



Safety Performance through Operational Excellence, Phase II

Construction Industry Institute

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Executive Summary

Upon completing its four-year journey to understand and model Operational Excellence (OE) for safety in the delivery of capital projects, Research Team 317 (RT-317) has concluded that OE is simply “doing the right thing, the right way, every time – even when no one is watching.” Developing a model to represent that concept during Phase I of the research led to outlining a holistic, professional, and rigorous safety program during Phase II. (Phase I is described in Research Summary 317-1 *Safety Performance through Operational Excellence – Phase I*, and Research Report 317-11, *Improving Site Safety Performance through Operational Excellence*.)

CII companies have found it challenging to reach the next level of safety performance. Some member organizations have spent significant resources developing programs and audits to improve safety. RT-317’s research products assist this effort by offering a proven model and an approach to conduct a large-scale assessment of a project’s commitment to safety. Users of the RT-317 findings will be able to identify gaps between what is stated at the corporate level and what is actually done in the field, identify areas that could yield the greatest opportunities for safety improvement up, down, and across their organizations, and ascertain the level of effort required for change.

RT-317’s research approach for Phase II, outlined in this research summary, involved weighting components of the OE model, operationalizing the model’s contents, creating an OE score, and collecting data against the model. The final data collection effort resulted in 77 responses across 25 projects. The average OE score for these projects was 42.9 out of a possible 66 points, corresponding to 65%. There is significant room for improvement for even the highest performing project (51.9, or 78%).

The RT-317 data collection effort generally shows that the higher the OE score achieved, the lower the safety incident rate (TRIR). Further, most projects saw a strong decline in awareness and implementation of safety programs from the corporate level to the site level. In other words,

people at the corporate level believe a certain program is in place and functioning; however, the craft professionals are either not aware of the program or do not believe it is well implemented on site.

Ultimately, the products from RT-317 gave CII member companies an opportunity to see whether they (and their employees from corporate down to the site) “do the right thing, the right way, every time – even when no one is watching.”

Introduction

Safety is, and must be, a priority for Construction Industry Institute (CII) member companies. This is evident by the strong safety results realized year after year in the annual Safety Report produced by CII. Members' average Total Recordable Incidence Rates (TRIR) well below 1.0 demonstrate the emphasis that CII companies place on safety. However, this does not mean there is no room for improvement. The TRIR for CII member companies appears to have improved at a diminished rate in recent years (see Figure 1).

In line with its goal of continuous improvement, CII tasked Research Team 317 (RT-317) to investigate whether the concept of Operational Excellence (OE) could provide the next thrust forward in safety performance. CII posed an essential question to the team:

“Can a sustainable step change in safety performance be achieved through an enhanced culture of rigorous operational discipline (later termed Operational Excellence), also known as performance excellence?”

To answer this essential question, the team envisioned research that would occur in two distinct projects:

1. Phase I of RT-317 developed a conceptual model for Operational Excellence for construction project safety and reported its findings in Research Summary 317-1 *Safety Performance through Operational Excellence – Phase I*, and Research Report 317-11, *Improving Site Safety Performance through Operational Excellence*. Once that model had been created, several critical steps remained to examine the relationship between Operational Excellence and safety performance.

2. Phase II of RT-317, described in this research summary, focused on the relationship between Operational Excellence and safety performance. The deliverables for this second effort also include a larger research report (RR317-12, *Improving Site Safety Performance through Operational Excellence, Phase II*).

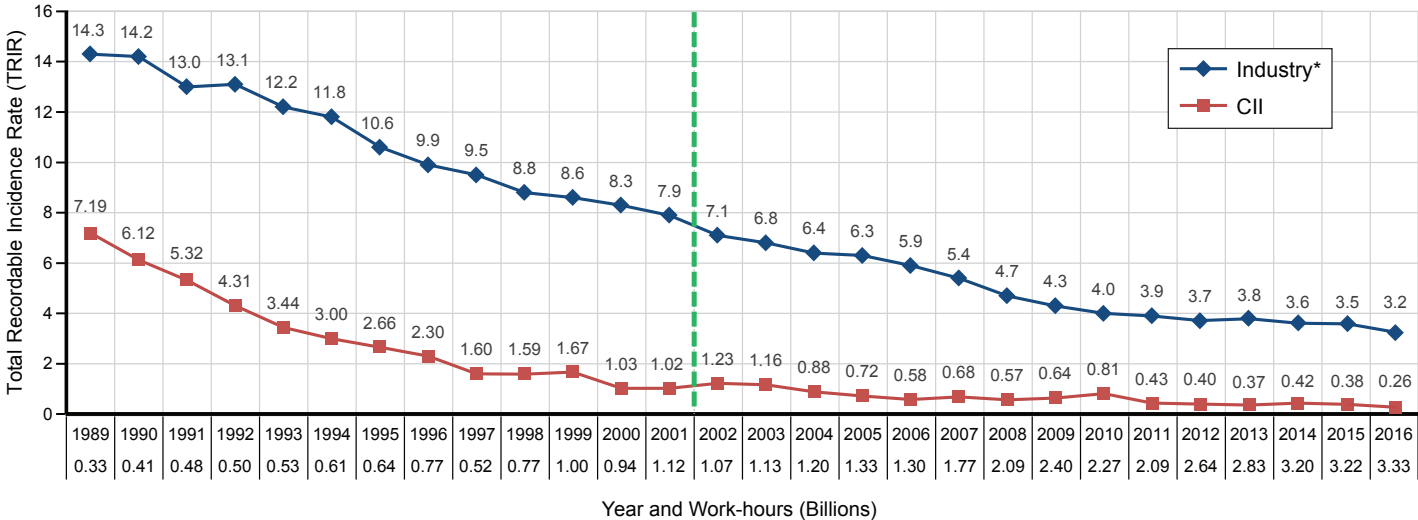
Operational Excellence

Operational Excellence has been defined in numerous ways, since its formal existence is relatively new and vague. Its origins can be traced back to the chemical process industry's efforts to improve process safety. In its origins, OE refers to the desired execution of day-to-day activities that all organization personnel carry out. From upper management to the craft professionals, all employees must be fully committed to the process and take responsibility for adhering to procedures.

The underlying theme in the many definitions is that the result of Operational Excellence is the predictable and correct execution of tasks. The precursors required to reach this result combine behavioral and cultural elements:

- A strong safety culture must be established, in order to drive behaviors.
- For this safety culture to persist, consistent behaviors must be expected.

In that sense, the foundation for RT-317's model of OE is that culture drives behavior and behavior sustains culture. Subsequently, RT-317 synthesized the various definitions of OE into one: "doing the right thing, the right way, every time – even when no one is watching." (For more on the definition and origins of OE, see RS317-1 and RR317-11 from Phase I of the RT-317 research.)



*OSHA Construction Division, NAICS 236–238 (SIC 15-17)

--- Reflects OSHA reporting change

Figure 1. Total Recordable Incidence Rate, CII Members vs. Industry