



Case Study **September 2009**

Building Skills for a Safe Workplace Competency Management at Keyera Energy

NAME OF PROGRAM

Competency Management and Development System (CMDS)

DATE ESTABLISHED

1999

SKILLS DEVELOPED

Reading	Computer Literacy
Writing	Communication
Document Use	

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OVERVIEW

As one of Canada's largest natural gas midstream companies, Keyera Energy provides services and products to oil and gas producers in Western Canada, and markets related products throughout North America. Keyera's three business lines consist of "natural gas gathering and processing; the processing, transportation, and storage of natural gas liquids (NGLs); and the marketing of NGLs and crude oil."¹ The company owns 16 large gas processing plants and extensive gathering pipeline systems with broad capture areas. Its five NGL processing plants in and around Edmonton and Fort Saskatchewan, Alberta—together with pipelines, terminals, transportation, and storage facilities—supply services to the NGL and oil sands markets.

¹ www.keyera.com.

President and CEO Jim Bertram defines Keyera’s key assets as “people, plants, and pipelines.” A quality workforce has been an important factor in the company’s long history of safe, reliable, and environmentally responsible operations. The sour gas processed by the company is toxic and corrosive, which presents unique technical challenges and a risk to personal safety and the environment.

To provide a safe and healthy work environment, Keyera undertook to develop the Competency Management and Development System (CMDS), which ensures that workers understand their job requirements and maintain a continuous and credible record of achieved skills. This online system is designed to be competency-based, skill-profile oriented, and third-party audited to comply with the requirements of due diligence. While the focus of the CMDS is industrial training, it also addresses such essential skills as reading and writing, computer literacy, interpersonal relations, and teamwork capabilities. The passage of federal Bill C-45 in March 2004, establishing new legal responsibilities for workplace health and safety, further underscored the important role of the CMDS in maintaining a well-trained and competent workforce. Keyera has built a system that not only meets its specific needs, but has also received industry-wide recognition and is currently used by 38 energy companies, which form the CMDS user consortium.

OBJECTIVES

The objectives of the Competency Management and Development System are to:

- ♦ provide a safe and healthy work environment for oil and gas industry workers;
- ♦ develop a well-trained and competent workforce capable of making independent decisions in response to different work situations;
- ♦ create and maintain a general framework for measuring, verifying, and tracking employee competencies; and
- ♦ provide “just-in-time” training for employees in need of upgrading their competencies.

TARGET GROUPS

The CMDS was initially developed for field operators, gas plant operators, and pipeline operators. However, it was later expanded to include the majority of field jobs and some office positions—including maintenance, electrical, and instrumentation workers, office administrators, safety leaders, and database managers—at Keyera and participating companies. Each user company determines by category which of its employees are required to use the system for assessing and developing their competencies.

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ACTIVITIES

Competency Management and Competency Development are two interconnected components of the CMDS. The Competency Management component uses online tools to assess, store, and manage information on workers’ knowledge, skills, and experience. The Keyera CMDS team has developed an online database of 19 occupational profiles, each containing a list of competencies required of workers employed in these occupations. Some of the positions for which profiles have been developed include field operator, steam gas plant operator, oil and gas measurement specialist, in-service pressure vessel inspector, pipeline construction supervisor, facilities construction supervisor, safety leader, and emergency response planner. Additional job profiles are forthcoming. CMDS consortium member companies can also request customized occupational profiles, which may include competencies not used by other members.

Along with technical competencies, all Keyera occupational profiles include essential skills, or “core competencies,” such as reading and writing, computer literacy, document use, ability to work as part of a team, problem solving, and others. The system contains detailed descrip-

tions of theoretical knowledge and practical tasks related to each competency. Safety-related competencies are a major part of each occupational profile. Competencies defined as “critical” are time-sensitive and are assigned an expiry date. Shortly before the expiry, the system notifies the worker and the supervisor so that reassessment and training can be planned.

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New Keyera employees are assigned an occupational profile matching their position. They can then log in to the CMDS database at www.keyeracmds.com from any Internet-enabled computer to perform a self-assessment of their competencies. The process involves an examination of one’s knowledge, skills, and experience to determine whether one can independently perform the required job tasks. The self-assessment results are stored in the system until validated by a supervisor or third-party expert, who will either acknowledge competency or recommend training. The validation is conducted through individual meetings between the worker and the assessor. During these meetings, the worker is asked to demonstrate the knowledge of theory and practical tasks required for the position. Depending on the job profile, employees may also be required to submit proof of certification—such as a First Aid certificate or Workplace Hazardous Materials Information System (WHMIS) certificate—as part of the validation process. It may take an employee up to four years to obtain validation of all required competencies.

