk exposure than permanent employees, but may have spillover effects on product quality and the safety of regular workers (Quinlan et al, 2013).

The quality of information and communication is one of the most cited reasons for fatal incidents among outsourced operations. In a case study analysis, Nenonen (2011) found that deficiencies in instructions, inadequate flow of information, and insufficient task planning and hazard identification were cited more frequently as root causes of fatal incidents for outsourced operations than for in-house operations. Fittingly, occupational instruction and better task planning were the most recommended corrective actions for managing contracted labor (Ibid., 2011).

Non-rigorous standards for contractor requalification can also be seen as a significant challenge to contractor safety management. While the majority (72%) of contractors in a study by Jennings and Holt (1998) were reassessed on an annual basis, 17% of small contractors (those with revenue of less than £5 million, or \$7.4 million) and 21% of large contractors (those with a revenue of more than £50 million, or \$74.3 million) were never reassessed after being placed on a standing list. This is a disturbing fact when one considers that a periodic review is the main touch point for determining if certifications and training are up-to-date and that the terms of the contract are being fulfilled (Colby, 2014).

Yemenu and McCartin (2010) identify other proactive measures for managing contractors. There should be a clear communication of corporate values to contracted workers through as many means possible (e.g. email, bulletin boards, in-person meetings) and owner companies should perform a thorough vetting of contractors through performance indicators (TRIR, DART) to make contractor procurement decisions. To account for a lack of standardization in obtaining contractors, Yemenu and McCartin (2010) recommend obtaining continual updates on lagging and leading indicators of contractors to inform on performance and identify areas for improvement. Their analysis shows that contractors that meet the owner's scorecard requirements had a three-year TRIR average that was 78% lower than those contractors who did not meet scorecard requirements, and that actively managed contractors have lower incident rates than industry peers (Ibid., 2010).

A final case for incorporating OSH in contractor management is that effective contractor relationship management is a key factor for failure-based learning. Gressgard and Hansen (2014) found that contractor relationship management, measured by follow-up of contractor feedback and certifying proper training of contracted workers, had significant positive effects on knowledge exchange between contractors and

relevant units of an owner organization. The study's overall conclusion was that contractor relationship management leads to increased knowledge exchange and the ability to learn from failures, which ultimately increases the level of safety at an owner's site.

With these challenges for contractor safety management in mind, the Campbell Institute initiated a research project to discover what world-class companies do to bridge these gaps and maintain high-level EHS performance even among a contracted workforce. The outcome of this research project is a collection of best practices in contractor management, from prequalification to post-work evaluation, from 14 Campbell Institute member organizations. While the majority of this research focuses on the life cycle of short- and long-term project contractors, it is important to note that all types of contract workers – from delivery drivers and vendors to janitorial and grounds keeping services – can be accounted for under the practices presented in this paper. These best practices collectively represent a model or general framework for managing contractors at all points of the life cycle. The information this research presents should be relevant not only to those organizations seeking to improve their contractor programs, but also to already high-performing companies seeking to benchmark their practices and continue their journey to zero.

## Methods

The project began with a convening of 15 EHS professionals representing Campbell Institute member organizations in September 2014. During this meeting, participants discussed the major steps of the contractor life cycle and agreed on the following:



In the following months, Campbell Institute staff collected information on contractor safety programs from 14 member organizations and analyzed the programs for points of comparison based on the steps of the contractor life cycle. This comparative analysis of several industries spanning construction, oil and gas, and

manufacturing became the basis for the Contractor Program Benchmarking Table presented in the results. To fill in details of contractor programs that may not have been included in the submitted documents, or to clarify information, Institute staff conducted short interviews with representatives from the member organizations.

Data collection also occurred through a series of member presentations to the Campbell Institute Research & Knowledge Subcommittee. During the subcommittee's regularly scheduled monthly web meetings, a different member gave a short talk on his/her company's contractor management program, followed with questions and answers from the group. Data was further obtained through in-depth interviews with representatives at Campbell member organizations responsible for contractor and supply chain safety.

## Results

### Top compromising factors of using contractors and mitigating practices of Institute participants





# Best Practices

The following subsections outline the best practices in contractor safety management across the contractor life cycle gleaned from the combination of document content analysis, presentations and interviews. Due to their investment in the safety and health of all employees, even those under contract, Campbell Institute organizations have injury rates 6.5 times lower than industry average and lost day rates 6 times lower than industry average (Campbell Institute, 2013). Campbell organizations' common practices regarding contractor safety management indicate their world-class status in EHS and make the business case for safety.

