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Plant Asset Life Cycle Management Comes to Life

Reusing data increases the ROI value of modeling

■ By **Joe Morray**

I recently had the opportunity to chair the daratechPLANT 2009 conference. From that experience, I took away several new insights on the direction of our industry.

Topping the list is the preponderance of examples of how owners and EPCs are using plant data models for a wide range of business processes beyond design. It was truly exciting to see real-life project examples related to:

- Model data deployed for construction simulation and management
- Seamless delivery of information to work order management systems
- The merger of 3D models with laser point clouds
- The affirmation that ISO 15926 is “ready for prime time.”

For those of you who have followed our industry over the years, you know that one of the key elements for increasing the ROI value of modeling is the reuse of information for multiple plant phases. We are now seeing this long-pursued goal being fully achieved. Here are a few examples:

Construction

The use of models for construction is now a standard for many of our leading construction companies. The design models are multi-purposed to be able to handle a wide range of planning and reporting functions, including:

- Construction simulation
- Project controls
- Materials management and delivery
- Field tracking.

With the model serving as the “single source of truth,” critical functions such as just-in-time work packaging, crew level planning, work sequencing and material delivery are performed. The most visually intuitive application is the ability to map status and schedule onto a 3D model, which allows a person to rapidly flip between “plan” and



“actual.” No Gantt charts or PERT charts can provide this richness of information. Many years ago, my former boss, Don Hall, would walk out to a construction site with a few 4D schedule shots of the plant model and know immediately where he had schedule delays.

Design to operations and maintenance

Another element that we see widely used is the ability to easily migrate information from a design model to a structure and content that support operations and maintenance. Migration can populate many of the industry-standard work order management systems.

Manual migration (or even the recreation of information) can be a long and error-laden process. Modern tools and processes have resulted in a substantial improvement in schedule and cost in a variety of areas, such as the commissioning phase. One of our leading global EPC companies cites that data migration is no longer a step but a natural application of its design models. The data models allow the EPC to filter both the content and organization of the information.

Operations activities

I have previously written about the use of models, both 3D and schematic, for operations

activities. During daratechPLANT, my Trinity Technologies colleague Ed Anderson, formerly of Air Products, provided multiple examples of the 3D model being used for the mapping of operating procedures, creating and managing inspection circuits, as well as remarkable examples of the models being used to resolve maintenance issues. Again, the visual richness of a 3D model makes the conveyance of information, regardless of the activity, far more effective.

As an industry, we have now advanced to the point where “data for life” is a reality. It is imperative that EPCs and owners incorporate this important evolution into every project information plan. There is life after design!



Joe Morray is president of Trinity Technologies Corp., a process and power industries consulting firm that helps owner operators and EPC firms succeed in the use of information systems. The company specializes in driving companies to align work processes, technology and organizational change requirements for the plant environment.

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