

## Energy and utilities

# Candu Energy

Candu uses Teamcenter for PLM to design the life extension of its nuclear reactors

### Products

Teamcenter, Solid Edge

### Business challenges

Find the correct version of design data

Use multi-CAD data from partners and suppliers

Collaborate with partners and suppliers

Reduce design costs

Comply with regulatory requirements

### Keys to success

Implement the integration of Teamcenter for the applicable CAD product being used

Employ Teamcenter to effectively manage different CAD product designs and files

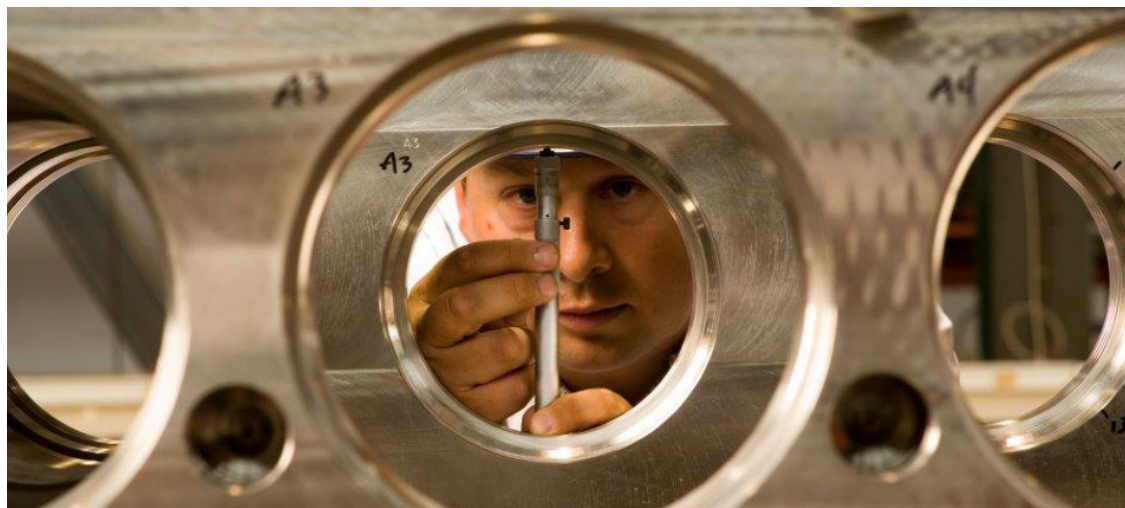
### Results

Reduced design costs by eliminating subassembly rework

Successfully created a single source for all design data

Established effective communications among suppliers and partners

Met regulatory requirements much faster



### Candu saves time and reduces costs by eliminating assembly rework in a multi-CAD environment

#### Canada's nuclear expert

Candu Energy Inc. is a member of the SNC-Lavalin Group. It acquired the commercial operations of Atomic Energy of Canada Ltd. (AECL) in 2011. The company is a leading, full-service nuclear technology company providing CANDU® nuclear power reactors and nuclear products and services to customers worldwide.

CANDU reactors are in service in Argentina, Romania, China, Korea and Canada. In Canada, CANDU reactors supply

approximately 50 percent of Ontario's electricity and 16 percent of Canada's overall electricity requirements. Candu not only delivers CANDU reactors, but they also provide plant life management programs and tools, and offer operation and maintenance services to existing nuclear power stations.

#### Life extension design with Solid Edge

Candu began its life extension design activities using Solid Edge® software from product lifecycle management (PLM) specialist Siemens PLM Software. CANDU reactors can operate economically and reliably for up to 60 years, with an outage at mid-life to replace fuel channels. This life extension outage allows for repair or replacement of other key reactor

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Geoff Morgan  
Chief Draftsperson  
Candu Energy



components to improve reliability and safety. Using the Insight™ design data management solution from Siemens PLM Software proved to be more than adequate until Candu started working with more suppliers and a partner, neither of which used Solid Edge for their designs.