## PREQUALIFICATION

The majority of member organizations involved in the study (10/14) use third-party prequalifying companies or are about to launch a program with one of these companies. One rationale for using external prequalifying agencies is due to the size and number of projects involving contractors at Campbell member organizations, which typically are located all over the world. The widespread use and large scope of contractors in global organizations like Campbell members often necessitates the services of prequalifying companies to handle a large part of the initial vetting process.

Cummins, for instance, utilizes a third-party prequalifier because this agency assists contractors in finding performance gaps and areas of improvement. The agency works with contractors to bridge those gaps and become better candidates to bid on Cummins projects. Schneider Electric utilizes a prequalifying agency to review the proposed work procedures for high-risk contractors in particular. This third-party prequalifier also evaluates contractors to ensure compliance with Schneider's insurance requirements. AECOM uses a third-party prequalifying agency because of that agency's experience prequalifying oil and gas contractors, which is an industry where AECOM does a lot of work.

Johnson Controls will use a third-party prequalifier at a customer's request and is considering using a third party because of the diversity of its business units. Johnson Controls also notes, however, that using a third party to prequalify may exclude smaller subcontractors who cannot afford the cost of being associated with a prequalifying agency. Many of these smaller contractors include those owned by minorities, women, veterans, etc. Prequalifying contractors exclusively through a third-party agency may therefore cause conflict in JCI's diversity recommendations.

It is no surprise that all of the members in the study assess contractors on their safety statistics, such as Experience Modification Rate (EMR), Total Recordable Incident Rate (TRIR), fatality rate, DART, and other OSHA recordables. These rates and numbers are well understood across organizations of all sizes and industries, which make them standard for data collection and evaluation. All members require contractors to submit these statistics for a given time period, typically the last three years.

The above safety statistics are just a baseline, however, for the wealth of rates and numbers that are collected and calculated by Campbell Institute participants during the vetting process. NASA also looks at a contractor's TRIR as compared to an applicable NAICS code, worker compensation claims, injury logs, environmental reports and regulatory citations. For smaller subcontractors that may not be able to calculate an EMR, Johnson Controls will ask for other information (e.g. citation record, fatalities) in order to make an equivalent judgment of a subcontractor's fitness for the job. Some Institute members have contingency plans in the event that a contractor's statistics do not initially make the cut. At U. S. Steel, contractors can submit a continuous improvement plan as part of its documentation that must be reviewed and approved by U. S. Steel Materials Management and Safety.



FEATURED CAMPBELL  
INSTITUTE MEMBERS:



**The transformative force** in EHS



The majority of research participants (11/14) possess some form of internal scale, checklist, or metric for which a contractor must receive a “passing grade” to be approved for work. Georgia-Pacific contractors are assigned a letter grade (A, B, C, or D) based on standard safety statistics, presence of written safety programs, leading indicators and performance evaluation. Chevron also assigns grades to contractor applications based on TRIR, responses to a written safety questionnaire and a field audit of written safety programs. For both Chevron and Georgia-Pacific, contractors must hold a grade of A or B to receive a contract.

Other organizations do not assign grades but still maintain a rating system. Cummins calculates a Contractor Safety Performance Metric that is based on occupational safety and health history, proof of permits and licenses, and documented safety practices and policies. Fluor rates contractors’ prequalification evaluations as: satisfactory, satisfactory with advisory notice, satisfactory with corrective action plan, or unsatisfactory. This rating is based on a contractor’s safety statistics, EHS policy, trainings offered, incident reporting, EHS meetings, pre-task planning and inspections.

### PRE-JOB TASK AND RISK ASSESSMENT

Two-thirds of research participants (9/14) have a method to evaluate the risk rating of the work to be performed (typically per a risk matrix) to place contractors in a predetermined risk category. Georgia-Pacific, for instance, performs an initial risk assessment based on the broad scope of work and a second assessment based on the contractor’s detailed work procedure. Georgia-Pacific utilizes a risk matrix and assigns point values for severity, frequency, and probability to calculate the risk associated with a given project. Projects with higher risk ratings must provide additional written safety programs. A similar process at NASA assesses contractors with a risk matrix looking at incident likelihood, severity, cost, schedule, security, and other factors. NASA’s project technical team requires contractors to describe work plans to mitigate risk.

