By Elizabeth Rains

# Cultural exchange

Once, long ago, the road that follows the northwest coast of Trinidad near the town of Couva wandered through clumps of palms, jacaranda trees with fiery orange flowers and frangipani trees, where hummingbirds dipped their beaks into bell-shaped blossoms.

Blue-tufted motmot birds skipped from branch to branch. In the flatlands adjoining the road, the brown stalks and green tops of sugar cane spread out in densely planted fields.

Some 40 years later, the palm trees, birds and sugar cane are gone. Today, the road jogs past a 1,200-hectare tangle of piping, chemical storage tanks, smokestacks, cooling towers and shipping yards that serve as the new engines of Trinidad's economy.

At Point Lisas Industrial Estate, running from Couva past the town of California, almost 100 heavy manufacturing and resource companies form the highest concentration of industry in the two-island nation of Trinidad and Tobago, often called T&T. Methanol, natural gas, petroleum, ammonia and steel producers churn out products for local and multinational corporations.

One of these companies — Vancouver-based Methanex, a methanol producer with manufacturing facilities in 10 countries that produced 25 per cent of the world's supply in 2001 — is bringing Canadian occupational health and safety practices to T&T. Trinidad is facing a long uphill battle toward oh&s awareness, says Lorna Young, director of responsible care for Methanex Corporation. "Our challenge there is to change people's deep-seated thinking about how work should be conducted."

Young has travelled from Vancouver to the tropical island three times this year, training key staff and ensuring oh&s will be a priority at the company's Atlas plant. "The key to implementing health and safety in developing countries is to do more education then they would do in Canada," says Young, her back to a picture window at Methanex's head office, which overlooks Vancouver's Burrard Inlet.

Launched September 15, Atlas is the second methanol production facility in T&T run by Methanex. The first was the Titan plant, built in 2000. More than 2.5 million tonnes of methanol — used to make everything from windshield washer fluid to recyclable plastic bottles, wall paint, and synthetic fibres — are to flow annually from the two plants.

Most employees at Titan and Atlas work in the Methanex administration building, 700 metres from the production area. Young admits the number of jobs at Methanex

PHOTO: PHOTO MONTAGE BY *OH&S CANADA* WITH IMAGES FROM PHOTODISC

isn't very large (about 180 when both plants are in full swing) within the nearby community of 20,000 and an island population of 1.2 million. But there could be some positive oh&s spin-offs.

Young, a former chemist, oversees the responsible care program at all Methanex locations. Responsible care began in 1985, in the wake of the Bhopal disaster in India. On December 3, 1984, methyl isocyanate gas leaked from a storage tank at a Union Carbide pesticide manufacturing plant and drifted toward the Bhopal region's 900,000 inhabitants. The state government of Madhya Pradesh reported that 3,800 people died from exposure to the gas and 2,680 suffered permanent partial disabilities.

"After Bhopal, the chemical industry had a very bad reputation with the public. The industry needed to do something to change that perception," Young says.

The Canadian Chemical Producers' Association (CCPA) was first out of the gates, developing a chemical industry program to take "a risk minimization approach to doing business," says Young. A similar effort started in 1987 among chemical producers in the United States. Since then, 47 countries have followed.

Brian Wastle, vice-president in charge of responsible care for the CCPA, says all programs address work site, community and environmental concerns. Oh&s has been the longest-standing and best-developed segment of responsible care, Wastle says. "It is the one that is most advanced in terms of management. Companies more easily share best practices about health and safety with each other. The philosophy is that no one should be hurt working in a chemical plant."

Nexen Inc., a petroleum company based in Calgary that has oil and gas drilling operations in 12 countries, including Nigeria, Equatorial Guinea, West Africa and Yemen, joined the CCPA and is in its third year of responsible care at the Calgary site. "Responsible care's oh&s reporting requirements are more onerous than those required by government in Canada," says Garry Mann, general manager of safety, environment and social responsibility for international operations with Nexen. Responsible care "is beyond routine compliance with the law," Mann says.

