OVERVIEW

In the interests of the public, it is essential for professionals to engage in lifelong learning.

Mandatory continuing professional development is common in many professions, including other engineering and geoscience associations in Canada.

The *Engineers and Geoscientists Regulations, 2011*, require that all professional members, limited licensees and members-in-training comply with the professional development program.

PEGNL’s (Professional Engineers and Geoscientists Newfoundland and Labrador) PD (Professional Development) program establishes an annual process and minimum benchmarks of effort.

To meet the requirements of PEGNL’s PD program, you are required to:

1. obtain professional development each year sufficient to maintain competency and currency,
2. maintain a written record of PD activities, and
3. report your detailed activity record annually.

Along with the annual license fees invoice, you will receive a PDP Report Form which must be completed and submitted by the renewal due date. PD Reporting may also be submitted through your online account at www.pegnl.ca.

Failure to submit the required information can result in being struck from the register, thereby losing both the right to practice and the right to title.
1. BOARD POLICY ON PROFESSIONAL DEVELOPMENT

1.1 General

Licensing and registration systems by professional bodies normally serve two purposes:

- The setting of standards for entry to the practice of the professions with associated admission of professionals subject to meeting the standards; and,
- The development of guidelines or standards for maintaining currency, and enhancement of knowledge and expertise of an individual’s practice, generally known as continuing professional development standards with associated monitoring of professionals on a periodic basis to establish compliancy.

A role of PEGNL as the professional body is to develop standards for continuing professional development. PEGNL also recognizes that each member’s PD is closely tied to his or her current job and long-term career objectives.

PEGNL’s policy on professional development is designed to embrace these concepts and to fulfill the requirements of the Regulations, 2011 which state that:

***See clause 34 of draft regs

1) A professional member, limited licensee or member-in-training shall comply with the requirements of the association’s professional development program policies established by the Board.

2) The Registrar shall cancel the registration of a professional member, limited licensee or member-in-training who fails to comply with subsection (1).

3) Notwithstanding subsections (1) and (2), the Board may, in PEGNL’s professional development program policies, establish circumstances under which a professional member, limited licensee or member-in-training would be exempt from the requirements of those guidelines or a provision of those guidelines.

1.2 Policy Statement

The competent practice of engineering and geoscience includes continuing education and professional development. This is interpreted to mean:

- Continuing professional development will apply to all members who are deemed to be practising engineering or geoscience, including those managing or impacting the practice of engineering or geoscience.
- Continuing professional development will apply to all members who are not practising but wish to maintain the right to practice.
- Acceptable professional development activities are defined as activities which relate to the practice of engineering and geoscience.

1.3 Practising and Non-Practising Status

At the time of admission to the professions, all professional members were engaged in the practice of either engineering or geoscience. However, as careers evolve some professional members cease to practise engineering or geoscience and take on other duties. Under the traditions established by PEGNL and all other professional engineering and geoscience licensing bodies in Canada, such persons continue to be eligible as professional members of their respective associations. For the purpose of the Professional Development Program, a distinction is drawn between those members who practise engineering and geoscience and those who do not.

1.4 Practising Members

A practising professional member, limited licensee or member-in-training is one who is engaged in work which includes engineering and geoscience, either directly or indirectly. Engineering and geoscience work is performed indirectly by supervision of others who perform such duties or through engineering and geoscience management.

To test whether the work of the member is considered to be the practice of engineering or geoscience, one must determine whether the duties performed by the member meet the definition of acceptable experience required for licensure by PEGNL’s Registration Committee.
In general, engineering work includes the application of engineering theory through analysis, design, testing methods, implementation methods and the associated application of engineering judgment gained through both theory and practice. This would also include the teaching of engineering; the development of codes and standards; or advising on the preparation of legislation and regulations which have impact on the practice of professional engineering. Engineering management is also considered to be practice. This includes supervision of other engineers, project management and the management of technology.

Similarly, geoscience work includes the application of geoscience theory through the design and implementation of geoscientific programs; compilation and processing of data; assessment and interpretation of geoscientific data; the preparation of technical reports; and the application of geoscience judgment gained through both theory and practice. This also includes the teaching of geoscience; the development of codes and standards; and advising on the preparation of legislation and regulations which have impact on the practice of professional geoscience. Geoscience management is also considered to be practice, and includes supervision of other geoscientists and project leadership.

