



# WINDOW OF OPPORTUNITY

## Promoting engineers' international mobility

**Get ready.** Thanks to globalization and harmonization of licensing requirements, the timing appears right for the free trade of engineering services. While maintaining high professional standards, international agreements negotiated by the Canadian Council of Professional Engineers are making it easier for Canadian engineers to practise in other jurisdictions—and foreign engineers to practise in Canada.

by Wendy Ryan-Bacon, P.Eng.

## Perhaps

George Orwell was prescient after all.

Although his nightmarish vision of a society ruled by the dictates of "Big Brother" seems less credible with the collapse of the Soviet Union and the dismantling of the Berlin Wall, his portrayal of the world's future economic structure may be closer to the mark. In his well-known novel *1984*, Orwell describes a world dominated by three large trading blocks. His portrayal of global economics is clearly wrong, but the reality of the European Economic Community, the North American Free Trade Agreement (NAFTA) and the Asia Pacific Economic Cooperation (APEC) countries cannot be disputed.

These and other trade coalitions are affecting how we do business and making the international mobility of engineers more important. Also worth noting is the 1994 General Agreement on Trade in Services (GATS)—the first multilateral agreement to include professional services (such as engineering) in trade negotiation. Over 50 government signatories have made commitments to grant market access to engineering services, and there are rules in place regulating that access. GATS commits signatories to continuous liberalization through periodic negotiations. Scheduled for 2000, the next round is expected to bring increased rules in professional services, along with expanded opportunities for market access.

### CCPE's international role

The Canadian Council of Professional Engineers (CCPE) is the national federation of the 12 provincial and territorial associations that regulate the engineering profession in Canada. Its mandate is to assist member organizations in areas where national and/or international coordination is desired, including engineering education, the registration of engineers and the mobility of registered engineers. CCPE represents its member associations at the national and international levels, negotiates international accreditation and recognition agreements with other engineering organizations, and promotes rigorous international engineering standards. For example, the Canadian government has, and is expected to continue to, consult CCPE on GATS negotiations related to engineering.

With the trend toward international free trade and economic globalization, CCPE's

international initiatives have become increasingly important. CCPE's board of directors established in May 1997 an International Affairs Committee (IAC), whose primary role is to achieve CCPE's international goals. These are to:

- ◆ promote rigorous international engineering standards that meet or exceed Canada's own high standards;
- ◆ gain international recognition of Canada's standards, education accreditation and licensing systems for engineering;
- ◆ facilitate international mobility for Canadian engineers, so that they can practise abroad without discrimination; and
- ◆ ensure that foreign engineers coming to Canada have the qualifications necessary to meet our exacting standards of practice.

CCPE's international activities are also supported by the work of several standing committees, which comprise volunteer engineers from across Canada. Two well-known CCPE committees are the

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Canadian Engineering Accreditation Board (CEAB), which accredits undergraduate engineering programs in Canada, and the Canadian Engineering Qualifications Board (CEQB), which develops and maintains national guidelines for admission to the profession.

### The subtleties of mutual recognition agreements

Much of CCPE's international activity involves the negotiation of mutual recognition agreements with other engineering organizations, which are aimed at ensuring that Canada's engineering profession is well prepared for international free trade in engineering services (see sidebar on pp. 28-29). In Canada, engineering licensing bodies are unique in the breadth of leg-

islative authority they have to regulate the profession, and registration is synonymous with licensing. In many other countries, there is a clear distinction between registration and licensing. For example, there is widespread registration of engineers in Australia and many European countries, but only limited licensing. In the United States, only those engineers who offer their services directly to the public must be licensed.

The wide variety of systems different jurisdictions use to register, certify or recognize engineers can make it difficult to negotiate mutual recognition agreements successfully. In CCPE's case, this problem has resulted in the negotiation of agreements at three distinct levels.

*First-level international agreements*, such as CCPE's agreement with the Accreditation Board for Engineering and Technology Inc. (ABET), the accreditation body for engineering education programs in the United States, are fairly straightforward, as they require a high degree of similarity to exist among the accreditation processes used in the jurisdictions of the signatories. The similarities between the accreditation processes used by CEAB and ABET are not surprising, given that CCPE relied heavily on the ABET procedures and criteria to establish its own process.

*Second-level agreements* also require a certain level of similarity in the accreditation processes used in the signatory jurisdictions, but focus primarily on the degree of similarity that exists between educational objectives and outcomes. The Washington Accord is this kind of agreement. The eight signatories to the accord have agreed to mutually recognize each other's accreditation systems, even though their accreditation procedures and criteria differ widely in some respects.

Conversely, *third-level agreements* depend almost entirely on similarities among objectives and outcomes in the jurisdictions involved. In the case of engineering, the issue is whether the formation process produces competent engineers. These agreements are the most difficult to negotiate, because they require the signatories to agree on a mechanism to establish a degree of equivalency, even though their licensing and registration processes may differ widely. The NAFTA mutual recognition agreement for engineering between Canada, Mexico and the United States is an example of a third-level agreement.

