INTERGRAPH®

KEY BENEFITS:

- Out-of-the-box, user-friendly processes that can be rapidly deployed at low risk.

- Tight integration with the plant design basis in the SPO Core Solution, including cross-referencing between affected plant objects such as areas, systems, documentation, tags, and project execution objects such as changes, non-conformities, technical queries.

- Management reporting providing overall visibility, enabling proactive intervention and better decision-making.

- Automated and flexible workflows ensuring consistent adherence to project procedures and complete auditable traceability.

- The ability to link processes to each other. For example, a technical query arising from a site can result in a temporary or permanent non-conformity or a project change. The ability to link these project execution work processes provides complete control and auditable traceability of processes.

FUTURE RELEASES:

Additional project execution processes envisioned for future releases include:

- **Risk-reducing measures** – Identifying plant risks and measures to be taken to reduce risk "as low as reasonably possible"

- **Audit management** – Determining management reviews and follow-up of findings

- **Risk and opportunity management** – Identifying risks and opportunities

SMARTPLANT® ENTERPRISE FOR OWNER OPERATORS PROJECT EXECUTION SOLUTION

Managing projects to ensure delivery on schedule, to specification, and within budget is a major challenge for owner operators and project managing contractors (PMCs). The Intergraph® SmartPlant® Enterprise for Owner Operators (SPO) Project Execution Solution builds upon the SPO Core Solution and provides pre-configured processes supporting key work processes for successfully managing the execution of greenfield and brownfield projects. These processes include:

- Management of change

- Management of technical/site queries

- Management of nonconformities

- Interface control

Traditional methods of managing these processes through spreadsheets or electronic archive solutions do not give sufficient visibility or control of these critical processes.

MANAGEMENT OF CHANGE IN PROJECTS

Changes to the approved project design basis create the single greatest influence to project cost and schedule. Any major CAPEX project will be subject to thousands of changes and hundreds may be under consideration at any one time. The process of evaluating changes is complex, involving many technical and administrative stakeholders in the project, and the complexity is compounded by overlapping scopes between changes.

The SPO management of change process provides a unique level of change control within projects, and provides management with increased visibility. This includes the critical distinction between development within existing scope (commercial and design development) and changes to existing scope (commercial and design changes). The SPO management of change process ensures auditable traceability through the review, approval, and implementation cycle for changes using automated workflows to demonstrate Sarbanes-Oxley (SOX) compliance and adherence with owner operator project authorization matrices.

MANAGEMENT OF NON-CONFORMITIES

Non-conformities to relevant laws, regulations, corporate governing documents, and project specifications all need to be closely managed on projects. Traditional electronic archive or paper-based systems suffer from poor process management and reporting. The associated history of review and approvals can be difficult to find, especially during operations. When an incident does occur on a plant with such a system, it can take a long time to gather

the necessary information for the investigatory team and receive permission from the regulatory authorities to resume production.

The SPO non-conformity process is closely linked and integrated with other SPO project execution processes, such as technical queries or management of change, and demonstrates compliance with regulatory requirements for managing non-conformities. SPO provides a process to manage non-conformity requests from all parties and the granting of temporary and permanent waivers. The SPO non-conformity process provides auditable traceability of the process of reviewing and approving non-conformities and facilitates their linking to affected parts of the plant, such as area or system tag.

The SPO transfer of non-conformity information to operations includes plant areas, systems, tags, etc. which are affected. This helps prevent the occurrence of incidents by making non-conformities highly visible for operations, so steps can be taken such as increased inspection. Where incidents do occur, SPO reduces downtime impact on the plant and facilitates a quicker restart of production by enabling all documentation and information relating to the waiver process to be presented without delay, including a complete, auditable traceability of the process leading to the waiver.

MANAGEMENT OF TECHNICAL AND SITE QUERIES

On any major project, thousands of technical queries (including site queries) need to be addressed and answered within a tight schedule to avoid impacting project schedule and potential variation orders. Traditional paper-based or electronic archive-based solutions demand a high level of administration and manual effort between all of the parties involved in resolving queries.

The technical/site query process in SPO greatly simplifies the administration and processing of queries. Flexible, templated workflows and management reports ensure consistent handling and follow-up.

INTERFACE CONTROL

Interface control provides technical interface management between the owner operator or PMC and contractors and internally within the owner operator organization, such as between the project and corporate process owners or corporate service providers. A typical CAPEX project will have 20 to 100 separate interfaces that need to be managed, each with hundreds of interface issues that need to be resolved. The traditional use of Microsoft® Excel® spreadsheets is insufficient for managing the complexity of interfaces and reporting. SPO's templated process offers hierarchical structuring of interface needs. Management reporting highlights where interface issues are not being addressed as planned. This enables management to take remedial measures before consequences become serious. Interface issues and information needs can be linked to the affected parts of the plant. Tags, areas, systems, and more provide multiple access routes to interface information.

ABOUT INTERGRAPH

Intergraph is the leading global provider of engineering and geospatial software that enables customers to visualize complex data. Businesses and governments in more than 60 countries rely on Intergraph's industry-specific software to organize vast amounts of data into understandable visual representations and actionable intelligence. Intergraph's software and services empower customers to build and operate more efficient plants and ships, create intelligent maps, and protect critical infrastructure and millions of people around the world.

Intergraph operates through two divisions: Process, Power & Marine (PP&M) and Security, Government & Infrastructure (SG&I). Intergraph

PP&M provides enterprise engineering software for the design, construction, and operation of plants, ships, and offshore facilities. Intergraph SG&I provides geospatially powered solutions to the defense and intelligence, public safety and security, government, transportation, photogrammetry, utilities, and communications industries.

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