In terms of risk assessment, Schneider Electric categorizes contractors as “A” (higher liability) or “B” (lower liability). Higher liability work typically involves work at eight feet or higher, scaffolding, power tools, cutting equipment, and other heavy machinery. A similar process at Norfolk Southern assesses risk in terms of insurance liability and the type of work involved, particularly if it is in close proximity to an operating rail line. At U. S. Steel, larger capital projects require an in-depth risk assessment. Based on the assessment, additional actions may be required of the contractor, such as a Hazardous Job Meeting and job walkthroughs. In some instances, different methods for completing the job may be explored. At BNSF, projects are assigned a “prequalification action level” that is dependent on the risk level of the work. All projects scoring a 4 or above (on a 6-point scale) are deemed to have a high prequalification action level, which requires prequalification through a third party.

The majority of research participants (10/14) specify that the general contractor is in charge of hiring subcontractors and managing their safety. In these situations, subcontractors are held to the same standards as general contractors, but it is the general contractor’s responsibility to apply those standards. This responsibility provides yet another reason for companies to be diligent about hiring reliable and accountable general contractors from the start. At Firmenich, one part of the prequalification process for contractors is to evaluate their standards and procedures for qualifying subcontractors. Likewise at U. S. Steel and Chevron, subcontractors must meet the same requirements as all other contractors on site. AECOM requires contractors to prepare and submit in advance of work a hazard analysis for the tasks they control. This requirement is communicated through the subcontractor procurement process. General contractors choose subcontractors and are responsible for ensuring that subcontractors meet the process requirements.

Firmenich

FLUOR®





## CONTRACTOR TRAINING AND ORIENTATION

All organizations require safety orientation and skills training of contractors in order for them to be approved for work. These orientations and trainings are provided on site. All organizations also require special permits or training for specific kinds of work, including (but not limited to) confined space entry, electrical work, hot work, energy control, forklifts, elevated work, etc. Specialized safety training is also provided, including HAZWOPER, hazard identification, PPE, LOTO, fall prevention, etc. At USG, these specialized area trainings are completed through a contracted online program. For Cummins, refresher programs in job-specific areas are held at least annually for long-term suppliers. At BNSF, contractor orientation is conducted via an internal online program. After completion of the online course, contractors receive a badge that must be worn on site.

Safety orientations for contractors are required at all Campbell Institute participant sites, although the methods may vary slightly. At Fluor, contractors attend a Contractor HSE Alignment Kickoff meeting with hazard awareness and compliance training to be completed within one week of start of work. Firmenich's general safety orientation includes a contractor safety video with a test directly afterwards. Contractors are allowed two attempts to pass the test (passing grade = 80%) and are not allowed to work otherwise. U. S. Steel stipulates that contractors are responsible for the training of their employees; all contracted employees must attend pre-shift safety meetings, which are documented over a twelve-month period. All contracted personnel attend Safety Awareness training annually. AECOM requires leaders to complete a 30-hour OSHA course and all other contracted personnel to complete a 10-hour OSHA course before beginning work. Many contractors at Norfolk Southern are so closely integrated with formal NS personnel that they receive the same job safety briefings that all NS employees receive. Finally at BAPCO, contractors must provide health and safety training to their employees and submit a list, verified by BAPCO, of contracted employees who have attended induction training.

## MONITORING OF JOB

Every organization in the study has periodic assessments during the contract term, which varies from daily checklists and/or safety talks to weekly walkthroughs, monthly and yearly assessments. U. S. Steel performs daily inspections of contractor work to assure that it is in compliance with the Pre-Task Safety Plan submitted prior to start of work. U. S. Steel also requires contract employees to submit safety observations; a minimum of two observations per employee per month must be completed and documented. In addition to routine oversight of contractors at Chevron, the monitoring process includes Performance Reviews and Field Verifications, which are major components (collectively 65%) of a contractor's grade. The frequency of these reviews and verifications are based on the work project's risk profile and overall contractor grade. To track observations on a daily basis, AECOM uses a mobile application (AECOM LifeGuard) to report non-compliance or unsafe conditions and measure "time to closure" as a leading metric. When a report is logged, the application will alert the contractor and track the time for the report to be closed.

The maintenance of incident logs is also crucial to monitoring contractor safety during a project. At NASA, contractors must provide quarterly reports on lost-time injuries and dollar losses. This information is included in a Quality Assurance Surveillance Plan to assure that taxpayer dollars are being spent wisely. BAPCO requires contractors to maintain incident and near miss report logs to ensure that proper corrective actions are implemented.



