FROM CONSIDERATION TO INTEGRATION

Canadian Engineering and International Engineering Graduates

ABSTRACT

The engineering licensure process can be unclear to immigrants which is why the Canadian Council of Professional Engineers (CCPE) and the provincial and territorial engineering licensing bodies created *From Consideration to Integration* (FC2I), a three-phase initiative designed to integrate international engineering graduates into the Canadian profession and workforce without compromising public safety or lowering professional standards.

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Marie Lemay, P.Eng, ing., is Chief Executive Officer of the Canadian Council of Professional Engineers (CCPE). In this capacity, she oversees the administration of the Council and directs CCPE's staff. She maintains close working relationships with the 12 member associations/ordre, which represent Canada's 160,000 professional engineers and acts as the organization's primary spokesperson. She also represents CCPE internationally.

Rakesh Shreewastav landed in Toronto on a grey, snowy day in March with high hopes for his future in Canada. With a Master of Science degree in civil engineering from Moscow State University of Environmental Engineering and a life-long desire to live in Canada, he was excited about his career prospects. "I was confident that I could be successful," says Shreewastav. "I was expecting the challenges, the change and the competition."

What he wasn't expecting was the process to become recognized as an engineer. His academic qualifications and work experience were assessed by two committees and he underwent an intensive interview process about his skills and experience. In hindsight, he can appreciate the need for such scrutiny but at the time, it was difficult. "It was a bit disappointing," he says, reflecting on the interviews and committee-driven assessments of his education and work experience. "I didn't think it would take so long."

Shreewastav's frustrations with the engineering licensing system have been echoed by other international engineering graduates (IEGs). But the system is rigorous because it is designed to ensure public safety. Canadians can have confidence in the security of their bridges, flight systems, wastewater treatment plants and medicines because the engineers working on them have met a number of key criteria. While it may seem onerous, the goal is public safety and security.

Engineering in Canada is a self-regulated profession with licensure being a provincial or territorial responsibility. There are more than 160,000 Canadian professional engineers and each has followed the same process: they have met education and experience requirements, passed a law and ethics exam (called the Professional Practice Exam), demonstrated that they are of good character, provided engineering references and shown that they have appropriate language skills. With small variations, this is the process followed in every province and territory. Students who graduate from accredited[1] engineering programs receive their iron ring, but it is the P.Eng.[2] that signifies that the recipient is licensed and can call him or herself an engineer. IEGs can also receive an iron ring once they have been accepted by a licensing body as an Engineer in Training (EIT) or once they have their P.Eng., depending on the rules in their area.

The licensing system is very effective; witness the worldwide, excellent reputation of Canadian engineering and our high public safety standards. This doesn't mean, however, that it is flawless. The process may not be easy to understand, and the rationale for some of the steps is not always clear to those trying to build a new life in Canada.

Building a new life – every year, thousands of immigrants come to this country to do just that and many identify themselves as engineers. In 2001, of the 44% of skilled workers who identified an intended occupation at the time of immigration, 63% indicated engineering. The criteria for the selection of skilled workers changed in 2002 with the implementation of the *Immigration and Refugee Protection Act*; applicants are no longer evaluated on their occupation. Rather, they are assessed based on education, official language ability, experience, age, pre-arranged employment opportunities and adaptability.[3] This means that many of those permitted to enter the country are well-educated, often with many years of work experience.

Those who self-identify as engineers may be seasoned engineering professionals, recent engineering graduates or working in jobs that would be technologist, technician, architect or scientist positions in Canada. Regardless of which group they fall into, they arrive in Canada

expecting to begin work as engineers but may be unable to find engineering employment. Many find themselves in the difficult cycle of needing work experience to get their engineering licence[4] *but* needing their P.Eng./ing. before an employer will hire them. "I sent out dozens and dozens of résumés," recalls Shreewastav, "and always followed up by phone and in person. I got a junior position three months later."