#### **Multi-CAD package support**

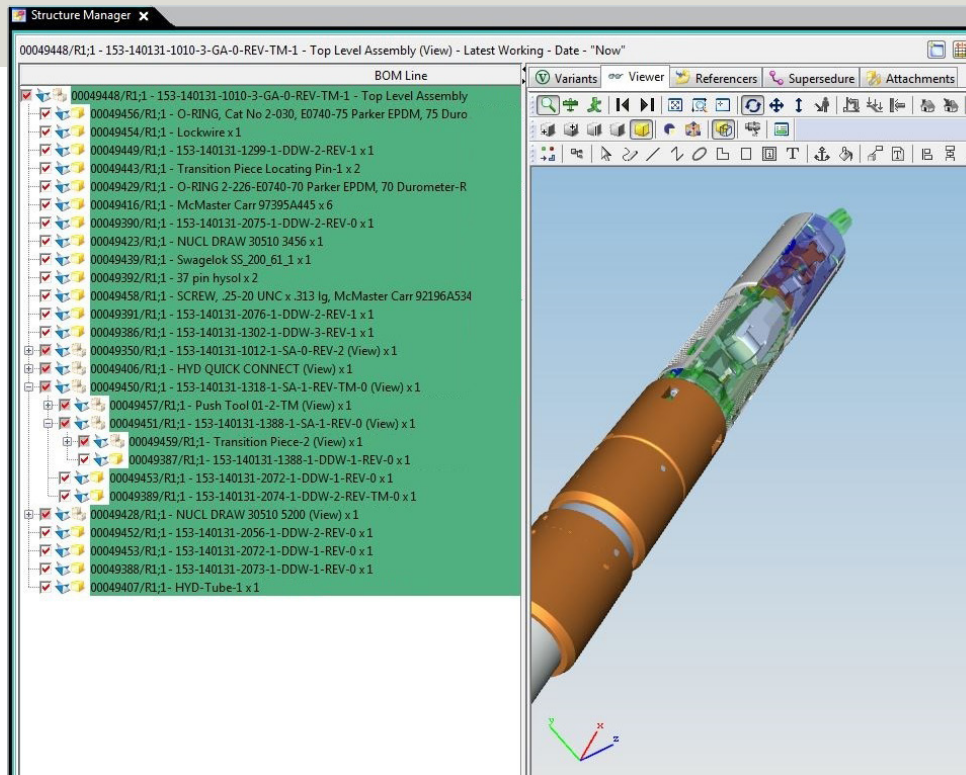
Candu’s engineers and designers soon realized that it was a multi-CAD (computer-aided design) world and their suppliers and partners used various CAD applications, not just Solid Edge. So Candu had to be able to support all the other CAD products. “Our vendors and partners use various CAD packages” says Eli Fayzenberg, computer-aided application specialist.

“You need to handle whatever makes sense for the business. That is why we decided to take advantage of Teamcenter, also from Siemens PLM Software, because of its ability to manage more than one CAD system on the same platform.”

Candu uses the Teamcenter® software integrations for Solid Edge and SolidWorks® software, which accounts for all of the CAD systems currently being used by its suppliers and partners. By using Teamcenter, Candu does not have to worry about which CAD product a supplier or partner is using; all that is necessary is to obtain the Teamcenter integration for the particular CAD application being used.

“We need to put all the design components together and make sure they all work together. We, as the integrator, are responsible at the end for the entire content, and Teamcenter enables us to do that with confidence.”

Eli Fayzenberg  
Computer-Aided Application Specialist  
Candu Energy



“Teamcenter allowed the vendors to design better in the context of the overall 3D model. Now, when they do their design, we can share enough of our design with them to ensure the designs will work together properly.”

“Teamcenter allowed us to do visualization and the JT technology enabled our engineers to perform basic tasks without using a full CAD license.”

