Engaging contractors: Partnership approaches to improving safety in the power industry

ENGAGING CONTRACTORS:
PARTNERSHIP APPROACHES TO IMPROVING SAFETY IN THE POWER INDUSTRY

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This publication has been produced as a result of work carried out within the Technical Team of the EI, funded by the EI's Technical Partners. The EI's Technical Work Programme provides industry with cost-effective, value-adding knowledge on key current and future issues affecting those operating in the energy sector, both in the UK and internationally.

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FOREWORD

This publication was developed in response to demand from operators and contractors within the power generation sector, recognising that the safe and effective engagement of contractor resources represents a substantial responsibility for everyone in the industry.

The intent of this publication is not to comprehensively document all the relevant legislation and industrywide standard practices, but instead to focus on the greatest challenges whilst sharing existing or emerging good practice.

This second edition merges the good practices covered in the first edition (taken from workshop discussions and industry case studies) with the guidance covered in Energy Institute (EI) *Managing contractors: A guide for the energy industry*. As such, this guide supersedes both the 2014 edition, and *Managing contractors: A guide for the energy industry*, to provide a much more comprehensive guide on contractor engagement and management.

This publication provides guidance on how clients' companies can engage (manage and work with) contractors in a safe and effective way. While not specific to any national legislation, its structure is aligned with the UK's *The Construction (Design and Management) Regulations 2015* (CDM), which is the typical way construction-type projects (including outages) are conducted in the power sector. As such, it covers the main phases of a construction-type project, from contractor selection to construction and project hand-over. This second edition also includes new material on managing fatigue, ageing workforce, diverse workforces and travel, as well as new content on safety critical task analysis and collaborative contracting.

The EI welcomes feedback on its publications. Feedback or suggested revisions should be submitted to:

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Stuart King (Secretary)	Energy Institute
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Management of the project and technical editing was carried out by Stuart King.

1 INTRODUCTION

1.1 AIMS

National legislation sets out minimum standards for health and safety. Examples of such legislation include European Union *Directive 92/57/EEC – temporary or mobile construction sites*, the United Kingdom's Construction (Design and Management) Regulations 2015 and the United States Safety and Health Regulations for Construction.

While there may have been various changes to national legislation since the last edition of this guide was published (for example, updating of the United Kingdom's Construction (Design and Management) Regulations in 2015) it is not the intention of this publication to exhaustively update earlier guidance for changes to legislation. The approach adopted in this document differs in its focus.

The aim is to offer an *aide-mémoire* to competent practitioners generally familiar with the relevant legislation and their associated obligations. It seeks to distil the lessons that organisations (themselves generally competent, familiar and practised in their various obligations and responsibilities) have found to have worked particularly well and, occasionally, what singularly has not. The purpose is not to summarise or interpret legislation, but to share experience and insight about what actually works well among industry practitioners. Hence, it concentrates on exploring the key risk areas commonly experienced, and dives deeply into how organisations have sought to manage these risks most effectively.

The content is not intended to be implemented in its entirety, as more than one solution is provided in some cases and some contracting strategies will not support all of the options described. It is designed to demonstrate some of the good practices that have been applied within the sector and provide details of specific strategies that have added value.

1.2 SCOPE AND PURPOSE OF THIS PUBLICATION

The intent of this publication is not to comprehensively document all the relevant legislation and industry-wide standard practices, but instead to focus on the greatest challenges whilst sharing existing or emerging good practice. Workshop-based discussions between members of the Energy Institute's (EI's) then Power Utility Committee (PUC) and contractors (detailed in the first edition) highlighted the following priority areas where good practices are sought:

– safety leadership;
– addressing both occupational and process safety;
– working with subcontractors;
– competence assurance;
– management of change (MoC) and variation instructions;
– engagement and communications mechanisms, and
– key performance indicators (KPIs) and performance management.

This publication provides a risk-based view of good practice but does not seek to provide comprehensive end-to-end instruction. This publication focuses on outages, the associated contract works (and also service contracts), rather than major construction projects.

Other useful EI guidance includes:

– *Transient contractor and supply risk management and assurance during shutdowns, outages and turnarounds;*
– *Guidance on human factors safety critical task analysis;*
– *Managing fatigue using a fatigue risk management plan*, and
– *Approaches to managing and assuring contractor competence.*

1.3 INTENDED AUDIENCE

The intended users include power generation companies and the contractors that provide services and resources within the power generation sector. This guide applies to all forms of power generation, including renewable (biomass, hydro, wind, solar, geothermal), fossil fuels (gas, petroleum and coal) and nuclear. The guidance should be equally applicable for other sectors.

1.4 CONTRACTING LIFE CYCLE MODEL

1.4.1 Contract life cycle

Table 1 cites a selection of contract life cycle models relevant to engineering. Product development life cycles have not been included. The models have been categorised according to the activity they represent. Some models focus on contracting, some on construction and some on cross-cutting aspects of management, such as safety.