In very general terms, mutual recogni-

tion means that one jurisdiction will accept the qualifications of a professional engineer licensed/registered in another jurisdiction, without any further assessment of technical competence and experience. On behalf of its constituent members, CCPE enters negotiations based on the following underlying premises:

- ◆ any restrictions will be based on only competence and the protection of public health and safety;
- ◆ there is a credible system to validate individual engineering competence;
- ◆ professional engineers in each jurisdiction are competent;
- ◆ there is a clear understanding that CCPE can only recommend implementation of an agreement to its constituent members, but that every effort will be taken to ensure implementation.

### Why international accords are needed

In addition to achieving its primary international goals, there are other important reasons for CCPE to continue negotiating international agreements on behalf of Canada's engineering profession. As a result of GATS, countries around the world are embracing global free trade of professional services. National governments are being encouraged to involve their self-regulating professions in discussions on this initiative, primarily to ensure that high professional standards are maintained following the implementation of GATS. In addition:

- ◆ Once an agreement is in place, it minimizes the need for a laborious examination of the credentials of applicants seeking to register as professional engineers in Canada, provided they meet its provisions.
- ◆ The negotiation and subsequent monitoring of an agreement provide opportunities to examine carefully the registration policies and criteria used in other countries, thereby accelerating the reevaluation and improvement of our own system.
- ◆ The pursuit of international agreements provides an awareness of engineering education and practice around the world, and the opportunity to share experiences on common issues.
- ◆ Negotiations are a forum to promote Canadian policies and practices, as well as to influence the policies and practices used in other countries.

Since international agreements impact on the admission policies and practices of CCPE's constituent members, CCPE's constituents have the ultimate authority to approve or reject the implementation of

an agreement in their respective jurisdictions. CCPE has no regulatory authority to obligate implementation, but close collaboration with our constituent members, combined with thoroughness of the negotiating process, subsequent monitoring and the exchange of information among jurisdictions should allow international agreements to be implemented successfully. In the long run, these agreements assist CCPE member organizations by facilitating their processes for determining whether foreign applicants for licensure meet their criteria.

From CCPE's perspective, the key benefits of international agreements include facilitating international mobility for Canadian engineers, and helping to ensure that non-Canadian engineers seeking licensure in Canada are fully qualified. In other words, they enable Canadian engineers to take advantage of the opportunities created by international free trade, while also protecting public safety in Canada.

International agreements also increase the visibility of Canada's rigorous engineering education accreditation processes, standards of engineering practice and engineering licensing system. The high-calibre and excellence of Canadian engineers are now recognized around the world. In addition, CCPE is developing strong ties with other international organizations, and best practices for the regulation of the engineering profession are being encouraged and fostered throughout the world.

### Where to from here?

The current regulatory model for engineering in Canada has served us well for a long time, and is recognized as one of the best in the world. We are therefore able to expose our model to the scrutiny of other jurisdictions and defend it strongly. But as globalization continues and engineering practice changes, questions are beginning to surface. Can the Canadian model embrace emerging technologies, which is essential to ensure appropriate protection of the public? Is our model exclusive or inclusive? Is its mandate still relevant to all areas of practice? Why aren't more engineering graduates seeking licensure?

These questions and many others must be asked, explored and answered as we move into the future. Our international activities can help us to look at the possibilities and options facing us. ◆

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# Blueprints for the mutual recognition of qualifications

To date, CCPE has signed four international agreements. They are the:

- ◆ Mutual Recognition Agreement Between the Accreditation Board for Engineering and Technology Inc. (ABET) and CCPE (CCPE-ABET Agreement);

- ◆ Recognition of Equivalency of Accredited Engineering Education Programs Leading to the Engineering Degree (the Washington Accord);

- ◆ Mutual Recognition of Registered/Licensed Engineers by the Jurisdictions of Canada, the United States and Mexico to Facilitate Mobility in Accordance with the North American Free Trade Agreement (the NAFTA Mutual Recognition Agreement); and

- ◆ Mutual Recognition Agreement Between La Commission des Titres d'Ingénieur for France and CCPE for Canada (CCPE-CTI Agreement).

The signatories to each of these agreements are from countries where the accreditation of engineering education programs is a key foundation for engineering practice, high academic standards of engineering education are required for registration, and the engineering profession is well-regarded—either through statute or convention. Although the accreditation systems of the signatories are not identical, the output (e.g. graduation from an engineering program, licensure/registration of engineers) is substantially equivalent or comparable. Exceptions are possible, and specific details of the systems in each jurisdiction may be different. However, each of the international agreements signed by CCPE is based on continual mutual monitoring and exchange of information among the signatories.