"We decided to take another leap of faith and try responsible care in our Yemen operation," he adds. In its 11 years of operation, Nexen's Yemen facility has had fewer recordable accidents per 200,000 work hours than any other company location, Mann says.

Under the Canadian responsible care program, CEOs must report safety statistics twice a year and attend meetings and workshops. "Companies submit statistics on frequency rates of accidents, the number of recordable injuries, lost-time injury rates and causal information. These cover contractors as well as company employees," Wastle says.

***Like Young, Mann says the big challenge of developing an oh&s program in a developing country is that people are not used to high standards of safety.***

In a formal audit every third year, a verification team of CCPA representatives visit each production site and interview neighbours, suppliers and customers. They consider all company efforts to ensure a safe, healthy environment during the entire chemical production cycle: from the design of a new molecule, through its manufacture, transport, use and disposal.

Employee involvement is key. Wastle says of the evaluation team members, "They want to get a sense that employees are engaged in the health and safety program. They are concerned that employers aren't autocratically making it happen."

But the CCPA doesn't dictate methods, Wastle says. "You are supposed to have the ethic of minimizing risk, but the way you implement that is up to each individual company."

Problems can occur if a company doesn't have the expertise to fully develop its oh&s system, Wastle says. When this happens, he says, the CCPA tries to team the company with another chemical company that has tackled the same problems, or it suggests an outside consultant.

Young says Methanex believes the greatest risk reduction will come through educating workers and making sure the community knows the hazards of chemical production.

Like Young, Mann says the big challenge of developing an oh&s program in a developing country is that people are not used to high standards of safety. Young says that getting rid of unsafe behaviour takes longer in Trinidad than in developed countries. "It's like trying to teach grammar to a second grader and a sixth grader. You'd have to spend a lot more time with the second grader because the sixth grader has a lot more experience," she says.

PHOTOS: AP PHOTO/ TOMAS VAN HOUTRYVE

A lot of time must be spent on learning and frequently reviewing safety procedures before workers can take them to heart, Mann suggests. "Health and safety is not part of the culture."

For its part, Methanex assembles community advisory panels, outlines how its product is produced, and explains its emergency response system. The information is in line with what Atlas workers learn, albeit not as in-depth. Workers learn about hazard recognition, emergency procedures, safe work practices and safety gear. They also hear what they, individually, are doing right and wrong when it comes to oh&s.

To gather and exchange that information, Methanex uses the Safety Training Observation Program, or STOP, developed by DuPont, and trains volunteers and supervisors to be safety auditors. Auditors must "decide — observe — stop — act — report."

Deonanan Jagdip, an oh&s officer at Atlas, explains the process. First, the auditor decides which work area to visit. He then observes the worker, stops any unsafe actions, and immediately corrects these by advising the worker of how to work safely. "If there are good safety practices by the worker, actions are taken to encourage the worker to continue working and performing safely," Jagdip says. Finally, the auditor fills out a form that reports what has occurred. This gives the company a running tab of how its safety program is progressing.

Lester Boodhoo, senior responsible care coordinator at Atlas Methanol, says workers have "a natural reaction to be defensive" about the STOP program. To counter this, Boodhoo encourages them to keep an open mind.

Ashram Beharry, director of corporate services for the company, says reservations tend to evaporate when workers start seeing the positive feedback. "It reinforces good behaviours. There are no penalties. They stop doing the unsafe action," Beharry explains.