1.5 Non-Practising Members

Those members whose work does not qualify as the practice of engineering and geoscience, as referenced above, are considered to be non-practising members.

It is recommended that members who are currently non-practising but expect to resume practice in the future comply with the Professional Development Guideline section that permits non-practising members to retain the right to practice. This will facilitate the immediate and direct access to practice at any time upon declaration to PEGNL. Non-practising members who do not maintain the right to practice as noted in the program guidelines will be subject to conditions set by PEGNL’s Registration Committee in order to resume practice.

1.6 Declaration of Status

All PEGNL members must complete the Professional Development Program (PDP) Report Form at least once a year or as often as there is a material change in the content.

Members must declare their status as practising, non-practising maintaining the right to practice, or non-practising not maintaining the right to practice. Confirmation of member status by the Registrar will be based on the description of duties provided. Appeals of decisions of the Registrar will be addressed by PEGNL’s Registration Committee.

All declarations, including non-practising, are subject to verification. Non-practising members shall retain their professional designations, and remain bound by the Engineers and Geoscientists Act, 2008, Regulations, 2011, and By-laws, including the Code of Ethics, but will not retain the right to practice. Non-practising maintaining the right to practice members can resume practicing status upon application to PEGNL and subject to approval by the registrar. Non practicing not maintaining the right to practice can resume practice upon application to PEGNL and the successful completion of a program as assigned by the Registration Committee.

1.7 Exemptions

Upon written request to the Registrar, exemptions may be available to members on parental, health or similar leave. A member’s participation in the PD program is suspended only for the approved exemption period. Members are advised to request this leave prior to the leave being taken or as soon as possible otherwise; risk non-compliance if an exemption is not approved. Members so exempted are not required to do PD for the exempted period upon expiration of the exemption period, members must resume PD activities in accordance with the PD Guideline.

Non-practising members who wish to maintain practising rights are subject to additional requirements which place greater emphasis on “technical” activities. Please refer to the Guideline portion of this document for details.
requirements of the PDP on a prorated basis. The number of required Professional Development Hours (PDHs) will be reduced in accordance with the period for which the exemption has been granted.

Members with life membership status, provided they keep the provisions of the Life Membership Agreement, are exempted from PD and the annual PD reporting.

Retired members who wish to remain members of PEGNL and do not have life membership status must declare their status as either practising, not practising maintaining the right to practice or non-practising not maintaining the right to practice and conform with the PD requirements of each category.

Any members whose exemption from the PD has been granted by PEGNL will maintain the right to use their professional designation(s) but not the right to practice during the exemption period. They will remain bound by the Engineers and Geoscientists Act, 2008, Regulations, 2011, and By-laws, including the Code of Ethics.

1.8 Policy Implementation

The procedures and requirements for compliance with this Policy are outlined in the Guideline portion of this document. The Guideline applies to all practising and non-practising members who wish to retain the right to resume their practice without being subject to examination or review.
2. PROGRAM APPLICABILITY

This guideline, and the program it describes, is for the use of:

- all practising members, including members-in-training;
- those non-practising members who wish to retain the right to resume their practice without being subject to examination or review.

All PEGNL members must complete the Professional Development Program (PDP) Report Form at least once a year or as often as there is a material change in the content. Non-practising members who do not wish to maintain their right to resume practice without further review must file a report annually, but filling out sections 1 and 2 only.

3. PROFESSIONAL DEVELOPMENT PROGRAM (PDP) PLANNING

A successful PDP will reflect a member’s present scope of practice; years of experience; length of time in their current position; the state of technology; career path; plans for the future; and other factors pertinent to their professional practice.

An effective PDP cannot be a static document that is produced, filed, and forgotten. It must be reviewed at least once a year, revised as required and any progress or changes reported to PEGNL.

The key to building and maintaining a successful PDP is firmly based in the concepts of planning, measurement and analysis. Members should assess their current inventory of education, training and experience and determine what development activities would be appropriate to help improve their professional practice. Time should be taken to ensure that the activities pursued align with development goals.

There is no prescribed route for achieving professional development goals. There are some minimums defined in the Guideline, but it is the member’s responsibility to define the goals that make sense for his/her professional development.

When building a PDP, members should do so on the basis of a multi-year rolling plan which is reviewed annually.

3.1 Goals

A Professional Development “Goal” is an end point for a set of linked activities that will result in an improvement to professional practice.

