

*North East Utility -
Nuclear Plant Improvement*

Context

In mid 2004, a major North East Pennsylvania utility which sells energy in key U.S. markets and delivers electricity to customers in Pennsylvania, the United Kingdom and Latin America, undertook a strategic initiative at one of its nuclear energy generation plants to reduce their nuclear refueling outage process from 45 plus days to 22; thus cutting the current outage cycle time by at least 50%. Approximately \$1 - \$3M per day can be realized for each day's reduction in the outage cycle, based on both cost reduction and revenue gain.

The Challenge

While the company had become very proficient at executing nuclear refueling outages, it was believed by their Chief Nuclear Officer (CNO) that an improved emphasis on planning and preparation activities would yield significant return. The goal of this engagement was to support the client in reducing the cycle time of a nuclear refueling outage to 22 elapsed days. This would be accomplished by an explicit and detailed definition and agreement of the outage preparation process, using the proprietary BusinessGenetics' business modeling language - xBML.

In addition, the longer term strategic planning elements were not defined, which resulted in work being incorrectly scoped and resulted in unnecessary execution steps during the actual refueling outage.

The Solution

A program director and his team of colleagues were appointed as Subject Matter Experts (SMEs) to work with the BusinessGenetics team to define and co-formulate the outage preparation process.

The team identified the business domains that they believed had the most potential to positively impact the overall goal of performing a nuclear refueling outage in 22 days. The eight Outage Preparation processes were: Strategy, Scoping, Emergent Work, Contingency Planning, Resourcing, Scheduling, Planning, and Access Processing. BusinessGenetics and the client's team defined five project phases for this initiative.

Project Co-Formulation[™] (***PCF***[™]) – BusinessGenetics utilized xBML to define the project which resulted in a model of all of the necessary project activities, deliverables, responsibilities, resource estimates and timelines to achieve the project purpose. This project planning model was then automatically converted into Microsoft Project from the xBML modeling software.

Document Co-Formulation[™] – BusinessGenetics xBML specialists used existing client documentation to co-formulate the initial set of xBML models (WHAT, WHO, WHEN, WHERE, WHICH and HOW). The DCF technique cut weeks out of the project effort and kept the SME interaction to an absolute minimum.

Hybrid (Current and Future) State Business Modeling – BusinessGenetics xBML specialists facilitated work-sessions with client Subject Matter Experts (SMEs) to validate the xBML models and gather related issues, metrics, and “quick” wins. SMEs identified 383 current and 156 future business activities for the Outage Preparation process.

Opportunity Analysis – By analyzing the xBML models, business issues, and future state business processes; BusinessGenetics xBML specialists produced a list of business improvement opportunities for the client. The client also visited two other nuclear energy providers to informally “benchmark” the defined outage preparation process.

Future State Business Modeling – Armed with this benchmark data and the xBML models, BusinessGenetics facilitated work-sessions with client SMEs to develop the new vision for their nuclear refueling outage, by explicitly defining the “desired” state for Outage Preparation.

Develop and Execute Solutions – SMEs subsequently implemented many business improvements in order to realize immediate ROI as well as consistent long term outage refueling ROI.

Subsequent steps of this project will entail leveraging the xBML desired state business models to auto-generate business requirements for IT, to support the automation of key areas of the business model.

The Result

Quick-win Result - Through the use of BusinessGenetics xBML methodology, a range of between \$3M - \$5.5M was realized as immediate Return on Consultant Investment. This equates to approximately 2,350% – 4,370% return on the client’s investment (NPV of 3 years).

Further, this Pennsylvania plant executed their refueling outage (1st Quarter - 2005) in 25 days. This was a 20 day reduction of effort from the 45 day outage in 2004. This equates to a minimum savings of \$20M to \$60M from their 2004 outage. The client attests that a huge part of this success was made possible through the work that was done utilizing the BusinessGenetics xBML methods, tools and consulting support.

Project Facts

The elapsed time of the xBML modeling effort was 38 days, and each SME contributed an average of 4 days to the effort. The client experienced the ability to accelerate and introduce rigor to the process itself, the process documentation and requirements definition. In addition, SMEs identified 221 desired state business requirements pertaining to Strategy and Planning. By

implementing the newly defined business activities, the client was able to significantly reduce the nuclear refueling outage business operation costs and accelerate revenues.

For more information please contact:

Donna Nichols ~ Donna.Nichols@BusinessGenetics.com

or

BusinessGenetics

9605 S. Kingston Court, Suite 290 • Englewood, Colorado • 80112

E-mail: info@BusinessGenetics.net • web: www.BusinessGenetics.net

Phone +1.720.266.1024 • fax +1.720.266.1030