**The transformative force** in EHS

## Common Challenges

While the organizational participants in the study shared several common best practices for managing contractor safety, they also expressed a few common challenges, particularly in the latter stages of the contractor life cycle.

### MONITORING OF JOB

Just over half (8/14) of the organizations included have specific courses of action in the case of contractor infractions. At USG, there are consequences outlined for the first, second and third infractions, with a termination of the contract after the fourth infraction. Cummins determines a course of action for infractions based on the severity of the incident and/or the severity of the supplier's conduct. A flow chart of actions is included in the appendix of their contractor guidelines with four key steps: counseling and verbal warning, counseling and first written warning, counseling and second written warning, and finally dismissal or barring from facilities.

For U. S. Steel, all levels of discipline can be applied to contractors for infractions, up to and including permanent discharge of the contractor. All infractions, however, are handled on a case-by-case basis. This is similar to Georgia-Pacific's guidelines, which include a list of potential consequences for less-than-adequate performance on the part of contractors. These guidelines are left somewhat open for closer inspection of less-than-adequate performance or safety incident.

BNSF, Johnson Controls, and AECOM employ an informal progressive discipline policy but also have strict policies for specific types of serious infractions. For instance, a violation of fall protection policy at AECOM will result in immediate termination of a contract. In some cases, AECOM utilizes a subcontractor performance improvement plan and the Executive Incident Review process to assist subcontractors with system and organizational changes needed to improve their overall safety program beyond a specific incident or violation. At BNSF, any violation tied to one of five exposures (e.g. LOTO) will result in work stoppage until the contractor is retrained. For Johnson Controls, any conditions that are classified as immediately dangerous to life and health (IDLH) are grounds for immediate termination of a contract worker.

Another common challenge experienced by Campbell Institute participants is the integration of contractors into the organization's own safety statistics. Of the fourteen participants in the research, only two (Chevron and Norfolk Southern) mentioned definitively that contractor statistics are incorporated into the larger organizational metrics. Norfolk Southern tracks the number of contractor injuries each year and sets goals for itself in this area. Contractor injuries are included in the overall NS scorecard. U. S. Steel tracks contractor numbers separately from the larger organization, but those numbers are shared and communicated on a weekly basis. Johnson Controls tracks its own statistics and those of contractors separately, but can aggregate these numbers depending on a customer's request.

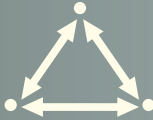




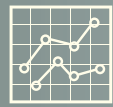
In a departure from a previous Campbell Institute white paper on the state of leading indicators in which most respondents answered that contractors are included in leading indicator metrics, the majority of participants in this study did not indicate that they included contractors in their lagging metrics. One reason for this points back to why organizations choose to hire contractors in the first place – to offset risk and improve overall organizational lagging indicator performance by delegating the work to contractors. In other situations, including contractors in lagging safety statistics could create serious complications in calculating indemnity costs. Several respondents to the previous study mentioned that including contracted workers in organizational metrics makes EHS goals harder to achieve, but provides a more accurate picture of an organization's overall performance, and develops a stronger team spirit and shared vision for EHS between owners and contractors. For these reasons, including contractors in lagging metrics remains a challenge for the majority of participants in this study.






**U. S. Steel**

## Summary of best practices and common challenges

### Best Practices

>	Use of third-party prequalifying companies	
>	Assessment of contractor safety statistics (EMR, TRIR, DART, fatality rate, etc.)	
>	Internal scale or checklist to assign grades to contractors during prequalification	
>	Risk rating for work to be performed by contractor	
>	Placing general contractors in charge of subcontractor safety and holding them to owner standards	
>	Verification of contractor certifications and permits; on-site safety orientations	
>	Periodic, scheduled assessments during contract term	

### Common Challenges

>	Lack of formalized structure for disciplinary action	
>	No integration of contractor lagging metrics into owner's safety statistics	
>	Lack of formalized post-work evaluation process	

**The transformative force** in EHS 



## POST-JOB EVALUATION

A final challenge shared by the participants in this research is the lack of an evaluation of contractors after the work has been completed. Only five participants have a post-job evaluation or specific guidelines for contractor requalification. At Georgia-Pacific, the results of a post-work evaluation are taken into consideration when a contractor bids on future jobs. Cummins has a Safety Performance Assessment of all suppliers once a year or near the end of a contract period. Johnson Controls' post-job performance assessments take into account safety, customer service, and the quality of finished work. U. S. Steel has a Safety and Operating Inspection completed for every process change, enhancement or facility improvement that is not part of routine maintenance work, which in turn serves as a post-job evaluation. In a similar fashion, Chevron's periodic Performance Reviews also capture an evaluation of contractor performance after a job has been completed. AECOM's Industry Safe™ management system records incidents tied to a contractor and saves that information for future use.