Improvement is a general term and may mean keeping current with technological changes if the practice is heavily dependent on technology, maintaining currency with changing standards or regulations, or it may mean developing new skills because of a change in the scope of practice, or moving into management.

Goals may be long-term or short-term or a combination of the two. To meet the requirements of the PDP, members should think about where they are and where they want or need to be in three years.

Members should do research and lay out their plan. That plan will be subject to change as circumstances change; however, it is valid at the time it is made.

Some examples of goals include: completing an MBA; obtaining a designation as a Certified Project Manager; developing a technical specialty within a discipline; and maintaining competency in the face of changing technology by taking a series of selected formal courses and seminars.

Once goals have been defined, activities should be identified in order to achieve these goals. The onus is on the member to define the link between the planned activity and the goals.

Some suitable activities include completing a prescribed post-secondary course; attending a series of seminars; completing industry sponsored or in-house courses; and completing a Dale Carnegie course.
3.2 Planning A Professional Development Program (PDP)

Developing an effective PDP requires thought and planning.

Begin by gathering information, such as:

- Current job description;
- Recent performance evaluation;
- Existing professional development plan;
- List of skills to be acquired;
- A body of knowledge of particular interest;
- Course listings and website addresses from educational institutions, technical and management societies, PEGNL;
- PEGNL list of technical and/or management societies; and,
- Other information as required.

**NOTE:** The above list is intended to assist the member in planning his or her program. This information is not required to be submitted to PEGNL.

Analyze the information in the context of the professional practice or in the area of competency to be maintained. Based on the results, define or modify goals; and determine which activities, such as formal or informal education and training, are required to help achieve those goals.

4. COMPLETING THE PDP FORMS

All PEGNL members must document the required information in a PDP Report Form. Completion and submission of the PD Plan is optional. Both forms are available in Word and PDF format on PEGNL’s website [www.pegnl.ca/publications], as well as in e-format through your online account, and in paper format through the PEGNL office.

4.1 PDP Report Form

All PEGNL members must complete a PDP Report Form. This form must be completed annually or more often if a material change in content occurs.

4.2 Professional Development Plan Form

Members are not required to submit a PD Plan; however, those who choose to develop and submit a PEGNL PD Plan form are eligible to claim PDH credits (see section 4.3.4 and Table 1).

**Goals**

Enter the goal(s) identified during the planning phase in the space provided. While there is no defined minimum number of goals, it is the member’s responsibility to ensure that the goals are appropriate to lead to an acceptable level of professional development in the scope of practice or to competency maintenance.

**Planned Activities**

Enter the activities which support the goal(s) on the “Planned Activities” line. Additional activities may be entered on subsequent lines. If additional goals have been identified, the format should be repeated until all of the goals have been addressed.
Activity descriptions should be detailed enough to provide a reviewer with a clear understanding of the activity. Do NOT use acronyms. More detail would be required for a self-directed program of reading and study than for a formal course offered at an educational institution.

Year Activity Planned
Check the box indicating the year when the activity will be completed.

4.3 Annual Activity Record

Completion and submission of the Annual Activity Record (AAR) section of the PDP Report form is a mandatory requirement of PEGNL’s PDP for practising members and those non-practising members who wish to maintain the right to practice. The PDP Report form must be submitted at the end of the appropriate calendar year. The deadline for submission of PDP Report forms coincides with the fees payment schedule. A blank PDP Report form is enclosed with license renewals. The form is available through PEGNL’s website: www.pegnl.ca/publications. The AAR section outlines the PD activities in which the member has participated as part of his/her professional development for that time period.

This section outlines categories of activities and levels of effort suitable for a continuing PDP. The activities listed are not all inclusive; rather they are intended to give general guidance for the selection of activities. These lists also identify activities that comprise lifelong learning.

Given the diversity of member practice, some activities may be more appropriate than others. Members should use their judgment in selecting activities that relate to their individual scope of practice and that work best for their continued learning.

4.3.1 Levels of Effort

Credible continuing professional development programs also define minimum levels of effort. The unit of measure for this effort is time, expressed as a Professional Development Hour (PDH). PEGNL recognizes seven general activity categories as contributing to continuing professional development. These are listed below, with corresponding PDHs, and summarized in Table 1 on page 11.