IEGs without engineering employment are often portrayed in media reports as cab drivers, delivery people or fast food attendants. The engineering profession has always been disturbed by these reports because we recognize that anyone with the education and experience to be working as an engineer in Canada should be working to their full capacity. It was this situation that led to the creation of *From Consideration to Integration* (FC2I), a three-phase initiative[5] designed to integrate IEGs into the Canadian profession and workforce without compromising public safety or lowering professional standards.

Although it is only licensing that is within the profession's scope of responsibility, FC2I also examined the roles that culture, language, employment and communications play in the lives of IEGs. Led by the Canadian Council of Professional Engineers (CCPE), the initiative's Steering Committee had representation from federal and provincial governments, the engineering regulatory bodies, employers, immigrant-serving organizations, educators, engineers and IEGs themselves. This diversity of representation, the level of consultation, and the holistic approach with which the engineers tackled the project set it apart from other similar initiatives.

Phase I of FC2I looked at every aspect of the IEG experience, from taking the first steps to immigrate to Canada, to licensing, finding a job and all the elements of culture and language that accompany that journey. Phase II involved sorting, analyzing, validating and prioritizing that information so that the Steering Committee could draw conclusions. The 17 recommendations that came out of Phase II included the creation of a "Working in Canada" seminar, building a database of recognized engineering degrees and creating a comprehensive, single source Website. The Phase II report also recommended providing IEGs with a provisional licence once they have met all requirements for licensure except the one year of Canadian experience; developing a mentoring program; and determining which elements of the engineering licensing process can be done overseas, to speed up the process once IEGs arrive in Canada.

Phase III, currently underway, is focused on implementing the Phase II recommendations; work continues in every region of Canada to assist IEGs with the integration process. Not only do the cases that follow offer concrete examples of how the engineering profession is helping IEGs, but they demonstrate a change in perspective on the part of the licensing bodies. In 2002, our national survey indicated that just over 12% of licensed engineers in Canada were foreign-trained, while our most recent member survey shows that this has increased to just over 17%. Our licensing bodies recognize that ensuring a fair licensing system for all applicants is crucial for the integrity of the process.

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Working in Canada seminar and alternatives for academic assessment

As in every other province and territory in Canada, IEGs coming to Manitoba are assessed by the academic review committee of the provincial or territorial licensing body, in this case the Association of Professional Engineers and Geoscientists of the Province of Manitoba (APEGM). Together with APEGM, the applicant can determine how they can qualify for licensure and the P.Eng. designation. For many, the assessment will indicate that they must write technical exams, and all must gain a minimum of one year of Canadian work experience. The subsequent time and cost can be problematic for some of these immigrants but a program offered at the University of Manitoba, in conjunction with APEGM, is addressing some of these issues.

The one-year program, called the Internationally-Educated Engineers Qualification (IEEQ) Pilot Program, is offered through the University to IEGs who have been assigned five exams or fewer through the APEGM assessment. It provides an alternative route for immigrants with engineering credentials obtained outside of Canada to meet part of the licensing requirements for engineering practice in Manitoba. Participants take courses with University of Manitoba engineering students and attend a course designed specifically for them, titled Practising Engineering in Manitoba. Through this course, they learn about work practices in Canada and have the opportunity to visit various industrial sites. After two semesters at the University, the participants have a four-month paid internship in industry. At the end of the program, graduates are considered academically qualified for licensure and have acquired four months of the one-year of Canadian experience required for licensure. The Practising Engineering in Manitoba curriculum is currently being developed, with the help of funding from HRSDC, into a Working in Canada seminar package that will be available for use by other organizations.

Language benchmarking

Another of the 17 FC2I recommendations was to establish a language benchmark for all engineers to meet before becoming licensed. The Association of Professional Engineers, Geologists, and Geophysicists of Alberta (APEGGA), the engineering licensing body in Alberta, in partnership with the Edmonton Mennonite Centre for Newcomers, is working to establish an engineering language benchmark so that the language requirement for licensing is clearly defined. Each province and territory currently has its own language standard; there is no set test and no existing language tests are specific to engineering. Once established, the language requirement for licensing will be clearly defined and all licensing bodies will be encouraged to adopt it.[6] This will allow English as a second language courses to be tailored to IEGs' needs. Funding has been provided by the Government of Alberta and Citizenship and Immigration Canada.