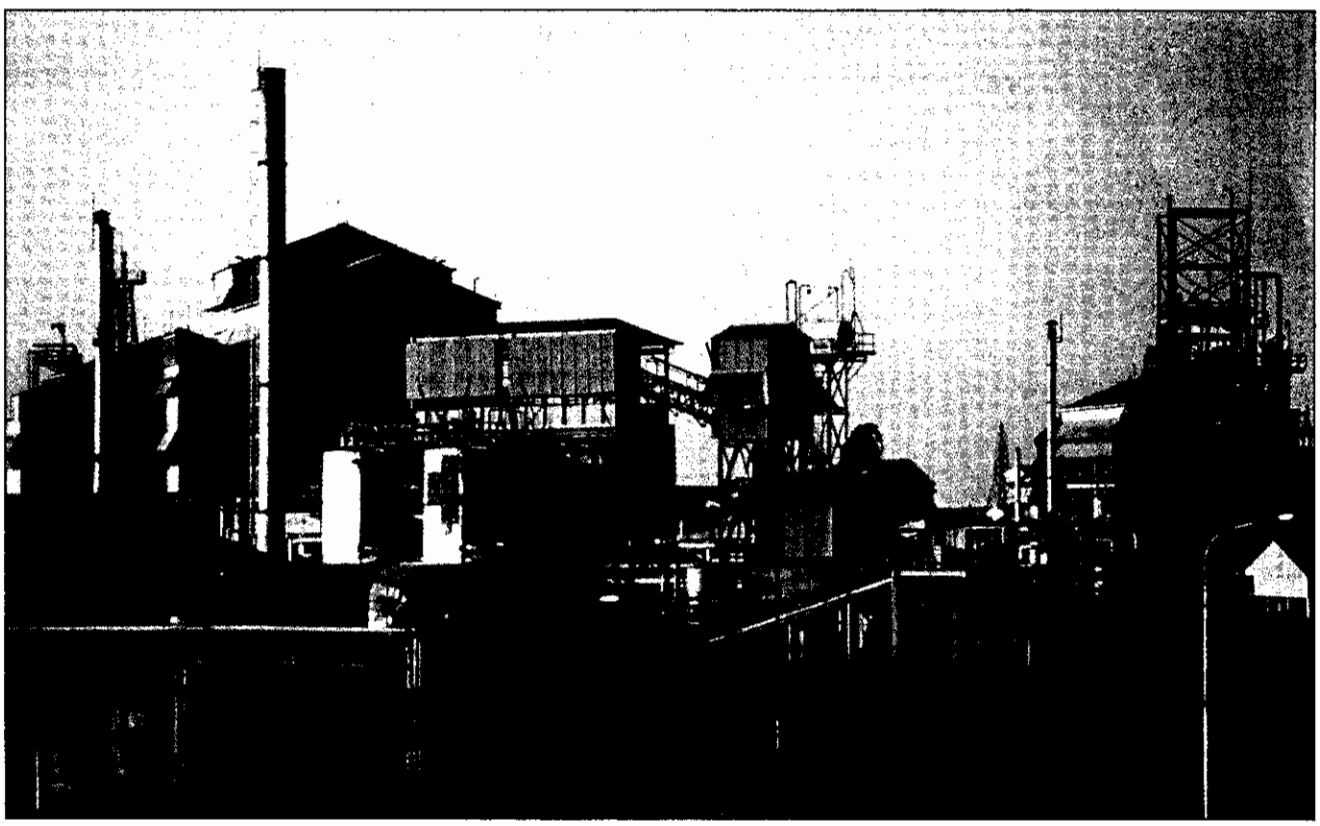
Delicia Pinard, a spokesperson for Methanex in Trinidad, says that enough Trinis (T&T vernacular for Trinidadians) have graduated with degrees in resource technology that the country has become a source of highly skilled workers. The first two years of post-secondary education in Trinidad are considered an extension of high school and are free.

Over the last two years, Methanex has granted the Trinidad and Tobago Institute of Technology more than $4 million (Cdn) to expand its technical programs and to create an oh&s module. Students will learn about, among other issues, hazard recognition, proper body positioning, correct use of power tools, and some oh&s theory. The curriculum, still being developed, has been tested in a few classes and the institute plans to incorporate it into all industrial technology and building construction programs by the end of 2005.

Speaking plainly, Boodhoo says Trinidad's current oh&s legislation "is considered obsolete." The *Factories Ordinance of 1950* was based on a 1937 British law. It requires a factory to report any injury causing more than three days off work.

The law allows for a "Factory Inspectorate" so investigators can check on sites where injuries occur. "But they don't have the facilities to do that," Boodhoo says. About the only time you see an inspector is when someone is killed or maimed, he adds.