Research participants nonetheless expressed a desire to incorporate more post-work evaluative methods into contractor guidelines. This is mostly due to the fact that so much effort is placed into the vetting process for contractors that a sufficient evaluation stage is needed to determine if the work was done correctly and safely. Only two participants mentioned any sort of process to determine the effectiveness of contractor work. USG looks at the number of claims from contractors as a measure if the work was performed safely. U. S. Steel management reviews a contractor's measurement of the effectiveness of safety orientation and training. These effectiveness measures include testing, observations and injury rates, among others. AECOM performs an internal evaluation in which it asks if contractor reports were turned in, if contractor safety plans were reviewed, and if at-risk behaviors were immediately addressed. This evaluation not only indicates how well contractors performed on the job, but also how well AECOM managed their safety.

## Discussion and Future Directions

The prequalification process is rigorous at all the organizations represented in this study. The analysis of a contractor's safety statistics appears standard across all organizations, but the participants in the research have gone beyond looking merely at numbers and also considering a contractor's use of leading indicators, the quality of their safety programs, and the presence of continuous improvement plans. Many Campbell participants also use the services of third-party prequalifying agencies to help contractors bridge any gaps in their safety management systems and increase their eligibility for bidding on projects.

An interesting discussion point and an area of future research would be to delve into the implications of reliance on third-party prequalifying organizations. While these organizations have significant data to show that association with their agencies has resulted in reduced EMR and TRIR, the heavy emphasis on these lagging metrics raises the larger issue of underreporting or suppression of statistics on the part of contractors – particularly when those employed by a contractor know the implications that these statistics have on their ability to procure future work.

A quick glance at the studies on contractor management over the past twenty years reveals that there is no shortage of research, methods and formulas for calculating and assessing the risk of contractor tasks. It is therefore no surprise that so many of the organizations in this study maintain a method for rating the risk of work to be performed and for categorizing contractors in terms of risk and liability. The effort put into orienting and training contractors and ensuring that their certifications are current is further evidence of the need to mitigate risk and extend the culture of safety to all workers on site, temporary and otherwise.

Extending the culture of safety among contract workers, especially in a global context, is another avenue of future research. As many companies that operate internationally will attest, procuring safe and reliable contractors in certain areas of the world can be difficult because of a region's lax safety standards and/or the low number of contractors to choose from. In these cases, banning a contractor from work on a project may not be the best solution. A more viable option may be for owner companies to help contractors achieve better performance through adherence to owner policies, thereby lifting the standard of the industry as a whole. Similarly, studying at-risk programs for contractors based on performance and/or years of service could reveal another best practice for managing a contractor workforce. In short, an organization cannot simply reduce risk and exposure by contracting out the work. There is more to be gained by truly owning and managing contractor safety.

Something else to ponder in future research on contractors is to rethink the concept of “non-routine activities” when contracting out work. Contractors and owners may have very different ideas about what constitutes a “non-routine” project, and even routine work for a contractor may become non-routine if working in an unfamiliar environment. Future discussions of how to improve contractor safety could involve brainstorming better and innovative ways to define non-routine activities.

The extensive vetting process plus the numerous and varied methods for assessing a contractor during the period of the contract term make it all the more surprising that so few of the participants in the study had a method of evaluating contractors once the work is finished, nor specific guidelines for contractor requalification. This appears to be a common challenge among Institute participants. Most interviewees for this project, however, agree that thorough post-work evaluations and a rubric for contractor requalification are good common practices to have.

The importance of integrated systems in the procurement and requalification of contractors presents another subtopic for future research in contractor safety management. It would be interesting to explore the extent to which organizations integrate procurement with safety functions, finance, accounts payable, etc. If a contractor has been procured or has been red-flagged for not meeting minimum standards, how the rest of the organization is notified is an example of its (non)integration.

Integrating contractors into owner safety metrics is another area where there is less consensus among Campbell participants. The majority do not include contractors in their safety metric calculations, although it is noted that doing so creates a better picture of an organization's overall safety performance, while also promoting a cohesive team spirit approach to safety. Given time, this may be another best practice among high-performing organizations in EHS.

