

## QUALIFYING WORK EXPERIENCE REQUIREMENTS

APGO will assess each applicant on the individual merits presented in the application against each of the five quality-based criteria as outlined in the Registration Regulation (O. Reg. 59/01 amended to O. Reg. 378/01 (the "Registration Regulation"), s. 9.3 (1)):

- practical experience in the application of geoscience theory;
- practical experience in the understanding of geoscience processes and systems;
- management of geoscience projects;
- proficiency in communication;
- awareness of societal implications of geoscience.

An applicant for registration as a professional geoscientist is required to demonstrate at least 4 years (48 months cumulative) of verifiable and acceptable work experience. The applicant may be granted up to 12 months credit for pre-graduation experience gained prior to receiving a B.Sc. degree, up to 12 months additional credit for work experience gained during a M.Sc. program (with thesis) and a further 12 months credit for work experience gained during a Ph.D. program. Postgraduate research-related experience credits will not be granted for course work or exceed actual time spent to complete degree requirements.

The applicant must confirm that at least 12 months of the work experience have been obtained in Canada or in a Canadian work environment or an equivalent satisfactory to the Registration Committee to qualify for admission. This experience must be in addition to that obtained at the pre-graduation stage and/or granted for the postgraduate degree credits. Time related to the research and/or thesis portion of a postgraduate degree may be considered to help meet the requirement for geoscience work experience in a Canadian jurisdiction if the work has been conducted under the supervision of a professional geoscientist.

The referees that you select will be asked to validate the work experience statements.

## CRITERIA FOR ACCEPTABLE QUALIFYING WORK EXPERIENCE

An applicant will have obtained work experience wherein knowledge of geoscience theory is combined with an awareness of the necessity for accuracy, thoroughness and critical thought in all phases of geoscience practice. To supplement knowledge of geoscience theory, the applicant must demonstrate an exposure to, and practical experience in each of the broad areas of practical techniques, management, communication, and the societal implications of the geoscience profession.

An applicant is required by the Registration Regulation, s. 9.3 (1) to demonstrate qualifying work experience in each of the following five areas:

### 1. Application of Geoscience Theory and Practical Work Experience

An applicant's practical work experience should include some application of geoscience theory in each of the following five areas:

- (a) *development and implementation*
  - of field and/or laboratory investigation programs; including gathering of field and laboratory observations and data.
- (b) *analysis*
  - analysis of primary observations and data;
  - analysis of scope of field operations and/or laboratory conditions;
  - spatial and temporal analysis of data;
  - feasibility assessment;
  - analysis of performance assessment;
  - analysis of technical merit of project;

- analysis of safety and environmental issues;
  - technology assessment;
  - economic assessment;
  - reliability or uncertainty analysis; or
  - analysis of quality assurance and quality control program.
- (c) *integration and synthesis*
- identification of geoscientific components, including data specification or functionality;
  - project specification and organization;
  - analytical component selection;
  - integration of components and sub-systems into larger geoscientific systems;
  - evaluation, reliability and uncertainty factors in data;
  - technology of data processing and interpretation;
  - human and environmental factors;
  - societal implications of the resultant activity or project; or
  - quality improvements.
- (d) *testing methods*
- devising testing methodologies and techniques;
  - verifying functional specifications and testing efficiency;
  - commissioning, assessing and verifying new technology; or
  - verification of project technology; and
- (e) *implementation methods*
- application of technology;
  - data processing technology and interpretation;
  - optimization techniques;
  - process flow and time studies;
  - implementation of quality control and assurance;
  - cost/benefit analysis;
  - economic evaluation;
  - safety and environmental issues; or
  - evaluation and recommendations.