Table 1: Selected life cycles for construction, engineering and projects

Source	Stages	Comments
Managing contractors: A guide for the energy industry (2006)	Concept and feasibility Design and planning Tender and selection Construction Commissioning and hand-over	Construction life cycle
Campbell Institute: Best Practices in contractor management	Pre-qualification Pre-job task and risk assessment Contractor training and orientation Monitoring of the job Post-job evaluation	A contract life cycle model

Table 1: Selected life cycles for construction, engineering and projects (continued)

Source	Stages	Comments
International Association of Oil and Gas Producers (IOGP) *Health Safety and Environment (HSE) management – guidelines for working together in a contract environment*. Report 423, April 2017	Planning Sourcing/capability assessment Tender and award Pre-mobilisation Mobilisation Execution De-mobilisation Final evaluation and close out	A contract life cycle model
International Organization for Standardization (ISO)440001. The International Standard for Collaborative Business Relationships	Operational stages Stage 1 – Operational awareness Stage 2 – Knowledge Stage 3 – Internal assessment Stage 4 – Partner selection Stage 5 – Working together Stage 6 – Value creation Stage 7 – Staying together Stage 8 – Exit strategy activation performance and auditing	Management arrangements for collaborative working
The International Association for Contract and Commercial Management[1]	Evaluate Approve Draft Negotiate Implement Manage Close	A contract life cycle model
PRojects IN Controlled Environments (PRINCE2)[2]	Starting up a project Directing a project Controlling a stage Managing a stage boundary Closing a project	Generic project life cycle

1 https://www.iaccm.com/

2 https://www.prince2.com/uk/what-is-prince2

Table 1: Selected life cycles for construction, engineering and projects (continued)

Source	Stages	Comments
Royal Institute of British Architects (RIBA)[3]	0 – Strategic definition 1 – Preparation and brief 2 – Concept design 3 – Developed design 4 – Technical design 5 – Construction 6 – Hand-over and close out 7 – In use	Construction contract

In order to help organise the guidance in this publication, a single contracting life cycle has been adopted – this being based on the United Kingdom's Construction, Design, Management (CDM) model, the most recent version of which is captured in Figure 1. The remainder of this publication is organised with section headings corresponding to the different stages in the CDM life cycle model.

Safety should not become a paperwork exercise and that, while correct documentation is a necessary element, it is not by itself sufficient. Safety should be an engagement activity throughout the project and its participants.

3 https://architectureforlondon.com/news/the-riba-plan-of-work/

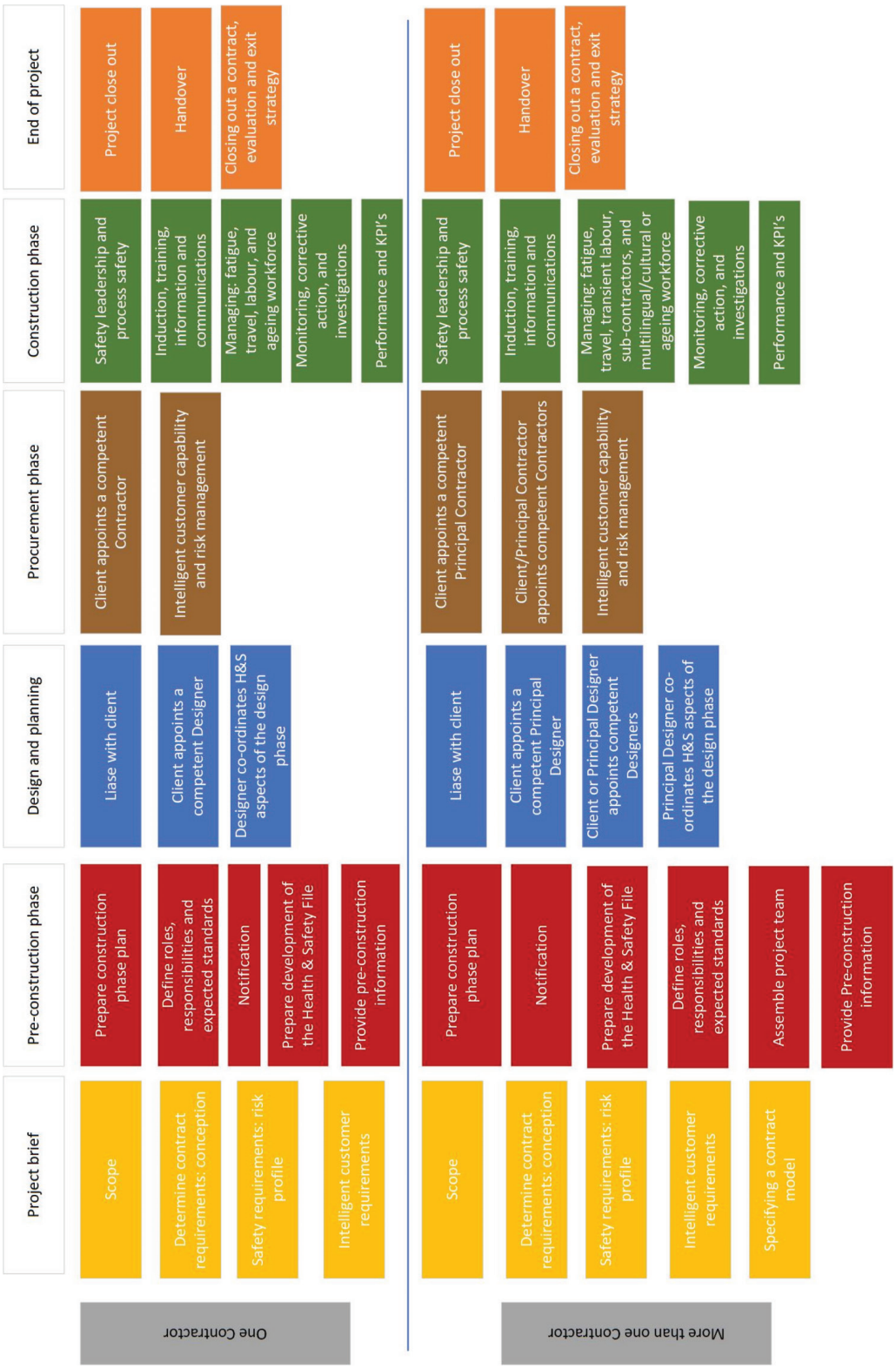

Figure 1: Main activities associated with each stage in the UK CDM:2015 project life cycle