

Project Production Control (PPC) Implementation for an Offshore Facilities Construction Project

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Abstract : Every key performance indicator used to monitor a project's construction progress emphasizes trade productivity or specific commodity run-down curves. Examples include the productivity of welding by the number of joints completed per day, quantity of NDT (Non-Destructive Tests) inspection per day, etc. This perspective is based on progress and productivity; however, it does not enable a system perspective of how we produce. This paper uses a project production system perspective by which projects are a collection of production systems comprising the interconnected network of processes and operations that represent all the work activities to execute a project from start to finish. Furthermore, it also uses the 5 Levels of production system optimization as a frame. The goal of the paper is to describe the application of Project Production Control (PPC) to control and improve the performance of several production processes associated with the fabrication and assembly of a Central Processing Platform (CPP) Jacket, part of an offshore mega project. More specifically, the fabrication and assembly of buoyancy tanks as they were identified as part of the critical path and required the highest demand for capacity. In total, seven buoyancy tanks were built, with a total estimated weight of 2,200 metric tons. These huge buoyancy tanks were designed to be reversed launching and self-upending of the jacket, easily retractable, and reusable for the next project, ensuring sustainability. Results showed that an effective application of PPC not only positively impacted construction progress and productivity but also exposed sources of detrimental variability as the focus of continuous improvement practices. This approach augmented conventional project management practices, and the results had a high impact on construction scheduling, planning, and control.

Keywords : offshore, construction, project management, sustainability

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