Lastly, the majority of research on contractors and prequalification is heavily focused on safety statistics without much mention of contractors' efforts to support the health of their workers or the environment. Would a contractor still be seen as a viable candidate if its programs for worker wellbeing and environmental preservation were also taken into account? Exploring the ways that owner companies incorporate all aspects of the EHS function into the prequalification process can reveal more best practices in contractor management.

Most contractor programs tend to focus heavily on managing risk and insurance coverage, which at first glance may demonstrate that the bottom line of the contractor prequalification and management process is to reduce ex-post costs. In other words, a cursory conclusion is that money and contract cost appear to be the primary driving factors for creating a contractor program. Another way to look at this, however, is that safety is just good business. Screening for high incident rates and avoiding contracts to high-risk contractors not only reduces liability and insurance claims, but creates safer work sites and increases the potential profitability for all parties involved – owners, contractors, and subcontractors alike.

## WORKS CITED

- Baroudi, B.M., & Metcalfe, M.** (2011). A human perspective of contractor prequalification. *Australasian Journal of Construction Economics and Building*, 11(2), 60-70.
- Campbell Institute** (2013). The business case for EHS: Creating a sustainable business. National Safety Council: Itasca, IL.
- Clarke, S.** (2003). The contemporary workforce, implications for organizational safety culture. *Personnel Review*, 32(1), 40-57.
- Colby, C.** (2014). A four-step process for safety success with a temporary workforce. *EHS Today*, Sept. 2014, 32-34.
- Cox, S.J., & Cheyne, A.J.T.** (2000). Assessing safety culture in offshore environments. *Safety Science*, 34, 111-129.
- Gressgard, L.J., & Hansen, K.** (2014). Knowledge exchange and learning from failures in distributed environments: The role of contractor relationship management and work characteristics. *Reliability Engineering and System Safety*, 133, 167-175.
- Jennings, P., & Holt, G.** (1998). Prequalification and multi-criteria selection: A measure of contractors' opinions. *Construction Management and Economics*, 16, 651-660.
- Loosemore, M. & Andonakis, N.** (2007). Barriers to implementing OHS reforms: The experiences of small subcontractors in the Australian construction industry. *International Journal of Project Management*, 25, 579-588.
- Nenonen, S.** (2011). Fatal workplace accidents in outsourced operations in the manufacturing industry. *Safety Science*, 49, 1394-1403.
- Quinlan, M., Hampson, I., & Gregson, S.** (2013). Outsourcing and offshoring aircraft maintenance in the US: Implications for safety. *Safety Science*, 57, 283-292.
- Schubert, U., & Dijkstra, J.J.** (2009). Working safely with foreign contractors and personnel. *Safety Science*, 47, 786-793.
- Underhill, E., & Quinlan, M.** (2011). How precarious employment affects health and safety at work: The case of temporary agency workers. *Industrial Relations*, 66(3), 397-421.
- Walters, D., & James, P.** (2011). What motivates employers to establish preventive management arrangements within supply chains? *Safety Science*, 49, 988-994.
- Watt, D.J., Kayis, B., & Willey, K.** (2009). Identifying key factors in the evaluation of tenders for projects and services. *International Journal of Project Management*, 27, 250-260.
- Wong, C.H., Holt, G.D., & Harris, P.** (2001). Multi-criteria selection or lowest price? Investigation of UK construction clients' tender evaluation preferences. *Engineering, Construction and Architectural Management*, 8(4), 257-271.
- Yemenu, D., & McCartin, K.** (2010). Contractor management best practices: Using data for improved decision making. ISN Software Australia Pty Ltd., Australia Square, New South Wales.

Author: *Joy Inouye*

Additional Campbell Institute Staff: *John Dony, Katie Knee and Katherine Smith*





## Institute participants

*as of September 1, 2015*

## About the Campbell Institute

The Campbell Institute at the National Safety Council is the environmental, health, and safety (EHS) Center of Excellence. Built on the belief that EHS is at the core of business vitality and intrinsic to operational excellence and financial performance, the Institute helps organizations of all sizes and sectors achieve and sustain excellence.

### CONTACT INFORMATION

**Campbell Institute**  
NATIONAL SAFETY COUNCIL

CALL +1-630-775-2283

WEB [thecampbellinstitute.org](http://thecampbellinstitute.org)

EMAIL [campbellinstitute@nsc.org](mailto:campbellinstitute@nsc.org)



[nsc.org](http://nsc.org)