



RAE ENGINEERING
TOTAL ASSET
INTEGRITY
MANAGEMENT

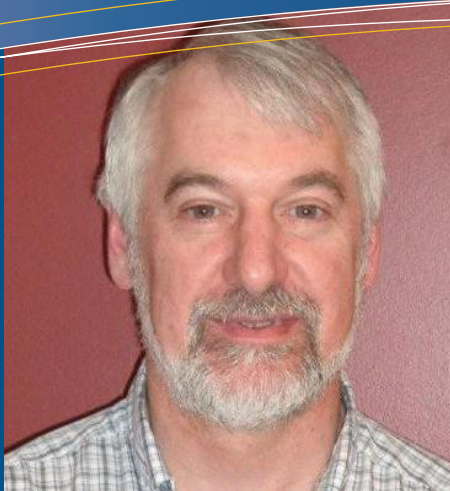
RAENews

RAE IN THE COMMUNITY

Last month, employees raised nearly \$1,000 for the Canadian Cystic Fibrosis Foundation's 5th Annual Great Strides Walk. RAE Engineering matched the amount raised by employees, so together we gave \$2,000 to a great cause. Out walking the walk on May 31st was Hennie Prinsloo from our head office and Perry Richard from our materials lab. Special thanks go out to Perry, who spearheaded RAE's fundraising efforts.

RAE IN THE NEWS

In March, RAE Engineering was featured in *Exploration + Processing*, a magazine published out of Chicago. The first article (<http://www.exploration-processing.com/content/view/801/>) is a good introduction to the company, while the second article (<http://www.exploration-processing.com/content/view/812/>) explains our and other Alberta companies' strategies for dealing with the current economic situation.



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President's Message

Welcome to the first edition of our new company newsletter. RAE Engineering and Inspection has been undergoing exciting changes in the past year. We opened a new office in Calgary, and we've been experiencing a period of sustained growth despite the financial uncertainty we read about in the news almost daily. The purpose of this quarterly letter is to help us stay in touch with you, our clients. We want to share the company's milestones with you as we achieve them, because our clients are our partners in the enterprise of total asset integrity management. We work with you to come up with solutions to the challenges inherent in managing assets safely, reliably, and efficiently. We all know that profitability is a function of safety, reliability, and maintainability. RAE Engineering wants to support clients in achieving this.

At the beginning of something new, it is always interesting to look back to see how far one has come. RAE Engineering's story begins in 1972 with Ralph A. Eagan. After starting out as a coatings inspection firm, some ownership changes helped the company expand its scope of capabilities. In 1979, Bob Tatz took over from Ralph, and in 1990, Elizabeth Menges, Bob's daughter, bought shares from him. Hennie Prinsloo joined the company as an employee in 1989 and bought shares in 1991. In 1994, Bob retired and Elizabeth and Hennie took over the company. Hennie is celebrating 20 years

with RAE Engineering this year. When Hennie joined the company in 1989, it had three staff members and one full-time contractor. These days, we have over 50 full-time staff members and more than 10 contractors.

Now in its fourth generation of ownership, the company has a combined staff industry man-hour experience totalling over 450 years. RAE Engineering continues providing reliable and safe equipment integrity solutions for its clients. Some things may have changed over the past 37 years, but the values our company was founded on remain the same. We still provide a top quality professional service. We still treat our clients with courtesy, honesty, and respect. We create a challenging and satisfying work environment for our personnel and treat them with respect and recognition of their skills, abilities, and work ethic. Most importantly, we still believe each client is the most important client we have.

I hope you enjoy hearing from us every three months. As always, we look forward to hearing from you. Have a great summer.

Izak Roux, M.Eng. P. Eng

President and Technical Manager

INSPECTIONS

RAE Engineering keeps growing rapidly in this area, and we are continuously hiring new senior, junior, and trainee API (American Petroleum Institute) inspectors. We are also sending the coatings lab and materials lab more work than ever, and our inspection equipment inventories have increased dramatically in the last year to accommodate the growing number of inspectors who require this equipment for their regular inspection duties.

We have implemented new inspection planning software, which is streamlining operations to accommodate the hectic inspection schedule. Also helping the inspections team keep up is the company's constantly improving training and mentorship programs for inspection and engineering trainees.

Finally, RAE Engineering purchased another company truck recently. That makes 3 in our fleet of Honda Ridgelines. Our vehicles are different from the average work truck, and this has caught the attention of many (we like to think envious) eyes!

MATERIALS LAB

Since our relocation approximately 10 months ago, we have enjoyed the space and freedom of a larger lab. We quickly utilized the extra space with larger investigations, and we are expanding in both our capabilities and personnel. New equipment and returning summer students are keeping us moving steadily forward.