Supervisors and third-party experts performing validations must be certified by Keyera Energy, which acts as the industry’s validating agent on behalf of the Canadian Technology Human Resources Board (CTHRB). Expertise in an area is determined by the assessor’s successful completion of the CTHR B self-assessment and validation process, including a two-day workshop.

The Competency Development component of the system includes a number of tools and resources designed to provide training and self-learning opportunities for employees who need to upgrade their competencies before they can complete the self-assessment and validation process. One of the most commonly practiced methods of developing competency is on-the-job mentorship provided either by a supervisor or an assigned subject matter expert. Keyera also supplies each CMDS user with a copy of a compact disc that contains an extensive knowledge repository pertaining to the industry in general and to specific occupations. Employees are advised to consult the CD (which is updated on a regular basis) as a first step in improving their competency level. Along with technical information, the CD contains resources to help employees upgrade their essential skills, including a writing guide, form samples, and completion instructions. When classroom training is considered necessary or appropriate, the company provides for employees to participate in one of the several half- to five-day courses offered by Enform, an industry-funded training and safety organization and the recognized petroleum safety association for Alberta, British Columbia, and Saskatchewan. In some cases, employees may be required to take courses through Lakeland College or another local post-secondary institution.

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CMDS users also have access to several e-learning tools available from the system’s website. The company offers over 40 online learning modules in areas such as safety and environment, rotary equipment, facility maintenance, plant/field processes, and instrumentation. Each module contains a quiz that trainees must successfully complete to earn a pass mark in the module. Keyera is currently working to develop a new e-learning system that will include online instruction based on real-time interaction between instructors and trainees.

RESOURCES

The CMDS is funded jointly by Keyera and other participating companies through user fees that help maintain and develop the system. The CMDS support team consists of 22 people, including managers, training coordinators, validators, and instructors, based mostly at Keyera's head office in Calgary. Employees who use the system to assess and validate their competencies do so during work hours and are fully compensated by the company for their time. Keyera also pays its employees for the time spent attending courses offered by Enform, and it covers tuition fees for those employees who are required to take college courses to complete the CMDS requirements. Validator training workshops, taught by Keyera instructors, are held at locations that are convenient to the participants.

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INNOVATIONS

Keyera has led the energy industry in creating a training system that is both innovative and efficient. The CMDS is unique in that it focuses training content on the specific skills and competencies the workers need to upgrade, rather than enrolling workers in a general training program. The system is also designed to have “just-in-time” availability, thanks primarily to its e-learning resources. The majority of workers who use the CMDS are field operators, gas plant operators, and pipeline operators located in remote sites where safe work practices are particularly essential. Most of these field workers have no access to conventional courses and training programs. The compact disc and Internet-based tools provide them with an opportunity to address their training needs whenever and wherever necessary. While Keyera still recognizes the importance of the instructor and traditional training methods, the company has realized that the development of communications technology in recent years has made e-learning solutions not only possible, but also practical and cost-efficient.

Unlike most corporate training programs, the CMDS ensures the portability of employee skills among companies that use the system. When workers change employers, their competency record is transferred to their new workplace, eliminating the need for reassessment and retraining. In cases where the new employer is not a member of the CMDS consortium, the competency record is archived in the system and can be reactivated if the worker returns to a CMDS user company.

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After completing the required competencies, participants in the CMDS can obtain a technical certificate that deems their learning equivalent to one year of full-time study at a college. For many senior workers with years of on-the-job experience but no post-secondary education, this provides a unique opportunity to have their credentials formally recognized. At present, there are 13 industry occupations in which Keyera employees can be certified, with more in development. Keyera has also partnered with Lakeland College to create a Petroleum Management diploma program, which has been recently approved by Alberta's Ministry of Advanced Education and Technology. The program targets employees wishing to upgrade their education without leaving the workplace and recognizes the CMDS as a valid measurement of prior training.