To encourage planning, the program has a three-year rolling time period. To meet the program requirement:

- practising members and those non-practising members who wish to maintain the right to practice must accumulate at least 240 PDHs over three years, with a minimum of 60 PDHs per year.

- included in the above level of effort, non-practising members who wish to maintain the right to practice are required to complete at least 20 PDHs of technical PD activities per year in the Formal and/or Informal categories.

- the same activity cannot be included in more than one category.

Technical PD activities are ones which include learning in either engineering or geoscience within the discipline of the member’s scope of practice.

4.3.2 Activity Categories

Continuing professional development activities should relate to one’s individual scope of practice. They may also embody some or all of the following concepts:

- application or development of technical theory;
- learning of new concepts;
- practical experience;
- management of engineering or geoscience;
- communication and business skills;
- public, community, and professional service;
- environmental implications of engineering and geoscience.

4.3.2.1 Professional Work

It is recognized that many members perform varied activities as part of their professional practice. Most members are in the direct practice of Engineering or Geoscience or are managing the direct practice of Engineering or Geoscience. Some members may be working in management positions in organizations where Engineering or
Geoscience is a factor, but they may not be directly managing Engineering or Geoscience. As an Engineer or Geoscientist, the professional brings to his or her position a degree of knowledge and skills that have been acquired through the education and experience gained in the course of his or her career. It is, therefore, appropriate to claim for Professional work in this category.

For PRACTISING members, one PDH is earned for each 15 hours of professional work within the scope of practice. A maximum of 50 PDHs per year may be claimed. Excess PDHs are NOT carried forward.

For NON-PRACTISING Members, one PDH is earned for each 30 hours of work. A maximum of 30 PDHs per year may be claimed. Excess PDHs are NOT carried forward.

4.3.2.2 Formal Activity

Formal activities are those provided as a structured course or program, often for credit, with a specific syllabus, defined learning outcomes, and sometimes with an evaluation process. Although formal activity is not specifically required, all members should strive to include some formal activities within their continuing professional development program. Delivery methods might include traditional classroom settings; or remote techniques such as written correspondence, video, or distance education. Formal activities include, but are not limited to:

- courses provided through universities, technical institutions, and colleges;
- employer training programs;
- short courses provided by technical societies, industry, or educational institutions.

One PDH is earned for every contact hour (each course attendance hour). For courses offering Continuing Education Units (CEUs), each CEU equates to 10 PDHs. A maximum of 40 PDHs per year may be claimed.

4.3.2.3 Informal Activity

Informal activities are not normally offered by an educational institution or in a structured educational environment, but nevertheless expand knowledge, skills, or judgment. They include, but are not limited to:

- self-directed study;
- attendance at conferences, technical sessions, talks, seminars, workshops, and industry trade shows;
- attendance at meetings of technical, professional, managerial associations or societies;
- structured discussion of technical or professional issues with one’s peers.

One PDH is earned for every two hours of informal activity. A maximum of 30 PDHs per year may be claimed.

4.3.2.3.1 Self-Directed Activities

PEGNL recognizes that all self-directed activities vary in content and impact, yet the result has to be reportable and the quality level measurable. Members who choose to pursue a self-directed activity, must document the planning, the learning outcomes, and their relevance and impact on their professional development, which will generally require an increased level of records and reporting.

Therefore, the purpose, structure, and intent of the activity should be defined and documented, along with how it will meet the PDP requirements. Members should define how the anticipated activity will contribute to
their professional development; how success will be measured; and which records will be retained as evidence of execution. Typically, for reading programs, members would be expected to identify the journal(s) and the general topic in the PDP.

4.3.2.4 Participation

Activities that promote peer interaction and provide exposure to new ideas and technologies both enhance the profession and serve the public interest. These activities focus on community involvement which promotes professional development skills such as leadership, communication, etc. The following are included:

- acting as a mentor to a member-in-training or other less experienced professional member, or to a technician/technologist;
- service on public bodies that draws on professional expertise;
- service on boards or committees of professional, charitable or community-based organizations;
- elected public service;
- service on standing or ad-hoc committees of technical, professional or managerial associations or societies.

NOTE: Volunteer service such as coaching sports, singing in choirs, collecting for charities are NOT acceptable forms of participation.

One PDH is earned for every two hours of participation or service. A maximum of 15 PDHs per year may be claimed.