## 2. Understanding of Geoscience Process and Systems

An applicant should have obtained practical geoscience work experience in each of the following three areas:

- (a) *an understanding of the function of components of geoscientific work as part of the geosystem. An applicant may have obtained such an understanding through:*
- performance of field work;
  - visits to geoscientific operations;
  - experience in the merits of reliability and uncertainties;
  - understanding of the roles and limitations of computers and software;
  - understanding of externally imposed factors; or
  - understanding of the relationship of tasks to other activities or the end use.
- (b) *an understanding of the limitations of practical geoscience and related human systems in achieving desired goals. An applicant must demonstrate an understanding of:*
- limitations of technical methods;
  - limits of investigative and sampling procedures;
  - uncertainties;
  - interpretation;
  - interpolation;
  - the ability to predict;

- project operating and maintenance philosophies; or
  - the difficulties of sampling, time, and project work flow.
- (c) *an understanding of the significance of time in geoscientific processes and an appreciation for the sequences and rates of natural occurrence of geoscientific processes in the natural environment.*

3. Management of Geoscience

An applicant should have obtained experience in the management of geoscientific projects. Such work experience may include the actual management of projects, supervision of staff, general exposure to a business environment, and management of geoscientific technology. Components of management may involve any of the following:

- (a) *planning:*
- identification of technical requirements,
  - development of concepts;
  - evaluation of alternative methods; or
  - assessment of required resources in order to plan for the societal and environmental ramifications of project implementation.
- (b) *scheduling:*
- establishing interactions and constraints;
  - developing activity or task schedules;
  - allocating resources;
  - assessing the impact of delays; or
  - determining and assessing broader project interactions with other projects and the market place.
- (c) *budgeting:*
- developing both conceptual and detailed budgets;
  - identifying labour, materials and overhead; or
  - assessing risk of cost escalation, and ongoing review of budgets in light of changes.
- (d) *supervision:*
- demonstrating leadership capabilities;
  - organising human resources;
  - motivating teams; or
  - managing technology.
- (e) *project control:*
- an understanding of the elements of tasks in a greater whole;
  - co-ordinating phases of project work;
  - monitoring expenditures and schedules;
  - recommending or taking appropriate corrective action when required; or
  - activity rates and scheduling of a geoscientific project in relation to equipment.
- (f) *an understanding of risk assessment as it relates to:*
- personnel;
  - equipment and system performance;
  - technology;
  - product performance;
  - accuracy of project results;
  - geoscientific hazard identification; or
  - field equipment breakdown and wear out.

- (g) *knowledge and understanding of codes, standards, regulations and laws that govern applicable professional geoscientific activities, overall project activities and end uses of geoscientific activities.*

#### 4. Communication Skills

An applicant should have a proficiency in both oral and written communication skills. An applicant shall provide, if requested by the Registrar and/or Registration Committee, examples of having fluency skills in the following areas:

- (a) *written work:*
- correspondence;
  - briefs;
  - reports;
  - documents;
  - publications; and
- (b) *presentations:*
- to co-workers, supervisors and senior management;
  - to clients and/or regulatory authorities;
  - at workshops and conferences of peers;
  - to the general public.

#### 5. Awareness of Societal Implications of Geoscience

An applicant should have obtained work experience that recognizes societal implications of geoscience practice. An applicant must demonstrate an awareness of economic, safety, environmental or societal consequences with respect to such individual's work experience.

An applicant's work experience shall include, but not be limited to, an awareness of and responsibility for:

- (a) the necessity for accuracy, thoroughness and critical thought in all phases and levels of geoscience;
- (b) the recognition of the value or benefits to society of accuracy in geoscience operations, end products, reports, opinions and assessments to the public;
- (c) the safeguards in place to protect the public interest and identify and mitigate adverse impacts;
- (d) the relationship between the planet Earth, geoscience activity and the public at large;
- (e) a demonstrated interest and involvement in broader societal implications of geoscience; and
- (f) the significant role of regulatory agencies on the practice of geoscience.

#### Other Experience Considerations

In addition to providing information on the above noted experience criteria, the applicant may submit, in writing, any other pertinent information with respect to additional experience or circumstances for consideration of the Registrar and/or the Registration Committee.