Over the last few months, lab personnel has forged a good relationship between RAE and a local machine shop, which has helped us increase our capabilities and handle some of our bigger jobs. Our focus remains finding the right solution for the problem. As always, the wide range of experience and knowledge throughout the company helps us provide the answers our clients need.

Integrity Engineering

What is Integrity Engineering Anyway?

The short answer: it is the practice of engineering related to the safe operation, as well as structural integrity maintenance, of plant equipment. Establishing the integrity of equipment requires input from a multidisciplinary engineering team; proper integrity engineering always depends on the knowledge of more than one person. That's why the technical specialist group within RAE Engineering is made up of materials, mechanical, and process engineers.

Specialists in many areas all play a part in the integrity engineering we do at RAE.

MORE ABOUT THE SPECIALISTS

An **equipment analysis specialist** is responsible for stress analysis and uses code analysis techniques and also supports more complex problems with computer aided design and analysis. Through analysis we can determine the strength and service life of equipment. This information is then used to determine safety and compliance of plant equipment and pipelines.

The **codes and standards specialist** work along with jurisdictional compliance, ensuring the equipment is not only safe from an engineering point of view, but also in compliance with the various construction codes, such as the ASME Pressure Boiler and Vessel Code.



Materials engineering forms the backbone of all equipment. We continually ask, "Are we using the correct material for the application? Is the degradation of the material in the process environment going to cause potential problems?" Also, if we have a failure or a repair, how do we go about restoring the material to its original condition? Often, we'll use welding and other techniques to improve or restore the integrity of the equipment, thereby allowing equipment to go safely back into operations.

Coating and linings specialists support the materials, applications, and environmental protection of equipment against process and environmental attack. Coatings and linings can play an important role in the service life of the equipment.

Reliability and risk-based inspection (RBI) works towards the safe in-service time of equipment. What are the safe inspection and maintenance intervals that can be allowed for equipment and pipelines? The determination of a premature failure risk and its consequences are extremely important in the daily assessments of equipment operational life. Having an RBI program is a method used to reduce risk, but also to improve the cost-efficiency of inspection

without decreasing the safe operation of equipment.

Our **plant equipment specialists** provide detailed information on specific plant equipment. This information supports inspection and repair techniques based on the practical operational experience of equipment.

Pipeline integrity has a major impact on the plant and product availability and also on the environment (in case of premature failure or product spillage). Our pipeline group looks after structural integrity, and code and environmental compliance of pipelines. Pipeline integrity management programs are initiated and supported with our clients, and along with pressure equipment integrity management programs, form a major part of our daily business.

These **integrity management** programs are developed to code and **jurisdictional authority requirements** for various clients. The engineers should not only know the Safety Codes Act and Regulations, but also how to define a practical process that fits the client's business model and complies with all requirements. The integrity management program set the client's quality and integrity policies

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and help them implement the necessary maintenance, inspection, and training actions. Following the program ensures the condition of all the client's assets are managed all the time.

Previous owner, Hennie Prinsloo, likes to say RAE should have the technical expertise and capability to manage the Total Asset Integrity of the client's equipment from fence post to fence post, including the fence post. That is what integrity management is all about. And that's what we at RAE Engineering do every day.

We are excited to announce the opening of our first office outside Edmonton. RAE Engineering has been growing quickly in the past year, and the opening of an office in Calgary was a logical next step for the company. Since its opening on February 10, 2009 with project engineer Adam Maclean, the office has expanded with three more people: engineer-in-training, Matthew Mason, and integrity technicians, Inga Yizek and Karina Clayton.

Says Izak Roux, President and Technical Manager, "This is a logical step in our service to our clients, getting closer to them so that we can serve them better. Being in Calgary, RAE Engineering can listen and respond to our clients' needs - we are there with them when they need our services."

"It's really a mirror of what we do in Edmonton. It's just on a smaller scale," says Maclean. "We provide total asset integrity management

services for our clients, and as

always, strive to become the service provider of choice in our field." Aside from being more convenient for some of our clients, the new location also helps field personnel stay connected while working in Southern Alberta.

Calgary staff has been hard at work preparing integrity-related strategies and inspection work scopes. They are also updating and further developing the RAE Equipment Management System, known as REMS. The REMS range of functionality has been increasing recently, particularly regarding document management features. Clients who require ready access not only to their inspection records, but to the supporting summary and management documents, can now see manuals, procedures, specifications, summary reports, inspection drawings, images, and so forth online.