4.3.2.5 Presentations

These are technical or professional presentations that require both preparation and presentation of material. These presentations would not normally be considered as one of the primary elements of a member’s professional practice. Presentations might occur at:

- a conference or meeting;
- a course, workshop, or seminar;
- the member’s company;
- an event sponsored by a technical or professional organization.

Five PDHs are earned for each hour of presentation (this recognizes both the preparation and presentation time). A maximum of 20 PDHs per year may be claimed.

4.3.3 Contributions to Knowledge

Activities which expand or develop the technical knowledge base in engineering and geoscience must be recognized. Contributions may include:

- development of codes and standards (one PDH per hour of committee work);
- patents (15 PDHs per patent registered);
- publication of papers in a peer-reviewed technical journal (30 PDHs per paper published);
- publication of articles in non-reviewed journals (10 PDHs per article; a maximum of 10 PDHs per year may be claimed);
- reviewing/editing papers/articles for publication (1 PDH per hour of review; a maximum of 10 PDHs per year may be claimed);
- research as part of a program of study (1 PDH for each 2 hours of research).

A maximum of 30 PDHs per year may be claimed.

4.3.4 Professional Development Plan

PEGNL’s Board of Directors believes that an effective Professional Development Program requires thought and planning. For that reason, members who prepare and submit a PD Plan are permitted to claim a credit of 5 PDHs each year.

A maximum of 5 PDHs per year may be claimed.

4.3.5 Carry Over
PDH credits accumulated in excess of the annual maximum in any category, with the exception of the Professional Work category, may be carried forward for a maximum of two years from the date of completion of the activity (see examples in Appendix III).
**Table 1**

*Professional Development Activity Categories and Levels of Effort*

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>EXAMPLES OF ACTIVITIES 1</th>
<th>PDHs/ACTIVITY HOURS</th>
<th>MAXIMUM PDHs PER YEAR 2</th>
</tr>
</thead>
</table>
| 1. Professional Work           | Practising Members, professional engineering or professional geoscience work within scope of practice.  
                           Non-Practising Members | 1 PDH/15 hours  
                           1 PDH/30 hours | 50  
                           30 |
| 2. Formal Activity 3           | Structured courses or programs, including those provided by universities, colleges, industry and technical societies, etc. | 1 PDH/Contact Hour | 40 |
| 3. Informal Activity           | Unstructured courses; self-directed study; conferences; technical sessions; seminars; technical, professional & management association meetings; structured technical or professional discussions, etc. | 1 PDH/2 Hours | 30 |
| 4. Participation               | Mentoring; service on public bodies; service on professional, charitable or other community-based organizations; with focus on leadership and communication skills. | 1 PDH/2 Hours | 15 |
| 5. Presentations               | Technical and professional presentations at conferences, meetings, workshops, seminars, courses, etc. which are not the primary element of the member’s professional practice. | 5 PDH/each hour of Presentation | 20 |
| 6. Contributions to Knowledge  | Activities that expand or develop technical knowledge such as development of codes and standards, patents, published papers and articles, editing papers, research, etc. | See Section 4.3.3 | 30 |
| 7. Professional Development Plan | Preparation and submission of a PD Plan using the form included in the Appendices of this Guideline. | See Section 4.3.4 | 5 |

**NOTES:**

1 See Section 5, Keeping Records & Reporting for more details.
2 PDHs earned in excess of yearly maximums may be carried forward for two years in all categories except in the Professional Work category.
3 For courses rated in continuing education units (CEUs), 1 CEU=10 PDHs.
5. KEEPING RECORDS & REPORTING

Members are required to maintain a complete record of their continuing professional development program. Although submission of detailed documentation is upon request, all members are expected to maintain a detailed professional development file. In addition to maintaining copies of previously completed PDP Report forms, this file should also contain such documentation as registration forms; course syllabi; detailed lists of self-study materials; specific dates and other information about seminars, workshops, trade shows, presentations. These are examples of the information that one might be asked to provide in the event of an audit. **All documentation should be retained for at least three years.**

Refer to Section 4 for additional information on the PDP Report form and the PD Plan form. It is recommended that information be entered on the PDP Report form as professional development activities occur. Blank forms are available and can be accessed through PEGNL’s website. Samples of completed forms are included in Appendix III.