Eli Fayzenberg  
Computer-Aided Application  
Specialist  
Candu Energy

### Finding and sharing design data – an important consideration

Another major motivation for selecting Teamcenter was configuration control. Candu had an efficient in-house file management system to control all of its documents. What the company needed was a similar system that would manage its CAD design files. Fayzenberg explains, “We wanted to be able to go to one vault and retrieve the official ‘one-and-only’ file for a particular design. For Solid Edge, we used Siemens PLM Software’s Insight solution, which utilizes Microsoft SharePoint technology. But as we were introduced to SolidWorks files, we needed something more sophisticated than design team-based PDM to handle multiple CAD design files. So configuration control is another major reason why we chose Teamcenter.”

### Collaborating with suppliers and partners

Candu sometimes chooses to subcontract part of its designs to any of its vendors and partners who contribute to the overall mechanical design for life extension projects. Teamcenter helps Candu and its design vendors to collaborate and design with understanding of the context of each component. This helps eliminate potential interferences in the integration of the tools. “Teamcenter allowed the vendors to design better in the context of the overall 3D model,” says Fayzenberg. “Now, when they do their design, we can share enough of our design with them to ensure the designs will work together properly.”

Fayzenberg notes, “We need to put all the design components together and make sure they all work together. We, as the integrator, are responsible at the end for the entire content, and Teamcenter enables us to do that with confidence.”

## Solutions/Services

Teamcenter

[www.siemens.com/teamcenter](http://www.siemens.com/teamcenter)

Teamcenter Integration for SolidWorks

JT data format

[www.siemens.com/plm/open](http://www.siemens.com/plm/open)

Solid Edge

[www.siemens.com/solidedge](http://www.siemens.com/solidedge)

Insight

[www.siemens.com/solidedge](http://www.siemens.com/solidedge)

## Customer's primary business

Candu is a leading, full-service nuclear technology company providing nuclear power reactors and nuclear products and services to customers worldwide. Candu's highly skilled employees design and deliver state-of-the-art CANDU reactors; carry out life extension projects; and provide operations, maintenance and plant life management services for existing nuclear power stations.

[www.candu.com](http://www.candu.com)

## Customer location

Mississauga, Ontario  
Canada

## Reducing design costs

Candu also wanted to reduce its design costs. The engineers do the conceptual designs and then pass them on to the CAD designer. "During the design process, we used to need full Solid Edge and SolidWorks licenses to allow engineers to do basic operations like sectioning or taking measurements," says Fayzenberg. "Teamcenter allowed us to do visualization and the JT technology enabled our engineers to perform basic tasks without using a full CAD license."

## Quickly meeting design and regulatory requirements

Candu also uses Teamcenter to manage design requirements. For Candu, complying with Canadian Nuclear Safety Commission (CNSC) regulations is critical and consistency of data is paramount. For example, if a parameter for the water temperature needs to be a specific degree, it needs to be that degree throughout all the design documents. Teamcenter enables the requirement to be set one time and then propagated throughout all of the design documentation. Being able

to set the requirement one time has dramatically reduced the costs associated with the time spent on design rework.

## Project success

Candu recently completed a life extension project using Teamcenter and SolidWorks. This project will be used as the foundation for future projects and as the baseline for improvements going forward. "Teamcenter provided a controlled and managed data-centric 3D and 2D environment," says Geoff Morgan, chief draftsman at Candu. "This allowed live collaboration during design reviews with other joint venture members and gave view access to the Candu manufacturing workgroups."

Candu has already started using Teamcenter for the preliminary design of its future projects. Fayzenberg explains, "We look at our experience with the first project with Teamcenter as a success and plan to use it in the next two projects." In addition, Candu is in the process of migrating its Tooling and Services design group to Teamcenter.

**"...we needed something to handle multiple CAD designs. So configuration control was another major reason why we chose Teamcenter."**

Eli Fayzenberg

Computer-Aided Application Specialist  
Candu Energy

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[www.siemens.com/plm](http://www.siemens.com/plm)

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