Labour market studies

CCPE has recently received federal government funding to undertake a labour market study. The results of the study are expected to help the engineering and technology sectors gain a deeper understanding of their skills and of the employment situation nationally, regionally, by discipline, level of experience and by industry. On a yearly basis, there are many more engineers entering the Canadian marketplace today than there were a decade ago. While there are certain regions of the country looking for engineers, there are also areas where over-supply appears to be a problem. We simply don't have a clear picture of the labour market, and this project will correct that. This will help IEGs find engineering work since they will have access to specific labour market information.

Database of international engineering degrees

CCPE is also leading the creation of an International Institutions and Degrees Database. Once completed, we will have established an accurate, current database of recognized international engineering degrees and educational institutions to help verify the education of licensing applicants. The database, which represents one of the key recommendations coming out of FC2I, is important because it will provide the licensing bodies with a consistent set of information on the international institutions and degrees with a recommended academic assessment. This means that a graduate from a particular international program will have their academic credentials assessed in the same manner across the country. Whether applying for licensure in Alberta, Nova Scotia or Ontario, for example, the assessment would use the same database information and apply it to the individual's situation, recognizing that it forms one component of the overall assessment for licensure.

The Association of Professional Engineers of Nova Scotia was selected as the inaugural winner of the Richard (Dick) Smyth Award, instituted by the Metropolitan Immigrant Settlement Association (MISA) to recognize and honour Nova Scotian individuals, businesses or organizations who have demonstrated exemplary efforts in assisting newcomers to successfully integrate into Canadian society. As stated in the award citation, APENS' "active involvement and leadership in helping ease the way for internationally trained engineers illustrates the spirit and ideals behind the award."

In Ontario, Professional Engineers Ontario (PEO) has adjusted the process for assessing academic credentials. Approximately two-thirds of the IEGs are exempted from having to write technical exams largely thanks to a significant increase in Confirmatory Exam Program interviews conducted by PEO's Experience Review Committee. The committee treats the interview as a prior learning assessment tool and this has benefited many IEGs.

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The above offers a sense of what is happening across the country. The engineering profession has recognized that making changes to the licensing system, or to how we communicate it, can take a long time but we are in this for the long-term. We are proud of our achievements, and we know that partnerships will help us reach new goals. Working cooperatively with governments, the provincial and territorial licensing bodies, and with IEGs themselves will result in a stronger, more transparent process.

Like so many other successful IEGs, Rakesh Shreewastav's story is one of hard work and accomplishment. He now works as a Senior Project Engineer for the Ministry of Transportation, Windsor Border Initiatives Implementation Group (Windsor BIIG) in the London office. He sits on several committees of PEO, and is a member of the Ontario Society of Professional Engineers, the Canadian Society for Civil Engineering, the Canadian Society of Value Analysis, and Value Society SAVE International. He has judged Canada First Robotics competitions and regional science fairs, served on the board of directors of the Rotary Club of Nipissing and continues to be actively involved in local Rotary clubs in London.

"I am a proud Canadian citizen," says Rakesh Shreewastav. "I am telling this story because I am proud that Canada is my home, and maybe my story will help others." He knew that his international background and his international degree meant that his skills and knowledge were transferable. Now, as an engineer he is able to contribute fully to Canadian society and to the economy, to the benefit of us all.

Notes

[1] The Canadian Engineering Accreditation Board evaluates Canadian engineering education programs to ensure that they meet or exceed the academic standards acceptable for licensure in Canada.

[2] The equivalent of the P.Eng. for francophones in Quebec and New Brunswick is the ing., while Eng. is used in Quebec for anglophones.

[3] Citizenship and Immigration Canada requirements, *FC2I Final Report from Phase I*, p. 8.

[4] One year of Canadian work experience is required to obtain a P.Eng./ing.

[5] FC2I was fully funded by Human Resources and Social Development Canada (HRSDC), which was Human Resources and Skills Development Canada at the time.

[6] The exception to this is Quebec, where language standards are set by the provincial government.