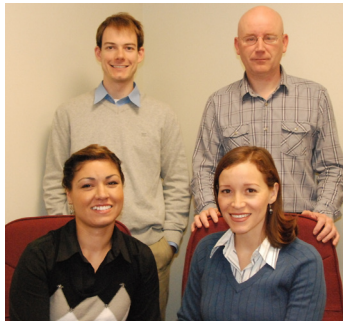
All data and reports are fully exportable to Excel, as usual, and data is accessible 24 hours a day, 7 days a week. Simply login with your user id and password on the

client login page at www.raeengineering.ca.

At the moment, the Calgary office is in a temporary location. We are actively searching for a permanent place to call

home, and will announce the official address in a future newsletter.

You can reach us in Calgary by calling 403-210-3305.



L to R. Back row: Matthew Mason and Adam Maclean. Front row: Inga Yizek and Karina Clayton.

Engineering is there to find solutions and to ensure compliance to safety and code requirements. The last month we had a few interesting cases to solve. One of them was the problem of a lateral imported from Europe and needed for a shutdown. Our contract chief inspector discovered that no CRN (Canadian Registration Number) was available and that the lateral section would need design registration within a week. This normally takes 2 to 6 weeks, so the client goes into crisis mode. On top of the technical challenge, we also had a language barrier; every time we called the European office we had a language gap – "non comprehendo"!

Luckily for the client RAE has a team like Rajiv Das and Cobus du Plessis to chase the paperwork and break the sound and language barrier, and young engineers like Joseph Yeung and Jason Durand to do the Finite Element model, working like a relay team. Come Friday afternoon 5:00 PM, we had all the paper work signed off at ABSA (Alberta Boilers Safety Association). Cobus phoned the client and on Monday the shutdown started as planned and the lateral section was ready for installation with a registered CRN to prove its integrity. Thanks to a great RAE team effort, not even the Atlantic Ocean and a foreign language could come between the engineers and the solution to a client problem.

COATINGS LAB

We have added new equipment for cathodic disbondment testing (CSA Z245.20-06), and we now have the capacity to conduct almost 200 cathodic disbondment tests at a time.

The coatings lab has also added some new faces. Laura Stewart is our new coatings technologist, and Nicole de Varennes is getting used to her new job title of coatings laboratory manager. Linda Gray continues in her role as senior materials consultant, and we currently have two summer students on staff as well.



Newsletter Feedback

We want to know what you think about this letter.

Send your questions, comments, and ideas to news@raeengineering.ca

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All Staff Professional Development June 15-16, 2009

Twice yearly, RAE Engineering sponsors a two-day seminar attended by all staff members. This summer, we're closing the office June 15-16. We're offering a refresher on our core business, which includes all aspects of integrity management and inspection. We're also fortunate to have former owner, Bob Tatz, coming in to give a lecture on "The Ideal Inspector".

Far from a one-way session, everyone contributes, either as a presenter or an organizer. Staff also have input into what they would like training in. It's a good way to catch up on what's happening outside employees' regular area of responsibility, since many staff members are out in the field for many days at a time. Plus the bi-annual event is a great forum for sharing ideas and getting to know each other and RAE Engineering even better.

Celebrating 20 Years with RAE Engineering

Hennie Prinsloo, senior project engineer, is celebrating 20 years with RAE Engineering this summer. Hennie started working for RAE Engineering in 1989, shortly after he emigrated from South Africa to Canada. Later that same year the company registered as a consulting firm with APEGGA, with Hennie as the only professional engineer in the firm. He has always been interested in integrity management, and has worked in the area since 1973.

When he started with RAE Engineering, the company was in its second generation of ownership. When Hennie and Elizabeth Menges (then finance director) took over in 1994, the firm entered its third generation of ownership. The firm had 3 staff members and Hennie was the field engineer. "Over the years," Hennie says, "I have been an inspector, engineer, manager and owner, coffee maker, fixer of furniture - you name it. I am grateful - I have had

the opportunity to work with some great people and some great clients."

Hennie particularly enjoys the variety RAE Engineering offers its staff. "I used to tell new employees that I can promise them one thing: they will never be bored. I can honestly say I have never been bored in the 20 years with RAE, and in my career spanning 35 years I have had very few days in which I was bored."

At the moment, Hennie does a lot of training for clients. He enjoys it and hopes to continue doing the training as long as clients need him. For RAE Engineering's future, Hennie hopes for good things, "With the passing of the torch to the fourth generation of owners, I trust they will continue the great legacy of this company."

On a more personal level, Hennie and his wife, Barbara, love traveling. They hope to fit in many trips over the next few years.