6. ROLE OF THE EMPLOYER

The employer has a role to play in Professional Development, and Permit to Practice holders have an obligation to ensure that professionals in their employ maintain and improve their skills. All employers of professionals are encouraged to support the continuing professional development efforts of members. Members are encouraged to discuss their programs and plans with their employers or mentors. Through discussion and mutual agreement, the employer and professional can decide on professional development requirements and the type and level of employer support. Employer support will result in an employee with an ongoing interest in life-long learning which, in turn, provides increased value and commitment to the company.

Among other things, employer support can include:

- consultation with the employee during development of the employee’s program;
- provision of learning opportunities;
- assistance in developing job expectations and responsibilities;
- periodic review of employee performance and progress;
- assistance in documenting activities and levels of effort through company performance management systems;
- financial support of activities;
- allowing time to participate in activities;
- encouragement of professional development of employees;
- encouragement of employee life-long learning.

Even though the employer has a role to play in defining requirements, the primary responsibility for a continuing professional development program and for maintaining competence rests with the individual professional.

7. PROGRAM MONITORING

7.1 Monitoring

All PDP Report forms submitted are reviewed for general compliance by PEGNL staff. More in-depth reviews of selected individual members’ programs may be undertaken in response to this or:

- by random selection as part of an annual audit;
- as part of a review of a high-risk industry;
- when an exempted member resumes practice;
- in response to specific complaints from stakeholders;
- as part of a Practice Review or Investigation.

When reviews are initiated, members may be requested to submit additional information. Accordingly, it is very important that complete and accurate records of professional development activities are maintained. (Refer to Section 5 of this guideline). Staff and/or volunteer members or other experts may participate in the review process.

7.1.1 Annual Audit

A random audit of PDP Report forms occurs yearly. Audit selection of a small percentage of PEGNL members is conducted through a computer-generated
random selection. Those selected for audit are required to provide verification of some or all of the activities listed on their PDP Report form submission for the previous year.

7.1.2 In-depth Review

In-depth reviews confirm that the member has a meaningful continuing professional development program in place, and that the program meets the intent of the guideline. If the program is subject to an in-depth review and found to be satisfactory, the member will be so advised. If the program is found to be unsatisfactory, a request for improvement may be made and a reasonable amount of time given for that improvement. If a follow-up review is found to be unsatisfactory, the case may be referred for further action.

In accordance with the Engineers and Geoscientists Regulations, 2011, all PEGNL members are required to comply with the Professional Development program as outlined in this Guideline.

8. CONFIDENTIALITY

Submitted records are held in confidence. If a member’s program involves proprietary information, upon request, further arrangements can be made to ensure confidentiality.

9. FURTHER INFORMATION

If you have specific questions about the Professional Development Program, please contact:

Professional Engineers and Geoscientists
Newfoundland and Labrador
10 Fort William Place
Suite 203, Baine Johnston Centre
St. John’s, NL A1A 5B2