*The Union Carbide factory in Bhopal, India, seen here in 1990, was the site of a poison gas leak in December of 1984, which claimed thousands of lives and injured tens of thousands of other inhabitants.*



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## Safety Tips from *Trinidad*

Lorna Young, director of responsible care for Methanex Corporation, says cultural traits common to many Trinis can provide insight into how to train Canadian workers to be safe.

Some younger workers in Trinidad have a joking attitude about safety. For example, Young says, "Some might say, 'I don't need to wear my PPE. That's not cool.'" A similar "macho" attitude occurs in Canada, she adds, but generally among older workers who may say, for example, "'I don't need to wear hearing protection. I've been doing this for 30 years.'"

***Young's Tip:*** Be alert to such behaviour, even if someone has a lot of experience.

In Trinidad, people seem to take naturally to teamwork and are inclusive in the way they do their jobs, Young says.

***Young's Tip:*** Get people to take ownership of their jobs and realize that safety increases with teamwork.

Delicia Pinard, a spokesperson for Methanex and herself a Trinidadian, says, in general, a lot of Trinis have an overwhelming desire to be nice. "They will answer you with what they think is right." Wanting to be helpful, Pinard reports, some people may not be as concerned with content.

***Young's Tip:*** A person shouldn't depend on what another worker says about whether or not a work area is safe. Teach individuals to do their own checking.

Kenneth Noel, a member of a T&T government committee that examined the *Factories Ordinance*, agrees with Boodhoo's assessment of the inspectorate. "Over the years, that division has had a chronic shortage of staff," Noel says.

The ordinance saw minor amendments — the last one was in 1969 — but it makes no reference to modern concerns, including hazard analysis and worker competence. It applies only to factory work, defined as quarries, companies that manufacture products, and engineering and construction sites.

The legislation sees methanol production as a type of manufacturing, so Methanex is covered, along with its office building, which is considered part of the factory. The oil rigs that dot the waters along the Trinidad coast are not covered.

Noel, president of the Safety Council of Trinidad and Tobago, explains that workers in a sugar refinery are protected under the legislation. But a field hand cutting cane could chop off an arm and have no recourse to complain to the employer, except through a union. As for office buildings, if they do not belong to a factory, quarry or construction site, they don't receive any attention, Noel adds.

In response to the flaws in the ordinance, Noel's committee wrote comprehensive legislation to address enforcement and coverage gaps. The *Occupational Safety and Health Act* would regulate all work sites in every sector and would mandate research, training and inspection. Infractions would carry penalties ranging from a $400 fine for defacing posted safety documents to as much as $21,000 and three years imprisonment for an employer who flouts the act, causing a worker's death.

But the law, passed by the T&T parliament in December of 2003, has yet to be proclaimed. Before that happens, the government must set up an enforcement agency and fund a board to interpret the regulations. Noel expects the legislation will be proclaimed early next year, bringing worker protection more in line with countries like Canada.

Until then, the small contingent of Trini workers at Methanex can rely on responsible care. In Trinidad, Methanex is the lone responsible care company among scores of chemical producers.

As a Canadian organization, Wastle says, the CCPA cannot impose responsible care on multinationals based in countries other than Canada. The best way to get companies to ensure worker health and safety in any developing country would be to form a local, like-minded association of chemical producers, he suggests. Methanex hopes to do its part in getting that done.

But that could take a while, says Young. Gary Breff, who has since retired as president of Atlas Methanex, began talking with T&T companies at a meeting of facility managers at the Point Lisas estate last year. The idea was to wait until companies felt comfortable with the concept before recommending they form a nationwide organization.

The challenge right now is "to get workers acting like responsible care people. That is the real goal," Young says. By way of example, she notes that winter holidays in Canada may mean lots of snow and Christmas trees to people who live here. "But in a country like Australia, for them Christmas is a barbecue at the beach." The concept of "normal" varies in different countries, she says.

"Here in Canada, there's a deep-seated thinking about legislation, policies and behavioural standards," Young says. In developing countries, people tend to follow the boss's orders without asking questions, she says. "There are no basic standards about health and safety, and they think that's normal."