### CCPE-ABET Agreement

ABET is an independent organization responsible for the accreditation of university engineering and college engineering technology programs in the United States. CCPE and ABET have mutually agreed that the accreditation systems for undergraduate engineering programs in the U.S. and Canada are comparable, and that the accreditation

decisions rendered by one party are acceptable to the other. The mutual recognition agreement between CCPE and ABET was signed in 1980 and renewed in 1997. In Canada and the U.S., it is applicable to all programs accredited by each body.

### The Washington Accord

The Washington Accord was signed in 1989 and renewed in 1997 by engineering organizations from Canada, the United States, Ireland, the United Kingdom, Australia, New Zealand, Hong Kong and South Africa. Each signatory organization is independent, and has the mandate to accredit university engineering programs in its respective jurisdiction. As was the case with the ABET agreement, the signatories have recognized that their accreditation systems for undergraduate engineering education programs are comparable, and that the accreditation decisions rendered by one party are acceptable to the others.

Where Canada is concerned, the agreement applies primarily to engineering programs accredited in 1989 and later. The exceptions are U.S. programs, which are covered under the CCPE-ABET agreement; Hong Kong programs, which were not recognized under the accord until 1995; and South African programs, which will not be recognized until further investigation has been done.

### NAFTA Mutual Recognition Agreement

The signatories to the NAFTA Mutual Recognition Agreement are all national bodies with the mandate to address national and international engineering issues. It provides a mechanism to recognize the qualifications of professional engineers seeking temporary work in another jurisdiction who meet the established criteria.

The agreement was signed in 1995, subject to ratification. Subsequently, one of the three U.S. engineering signatory organizations ratified the agreement on a provisional basis for a two-year period. As this ratification has now expired, the agreement remains technically unapproved in the U.S.

In the case of Canada and the U.S.,

neither signatory organization has binding authority over the engineering licensing bodies in their jurisdictions; the provincial, territorial and state organizations responsible for licensing and registration must decide whether to implement the agreement on an individual basis. In Canada and Mexico, all engineering licensing authorities have agreed to implement the agreement. However, Mexico is still grappling with the legislative procedures required for implementation. During the ratification period in the U.S., the Texas Board of Professional Engineers signed a letter of intent to implement the agreement, and has subsequently amended its governing legislation to enable implementation.

The difficulties of trying to convince all 55 American jurisdictions to implement the agreement were discussed during a recent meeting with U.S. officials. Our representatives suggested that negotiations between specific provinces and states, in the spirit of the NAFTA Mutual Recognition Agreement, may be more fruitful in liberalizing the trade of engineering services between Canada and the U.S.

The recognition criteria established for the NAFTA Mutual Recognition Agreement include licensure, graduation from an accredited program and 12 years of engineering experience since graduation. Engineers who are not graduates of accredited programs require 16 years of experience and, in some cases, must have their educational formation assessed for suitability. Essentially, even though the licensure systems in Canada, the U.S. and Mexico are quite different, recognition criteria make it possible to determine substantial equivalence.

### CCPE-CTI Agreement

The Commission des Titres d'Ingénieur (CTI) is responsible for accrediting the engineering institutions in France that award the title "Ingénieur Diplômé." The CCPE-CTI Agreement was signed in 1998. It will not be implemented until final approvals are obtained in France, and an implementation report is completed in Canada. The agreement recognizes that the processes used to accredit undergraduate engineering pro-

grams in France and Canada are substantially equivalent. It also provides mechanisms for individuals with an "Ingénieur Diplômé" from France to attain professional engineer status in Canada, and for professional engineers in Canada to attain "Ingénieur Diplômé" status in France.

### Striking new deals

A number of other international initiatives are ongoing. The signatories to the Washington Accord have formed a group called the Engineers' Mobility Forum to develop a mechanism for the recognition of engineers at the professional level. Observers from the European Federation of Engineering Associations (FEANI) and Japan are also participating in these negotiations.

The Australian signatory to the Washington Accord has been active in the Human Resources Development working group of APEC, and is trying to establish a mechanism to foster mutual recognition of professional engineers by APEC countries. CCPE has taken an active role in these discussions to promote the maintenance of high engineering standards and to influence the development of models related to the mutual recognition of engineering qualifications.

On an individual basis, CCPE is considering a possible mutual recognition agreement with the Institution of Civil Engineers in the U.K. To assess implications for the engineering profession, we are also monitoring developments in Europe through FEANI and the Canadian government's current initiatives to reach a trade agreement with the European Free Trade Association.

In the spirit of NAFTA, CCPE continues to work in Latin America. Recently, with funding from the Canadian International Development Agency, we helped five Latin American countries develop a framework for the accreditation of their engineering education programs. We have also agreed to help the Federation of Civil Engineers in Costa Rica conduct a pilot study aimed at developing an accreditation and licensing system. ◆

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