CHALLENGES

Since its introduction in 1999, the system has performed remarkably well, although technical management remains an ongoing challenge. There is some concern among the CMDS team members that the system has become too “multi-layered” and complex to navigate. Furthermore, with the increasing number of online users and continuous progress in communications technology, the software that currently supports the CMDS database has revealed its limited capacity, particularly in view of the planned move toward interactive e-learning. Occasionally, the team has also run into difficulty recruiting the support of

senior field workers who do not see the value of formal competency recognition and view the self-assessment and validation process as an unnecessary distraction.

The main challenge for the Keyera CMDS team, however, is the changing nature of the industry's workforce. Most of the employees who had been with the consortium companies for many years required little training in the practical aspects of work to get their competencies validated. By contrast, the younger and newer workers—who are now replacing the older cohort—come to the industry with more formal education and better-developed essential skills, but often lack practical work experience. This means that more resources will have to be allocated to competency development, particularly the upgrading of workers' practical skills (e.g., safe work practices, handling of equipment and instruments, etc.).

SOLUTIONS

Keyera is currently planning a major move to a new software platform to address the growing complexity of the system and the increasing number of users. The company has also worked diligently with various groups of employees to explain to them the benefits of the CMDS—particularly the program's positive effect on workplace safety in remote industrial sites. As a result, the system is now accepted as an integral part of working at Keyera, and many senior employees have benefited from the recognition—in the form of Lakeland College certificates acquired through the CMDS system—of their on-the-job experience.

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The CMDS team has identified the development of new learning tools as a top priority for the near future. The new interactive e-learning resources that will be phased in by late 2009 are expected to expand the training capacity of the system and enable new workers to learn the practical skills they may be lacking. Keyera is also continuing

with its commitment to the use of workplace mentorship as a way for new employees to upgrade their knowledge of the plant floor operations and their technical skills.

OUTCOMES

The implementation of the CMDS has allowed Keyera to maintain a solid record on workplace safety and health. The most important outcomes include the following:

- ◆ Safe work practices are viewed as a top priority by all employees.
- ◆ New employees can acquire essential and technical competencies in a faster and more systematic way.
- ◆ Communication and problem-solving skills have improved in field operator teams.
- ◆ Employees feel there is a corporate commitment to their safety and well-being.
- ◆ The system empowers workers to pursue career growth and educational opportunities.
- ◆ Workers without formal training credentials can achieve recognition of their competencies.

IMPACTS AND BENEFITS

The greatest accomplishment of the CMDS has been a competent and well-trained workforce, which resulted in steady productivity growth and safe company operation. The following are some of the specific impacts and benefits of the system:

- ◆ A comfortable work environment has been created in which lack of competency is not stigmatized but rather serves as an incentive for learning.
- ◆ The company can maintain a continuous record of employee skills and training.
- ◆ Several CMDS user companies have gone a full year without a workplace incident.
- ◆ The system facilitates labour mobility by providing easier transfer and recognition of skills within the industry.
- ◆ Training received through the CMDS in 13 oil and gas industry occupations is recognized as equivalent to a college certificate.

USE AS A MODEL

Although the original intent of the CMDS was not to invent a new model for training in the oil and gas sector, it has since been accepted by 38 petroleum and gas companies. These companies have workforces ranging in size from as small as six employees to as large as 900 employees, and they include some multinational corporations.

Much of the system's appeal has to do with its ability to "go to the field" thanks to its Internet and e-learning capabilities. Another reason is the self-assessment and validation process, which values employee input and ties experiential training to a national validating agency (Keyera Energy). Last but not least, the system recognizes both on-the-job experience and formal education in a way that is not cumbersome or limited to traditional

methods of evaluation, such as transcripts, conventional exams, and letters of reference. Ultimately the discretion that the company invests with its supervisors is the deciding factor in determining the competency of the worker.

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There is great potential for the CMDS to be used as a model for assessing and developing employee skills and competencies in other industry sectors. However, that would greatly depend on the availability of an "industry champion"—a large employer or learning partner with sufficient resources to take the lead in developing industry-specific occupational profiles and training tools.

About the Organizational Effectiveness and Learning Case Studies

The Organizational Effectiveness and Learning case studies examine outstanding education and lifelong learning programs and initiatives. This case study addresses the impact of workplace literacy and essential skills on employee safety and health.

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by *Vadim Kukushkin*

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