Phone: (709) 753 7714
Fax: (709) 753 6131
Email: main@pegnl.ca

You may also visit our website at www.pegnl.ca

---

Effective February 2014
# APPENDIX I

## DISCIPLINES/SUB-DISCiplINES

### ENGINEERING

<table>
<thead>
<tr>
<th>Discipline</th>
<th>Sub-disciplines</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aerospace Engineering</td>
<td>Avionics, Propulsion, Mechanical systems, Structures, Space Systems, Environmental, Aerodynamics/flight test engineering</td>
</tr>
<tr>
<td>Agricultural Engineering</td>
<td></td>
</tr>
<tr>
<td>Biosystems Engineering</td>
<td>Agricultural, Biotechnology, Fisheries/aquaculture, Environmental</td>
</tr>
<tr>
<td>Biochemical Engineering</td>
<td></td>
</tr>
<tr>
<td>Biomedical Engineering</td>
<td></td>
</tr>
<tr>
<td>Bioresource Engineering</td>
<td></td>
</tr>
<tr>
<td>Ceramic Engineering</td>
<td></td>
</tr>
<tr>
<td>Computer Engineering</td>
<td>Hardware design/architecture, Information systems/data processing, Software design, System integration</td>
</tr>
<tr>
<td>Chemical Engineering</td>
<td>Chemical, Process design or control, Advanced materials &amp; polymers, Environmental, System integration</td>
</tr>
<tr>
<td>Civil Engineering</td>
<td>Construction, Environmental, Municipal/urban, Geotechnical, Hydrotechnical, Structural, Transportation</td>
</tr>
<tr>
<td>Communications Engineering</td>
<td></td>
</tr>
<tr>
<td>Electrical Engineering</td>
<td></td>
</tr>
<tr>
<td>Electronics Engineering</td>
<td></td>
</tr>
<tr>
<td>Engineering Chemistry</td>
<td></td>
</tr>
<tr>
<td>Engineering Physics</td>
<td></td>
</tr>
<tr>
<td>Environmental Engineering</td>
<td></td>
</tr>
<tr>
<td>Food Engineering</td>
<td></td>
</tr>
<tr>
<td>Forestry Engineering</td>
<td></td>
</tr>
<tr>
<td>Geological Engineering</td>
<td>Geophysics, Geochemistry, Geology, Hydrogeology, Mining/rock mechanics, Environmental, Geotechnical</td>
</tr>
<tr>
<td>Geomatics Engineering</td>
<td></td>
</tr>
<tr>
<td>Geospatial Engineering</td>
<td></td>
</tr>
<tr>
<td>Geotechnical Engineering</td>
<td></td>
</tr>
<tr>
<td>Industrial Engineering</td>
<td>Industrial, Environmental, Production Systems</td>
</tr>
<tr>
<td>Manufacturing Engineering</td>
<td></td>
</tr>
<tr>
<td>Mechanical Engineering</td>
<td></td>
</tr>
<tr>
<td>Materials Engineering</td>
<td></td>
</tr>
<tr>
<td>Metallurgical Engineering</td>
<td>Metallurgy, Environmental</td>
</tr>
<tr>
<td>Mineral Engineering</td>
<td></td>
</tr>
<tr>
<td>Mining Engineering</td>
<td>Mining, Mineral processing, Exploration, Environmental</td>
</tr>
<tr>
<td>Naval Architectural/Ocean</td>
<td></td>
</tr>
<tr>
<td>Marine Engineering</td>
<td></td>
</tr>
<tr>
<td>Petroleum Engineering</td>
<td>Operations, Refinery, Environmental, Oil and Gas, Reservoir</td>
</tr>
<tr>
<td>Petroleum Engineering</td>
<td></td>
</tr>
<tr>
<td>Surveying Engineering</td>
<td></td>
</tr>
<tr>
<td>Systems Engineering</td>
<td></td>
</tr>
<tr>
<td>Water Resources Engineering</td>
<td></td>
</tr>
</tbody>
</table>

.../continued
PEGNL Professional Development Policy and Guideline

GEOLOGY
- General geology
- Environmental geology
- Geomorphology
- Glacial geology
- Marine geology
- Petroleum geology
- Igneous petrology
- Metamorphic petrology
- Sedimentary petrology
- Stratigraphy
- Structural geology
- Tectonics
- Atmospheric sciences
- Land use/urban geology

Economic Geology
- General
- Coal
- Metals
- Non-metals
- Oil & gas
- Mineral exploration

Geochemistry
- General geochemistry
- Analytical geochemistry
- Experimental petrology/phase equilibria
- Exploration geochemistry
- Low-temperature geochemistry
- Marine geochemistry
- Organic geochemistry

Paleontology
- General paleontology
- Biostratigraphy
- Micropaleontology
- Paleobotany & palynology
- Vertebrate paleontology
- Invertebrate paleontology
- Paleobiology
- Paleocology/paleoclimatology

Hydrology
- General hydrology
- Ground water/hydrogeology
- Quantitative hydrology
- Surface waters
- Geohydrology

Soil Science
- Soil physics/hydrology
- Soil chemistry
- Mineralogy
- Pedology/classification/morphology
- Forest soils/rangelands/wetlands
- Soil biology/biochemistry

Engineering Geology
- General engineering geology
- Earthquake engineering
- Mining engineering
- Petroleum engineering
- Rock mechanics

GEOPHYSICS
- General Geophysics
- Exploration geophysics
- Geodesy
- Geomagnetism & paleomagnetism
- Gravity
- Heat flow
- Seismology
- Marine geophysics

Petroleum Geophysics
- Data acquisition
- Data processing
- Data interpretation

Environmental Geophysics
- Data acquisition
- Data processing
- Data interpretation

Mining Geophysics
- Data acquisition
- Data processing
- Data interpretation

Remote Sensing
- Data acquisition
- Data processing
- Data interpretation

OTHER OCCUPATIONS

If your area of specialization cannot be classified using one of the aforementioned descriptions, please specify.