This view of "normal" is reinforced in the Trini community where many Methanex workers live. At the same time the T&T government has been slow in enforcing — or even proclaiming — oh&s laws, many companies at Point Lisas have failed to inform the community about environmental problems. "There's a lack of information and that breeds a lot of distrust," says Boodhoo.

Residents of the Couva area recall disasters over the past decade, including a turbine explosion at an ammonia plant that killed two workers, Boodhoo says.

To calm community fears, Methanex has been following responsible care guidelines. Atlas has created a community advisory panel to help neighbours meet regularly to learn about the company and to communicate concerns.

One of the biggest concerns is ammonia, the Point Lisas complex being home to 10 such facilities. Atlas sits next door to one.

Yvonne Hamilton, a member of the community advisory panel and a former teacher, has strong words about the ammonia prob-

lem: "People fear that stuff. Sometimes we get a whiff of ammonia in the area. People feel it affects our health."

Panel members have discussed an emergency response plan that would organize an evacuation if the gas threatened the area.

Methanex staff, who work mainly inside the administration building or in three adjacent technical buildings, might not need to flee. They are told to make their ways to "safe rooms". The rooms are constructed so doors, windows and ventilation can be cut off. If one of these entry routes is breached, positive pressure in the room would keep air flowing outward rather than allow external gases from drifting inside, Young explains.

Other emergency systems address the more likely scenario of fire. If the plant's heat sensors were to detect something awry, monitoring equipment and workers within the control room would analyze the situation. Fire-retardant pipes throughout the site would release foam and if the situation were serious, methanol generation would stop and three diesel generators would power a shutdown. In an extreme case, workers would evacuate.

Michelle Anderson, a process engineer at Atlas, explains that methanol production takes natural gas through a number of potentially hazardous stages: it is compressed, heated, desulphurized, combined with steam and oxygen, converted to methanol and water, and distilled. During the stage using oxygen — pure oxygen is both flammable and explosive — temperatures can climb to 1,500 degrees Celsius. Every step involves one or more flammable materials: natural gas, hydrogen, oxygen and the end product, methanol.

At the Atlas site, red "firewater" pipes run close to the gravel-covered ground, surrounding the 13-hectare maze of steel pipelines and tanks. At the riskiest area of the plant, near the end of the production chain, pipes climb up to a two-story foam tank that tests the purity of raw methanol. If heat-sensing wires that dangle from the pipes note any danger, fire-retardant foam will spray the hot area. In a serious fire, the plant will shut down.

Other significant dangers at the site are high pressure, electrical high voltage, rotating equipment and caustic chemicals that could eat through skin.

Working from the administrative and technical buildings, few Methanex employees are regularly exposed to these dangers. The work of running the plant takes place mainly through computers.

Chemical manufacturing has become so automated that most injuries occur in the office or at a computer, Wastle says. Among the most common injuries are repetitive strain injuries, back strain and carpal tunnel syndrome, he adds.

Those who actually set foot in the production area are likely to be workers who do occasional field checks, contractors welding pipes, painting, or installing insulation in pressure vessels, or supervisors giving a tour of the plant.

Young says "poor housekeeping" is one of the biggest problems among Trini contractors. Many have developed untidy habits while working at other sites, she says.

Working with contractors is one of the biggest problems in Trinidad, Young emphasizes. "Locals who work for Methanex as permanent employees adopt this responsible care attitude quite quickly. But contractors come from another mindset about safety and health. It's hard to get them to understand that we deem responsible care as necessary."

***Methanex insists that no contractor enter its production area without safety training of up to 18 hours.***

Methanex insists that no contractor enter its production area without safety training of up to 18 hours. The company also requires contractors to have work permits demonstrating they have the correct safety equipment.

"When we first started construction at our Trinidad facility, contractors would come on site without a hard hat, safety glasses or steel-toed boots. They thought we were playing games or something," Young says. Some of them were dismissed.

PHOTO: NOVA DEVELOPMENT CORPORATION

Young says she has "high hopes" that when the new T&T oh&s law kicks in, contractors will gradually act more responsibly and safety problems will eventually decline.

That will not be enough to get the palm trees to grow and the birds to fly back to Point Lisas, but it will go a long way toward making workers safe. OHS

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