

# Staying off the hot list is COOL

DGC teams work to meet efficiency goals

By Kathi Risch



---

**Editor's note: This is the second of two articles exploring efficiency efforts at the Synfuels Plant aimed at helping reach their \$5/dekatherm cost-of-production goal.**

---

In some circles it might be a compliment to be on a “hot list,” but you don’t want to be on the hot list at Dakota Gasification Company’s (DGC) Great Plains Synfuels Plant. If your product is on the hot list, your area is not living up to the performance target that your area helped set.

So staying off the hot list is a cool way to help the Synfuels Plant meet efficiency and production goals, all part of a continued effort to reach the \$5-per-dekatherm cost-of-production goal aimed at the facility’s long-term sustainable operation.



Steve Pouliot

Steve Pouliot, Synfuels Plant process operations manager, says, “After the DGC maintenance area went through efficiency improvement efforts

to help meet the \$5-per-dekatherm goal, we started to talk about the next major area of concentration for efficiency improvement efforts. Three of the largest expenditures are labor, the coal feedstock, and energy consumption.”

Pouliot says they hired a consultant, Renoir, to do an analysis in June 2008 that focused on energy reduction, but also included other areas involving the operation of the plant. The resulting Efficiency Improvement Program Phase I identified several improvements that could be made, and the process operations and technical services areas, among others, joined forces to make those improvements. In addition to a joint DGC-Renoir project task force, Action Teams were also formed to make improvements in several areas, including energy, operations, maintenance, engineering, and training. Some of these teams will continue to exist to solve problems in the future.

A new management control system for operations was installed in October 2008 to track and measure goals, called key performance indicators. Short interval controls were also installed to make sure they are monitoring those key performance indicators frequently and reporting variances. Pouliot says it helps identify why goals aren’t being met and how to get back on track.

For example, Pouliot says in coal handling they set the goal to have the coal bunkers going to the gasifiers to be at least 50 percent full. “If coal levels drift too low and you have an unexpected belt problem, we may have to cut plant rates before the belts are running again. With consistent

operation at a high level, there were several instances in the first few months where we didn’t have to cut plant rates like we had in the past.”

He says there are several examples of measurements that show the success of the program. One, called the hot list, is issued every day. It’s their product specification and internal quality control on certain products. If production is out of normal limits, that product makes the hot list: something to watch and correct. “After we implemented targets and variance reporting, the amount of things on the hot list went down substantially.”

Pouliot says the short interval controls encourage corrective action right away. “Operators are diligent in trying to operate as efficiently as they can,” he says, “but let’s say cresylic acid production starts falling off slowly over a couple of weeks. If you didn’t have specific targets, product recovery may drift off and you might not notice it for several weeks, instead of dealing with it right now.”

Pouliot says operators and supervisors are now accountable for meeting targets rather than just the superintendent. He says this enables area management to look more to the future.

Pouliot says they’ve seen tremendous improvements in efficiency and consistency, and a reduction in their use of steam and electricity.

## What's the Hype all about?



Claudia Miller

services manager, says her department was involved in developing a system to handle the work orders more efficiently.



Mike Just

IMT, an idea management software, was a part of that.

Miller led the internal team that developed Hype. Team members included staff from marketing, operations, reliability, plant engineering, process engineering, and Information Systems Technology. Miller says the team found Hype IMT and configured it to match the way DGC does business and align with the engineering work order management system the MAT was developing.

"As long as I have been at the plant, people have been encouraged to bring up ideas they have, bounce them off the engineers, their bosses, their superintendents," Just says. "Gary Loop (DGC's chief operating officer) wanted to capture all of these ideas and evaluate them. This gives people a more open forum to present these ideas, specifically ideas on cost reduction and efficiency improvements."

Just says anyone in the plant can submit an idea to the system; the idea then goes to one of the superintendents. "Those individuals are responsible

Phase I of the Efficiency Improvement Program also included managing engineering work orders. Claudia Miller, Synfuels Plant technical

Mike Just, Synfuels Plant supervisor, process engineering, was the chairman of the Management Action Team (MAT) that did work order management. Hype

for either accepting or rejecting the idea, and they don't do that in a vacuum. They look at it and then they can send the ideas out like a forum discussion on the Internet."

Just says a big plus of the tool is not just idea management, but communication. "A lot of times an idea was looked at, but it often was deemed not worthwhile, too expensive, not feasible, but that was not getting back to the people who actually had the idea," he says. "If it was rejected, they can see why, since the superintendent has to input a good reason into the system."

Once an idea is accepted, he says it is prioritized as a project for engineering according to the type of project it is: safety, reliability or revenue generating. Overall ratings on factors such as severity, probability, ease of control, or environmental impact tell the superintendent how quickly he or she needs to respond. Safety ideas that could prevent severe consequences and have a high probability of occurring are taken care of right away. Ideas that promote high reliability or prevent the plant from shutting down also have a very high priority. Revenue generating projects include cost reduction or efficiency improvements.

All employees were trained by Miller, Chris Wilmes, Synfuels Plant business application developer, or Todd Schock, Synfuels Plant superintendent, steam generation/air separation, on how to use the Hype system. The software can be found on Inside Basin (the Intranet) under Software Applications.

Implementation began in 2009. So far 833 unique ideas have been submitted, and they are broken down by area.

Because the superintendents see everything from the very beginning, Miller says, it streamlines the process. She explains they previously had an approval process for new projects, and they knew it wasn't working well. "We recognized we needed to prioritize, but we didn't go about the implementation in quite the right way," she says. "I think having an outside entity (Renoir) come in and give it an outside look helped us develop that methodology."

Miller says part of the Renoir culture change was accountability. Previously it took four managers to approve an engineering work order—the operations manager, maintenance manager, tech services manager and plant engineering manager. "We were this huge bottleneck," Miller says. "I think you have to ask, 'What's the value added? If there isn't much value, do you really need that step?'"

Bob Fagerstrom, Synfuels Plant manager, says from an overall perspective, the efficiency efforts at DGC are an attitude of accountability. "That's the driving force for all of this, setting targets, doing what you need to do meet those targets, and holding people

"This gives people a more open forum to present these ideas, specifically ideas on cost reduction and efficiency improvements."

Mike Just, Synfuels Plant

accountable for what they are supposed to be doing."

As for the hot list, Fagerstrom says it typically

was a page and a half, now it's less than half a page. "That tells me everyone is watching their p's and q's and paying attention to what they are doing. It's just making sure everyone is communicating what the targets are and what those targets are for."