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PRRT™: Project Rework Reduction Tool

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PRRT™ - PROJECT REWORK REDUCTION TOOL

THE NEED

Rework, and particularly field rework, continues to be one of the most major sources of unplanned cost growth on industrial construction projects. According to CII (Construction Industry Institute) research, if field rework alone can be significantly reduced, or even eliminated, as much as 10% of overall project costs can be saved. The savings are expected to be substantially greater across an entire project having engineering and procurement.

Field rework is not caused solely by construction site activities in isolation. Far from it. In order for the field rework to be reduced, a substantial effort must be made to improve the effectiveness of the prior project phases with a view to preventing the all too frequent 'catch-up' during the site construction and commissioning phases.

To combat project-wide rework, the COAA has developed PRRT™ – Project Rework Reduction Tool. It is an innovative and interactive Project Management software tool for enhanced leadership, accountability and the implementation of proven Industry Best Practices for Industrial EPC Projects.

PRRT™ was designed to engage ALL project participants and stakeholders. Implemented as early as possible in a project's timeline, it promises to consistently improve the likelihood of project success through the elimination of rework at all phases in all of projects development. It can be applied to all Process Industry EPC projects, irrespective of size and location.

THE TECHNOLOGY

IDENTIFYING/ PREDICTING PROBLEMS

PRRT™ is an easy-to-use and practical software tool designed to assist project managers, their teams, and other stakeholders perform regular 'health checks' of their industrial projects.

Disasters in project execution can so often be averted early on by an honest evaluation and recognition that deficiencies exist in the design effort and project execution plan. PRRT™ makes this evaluation process easy.

PRRT™ employs easy-to-use questionnaires in five project phases to rate performance against known factors causing rework. The resultant ratings are interpreted within the

five COAA-defined Primary Rework Cause Sections, as given by the Rework Cause Classification Diagram (see Figure1).

FIGURE 1 COAA REWORK CAUSE CLASSIFICATION DIAGRAM

The phase evaluation or, rating exercise, derives a Project Rework Reduction Index, or PRRI, for each phase review. A sound project will have a high rating. Trending graphs are available to follow performance through the principal project phases.

PRRI's high-impact graphics comprise:

- PRRI Tile Chart (see Figure2)

FIGURE 2 PRRI TILE CHART FOR OVERVIEW OF THE RESULTS

- PRRI Dashboard Chart
- PRRI Dashboard Element (see Figure3)

FIGURE 3 PRRI DASHBOARD ELEMENT – TO PIN-POINT WHERE IMPROVEMENT IS NEEDED

- PRRI Priority Dashboard
- PRRI Trend Graph
- PRRI Detailed Trend Graph (see Figure4)

FIGURE 4 PRRI PROJECT TREND GRAPH

The 3 principal charts illustrated on the right are ideal for presentations and reports, having been crafted to focus attention where it's most needed. They can be readily copied into all MS applications. Scorecards are also made available to analyze the questions, responses and weighting.

PRRT™ saves the accumulating data from successive phase reviews in a single project file. There is no limit to the number of projects that can be managed with PRRT™.

SEARCHING FOR SOLUTIONS

Appreciation as to where deficiencies exist is but the first important step toward solutions. Once less-than-optimum performance is predicted in any of the Rework Cause Sections and subcategories, the user can proceed into the Definitions and Suggestions area of PRRT™, to seek practical solutions. Found there are extensive Ideas & Industry Best Practices that are the result of extensive experience contributed from the COAA membership as well as published sources, particularly The Construction Industries Institute (CII). Applied appropriately, these will lead to substantial improvements in future PRRI ratings and hence improved project execution performance.

Comprehensive Resource Documents also easy-to-use checklists and templates are available within this suggestions area.

BENEFITS

PRRT™ sets out to complement traditional and common project controls, and much more. It focuses on those 'softer' management issues that often go unnoticed or ignored until it's too late. Most project controls tools are reactive, but PRRT™ can predict and mitigate rework issues BEFORE they impact project schedule and the 'bottom line.' PRRT™ has been developed to address the simple premise that disasters in industrial project execution can be mitigated early on by honest detection, evaluation and mitigation of deficiencies in the design & project plans.

PRRT™ will aid veteran and inexperienced project teams alike, regardless of project size, though mega-projects may require more criteria due to their complexity. One of the tool's key attributes is the ability to benchmark projects during their development phases. PRRT™ can also be used to track a projects PRRI indices over time, as well as to undertake Project Performance Audits. Finally, the Definitions and Suggestions area is an essential training tool for project team members, whether owner, engineer or contractor.

Other important features of PRRT™ include a library and a bookshop, as well as a section with links to websites of global institutions and publications that offer additional specific resources, often for free. User friendliness of the software was a principal development criterion and comprehensive user instructions are provided.

STATUS

PRRT™ originates from an initiative of the Rework Reduction Subcommittee of the COAA, the Construction Owners Association of Alberta (<http://www.coaa.ab.ca>) COAA is already renowned in Canada for its highly successful initiatives in Industrial Safety and Workforce Development. PRRT™ has evolved over three years of unpaid COAA subcommittee volunteer work.

PRRT™, in its current form, has been made available for free to COAA members. Most of the 470 attendees of the COAA May 2003 Conference received a copy of the CD Rom. PRRT™ is also available for free web download, and there have been well over 1200 downloads to date. Currently, Suncor Energy Inc. and Colt Engineering Corporation are applying PRRT™ successfully on their major projects. SNC Lavalin and Petro-Canada, to name but two other major corporations, are in the throws of engaging PRRT™ to assist with their projects. Feedback from Suncor Energy and Colt has been extremely positive and gratifying.

With future development and commercialization, it is intended to develop PRRT™ into a world-class product by enhancing the software's' already well-developed features. PRRT™ may be readily crafted to suit the more specific needs of any other field of engineering construction: e.g. civil, commercial and offshore etc.

BARRIERS

Present PRRT™ is developed for the industrial construction projects. Even though there are many general categories applicable to other types of projects, it may not appropriate to use PRRT™ on every construction projects. In addition, the user who inputs data in this program and develops index for his/her own project is required to have experience and overall knowledge on the project since PRRT™ requests the user to provide subjective answers to several questions.

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REFERENCES

COAA (Construction Owners Association of Alberta) Web site <http://www.coaa.ab.ca> (Aug. 13, 2003)

[PRRT Software v2.0](#)

REVIEWERS

Peer reviewed as an emerging construction technology

DISCLAIMER

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PUBLISHER

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