ACCEPTABLE GEOSCIENTIFIC WORK EXPERIENCE

Council has defined acceptable geoscientific work experience as:

- comprising the practice of professional geoscience as defined in the Engineering and Geoscientific Professions Act;
- including the application of theory;
- providing exposure to or experience under the general headings of practical experience, management, communication, professionalism and ethical responsibilities, and the social implications of geoscience;
- being obtained under the guidance and supervision of a professional geoscientist who assumes all responsibility for the technical quality of the work; and

At least 48 months' experience is required.

At least twelve months of the required work experience must have been obtained in Canada or in a Canadian environment.

Up to six months' geoscience-related work (e.g. training, technologist-level work, etc.) may be included in the 48 months. In exceptional circumstances, up to 12 months' pre-graduation work experience may also be included in the 48 months, if it satisfies the criteria.

For all applicants, the nature and quality of the work experience are the primary requirements. The time required to obtain the necessary experience may exceed the four-year minimum.

APEGM
NATURE OF ACCEPTABLE GEOSCIENTIFIC WORK EXPERIENCE

Introduction

At an absolute minimum, the applicant's work experience must include the following major areas:

- Application of Theory.
- Practical Experience.
- Management.
- Communication Skills.
- Professional and Ethical Responsibilities.
- Social Implications of Geoscience.

Exposure to these six areas may be obtained by: on-the-job training, volunteer work, appropriate courses, participation in the activities of technical societies, etc. The applicant must show progression in technical capability, responsibility, maturity of judgment, and communication proficiency. Evidence of both professional and personal development will be sought.

Application of Theory

The application of geoscience theory is essential to earning professional registration. To be accepted, a candidate's experience must include active and responsible participation in several aspects of geoscience:

(1) **Geoscience training and familiarization**.

(2) **Technical geoscience experience.**

(3) **Development of geological concepts**, (e.g. preparation of reports concerning deposits of rocks, minerals, or other naturally-occurring earth materials).

(4) **Mapping and systematic geoscience evaluations** (with specific reference to bedrock, unconsolidated earth materials, and/or snow, ice, ground-water, surface water and constituents thereof).

(5) **Identification of geological hazards** and the risk to the public and the environment.

Practical Experience

Practical experience should provide the applicant with opportunities to implement geoscience investigations and to experience the practical limitations of real systems. Practical experience should include:

(1) **Employment at/deployment to active field sites,** to experience the practical application of geoscience principles and become familiar with safety issues in the workplace. Examples of existing geoscience projects include exploration camps, drilling rigs, mines, quarries, geophysical exploration projects, environmental assessment projects, and soil and ground-water remediation projects.

(2) **Application of equipment to geoscience,** including the merits of reliability, the role of computer software, and the relationship between the objective of a geoscience investigation and the means to achieve that objective.

(3) **Opportunities to observe and experience the limiting factors of practical geoscience,** including, for example, the effects of climate and weather, scheduling, logistics, financial and budgetary constraints, and regulatory considerations on the implementation of geoscience programs, as well as the practical limits of geoscience techniques, and the development of reasonable expectations for the performance of equipment, systems, and people engaged in geoscience projects.

Management

While it is recognized that most Geoscientists-in-Training will have limited opportunity to become involved in the management of geoscience projects, the

assumption of increased responsibility is an important aspect of qualifying experience, as is a general exposure to the business environment.

Management in geoscience includes the supervision of staff, project management, budgeting, and the socially responsible application of geoscience principles and practices. Representative management components include:

(1) **Planning:** from the identification of the objectives of a geoscience project, assessment of the people and equipment required to implement the project, assembling applicable background information, and acquiring the necessary permits and clearances from responsible authorities, through to assessing the social ramifications of project implementation. The applicant should demonstrate understanding of the maxim that Planning and Preparation Prevent Poor Performance.

(2) **Scheduling**: from establishing interactions and constraints, developing activity or task schedules, and allocation of resources, through to the assessment of delay impacts and beyond to broader aspects such as interactions with other projects and the market-place.

(3) **Budgeting**: from the development of a conceptual budget and its detailed counterpart, identifying labour, materials and overhead, through to risk assessment of cost escalation potential and an ongoing review of budgetary considerations in light of change.

(4) **Supervision:** including leadership and professional conduct, organization of personnel, team-building, and management of technology.

(5) **Project Control:** requiring understanding of the elements of a greater whole, co-ordination of phases of the project work, and monitoring of expenditures and schedules and taking appropriate action.

(6) **Risk Assessment:** related to operating equipment, field conditions at geoscience projects, and the social and environmental impacts of geoscience projects.

Communication Skills

The development of communication skills is an important experience requirement. Effective communications with superiors, co-workers, government regulators, clients, and the general public is essential. The candidate should demonstrate increasing proficiency in the written and oral presentation of geoscience work, including correspondence, record-keeping, and report-writing. The candidate should also demonstrate increasing proficiency in the ability to present ideas in the form of geological maps, cross-sections, and other geoscience drawings.

Professional and Ethical Responsibilities

By working under the direct supervision of a registered professional geoscientist or engineer, the applicant should be exposed to professional conduct in the workplace, should demonstrate integrity, the ability to assume responsibility, and a commitment to life-long learning, and should gain an appreciation of such ethical considerations as:

(1) **The responsibility of the geoscientist to the public.**

(2) **The responsibility of the geoscientist to the profession.**

(3) **The responsibility of the geoscientist to the client and/or employer**.

(4) **The responsibility of the geoscientist to perform work tasks with full regard for the environment and the policy and guidelines for Sustainable Development.**

Social Implications of Geoscience

The social implications of geoscience and geoscience projects are becoming an increasingly important aspect of the practice of geoscience. The work environment should provide opportunities for applicants to heighten their awareness of the potential consequences, both positive and negative, of their geoscience projects, including:

(1) **Recognition of the value or benefits of geoscience** to the public.

(2) **Recognition of safeguards in place to protect the public** and mitigate adverse impacts.

(3) **Understanding of the relationship between geoscience activity and the public at large.**

(4) **Recognition of, and involvement with, the broader social implications of geoscience.**

(5) **Recognition of the significant role of regulatory agencies** in the practice of geoscience.

The overriding objective is to provide experiences which will foster an awareness of the geoscientist's professional responsibility to guard against conditions dangerous or threatening to life, limb, property, or the environment, and to call such conditions to the attention of the authority having jurisdiction over the matter and/or the person holding professional responsibility.

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