



ASIA PACIFIC ECONOMIC COOPERATION

APEC ENGINEER REGISTER

AUSTRALIA

ASSESSMENT STATEMENT

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APEC ENGINEER REGISTER

AUSTRALIA

ASSESSMENT STATEMENT

APPLICABLE TO ALL STATED DISCIPLINES OF ENGINEERING

PREAMBLE

The APEC Human Resources Development Working Group Steering Committee for mutual recognition of professional engineers developed the initiative for the APEC Engineer Register over the period 1997 – 1998.

The intent of the APEC Engineer Register is to recognise the equivalencies in the qualifications and experience of practising professional engineers in the participating economies and to facilitate trade in engineering services between those participating economies.

It is anticipated that engineers entered on the APEC Engineer Register will be granted a high degree of mutual exemption from further assessment when practising in any of the participating economies.

The APEC Engineer Coordinating Committee shall approve the administration of the APEC Engineer Register within the participating economies.

As required by the *APEC Engineer Framework*, the Council of the Institution of Engineers, Australia (**Engineers Australia**), has convened an APEC Engineer Monitoring Committee (**the Committee**) which includes representatives from leading stakeholders.

The Committee is a sub-committee of the National Engineering Registration Board, and shall conduct its affairs in accordance with the Terms of Reference as provided for an APEC Engineer Monitoring Committee in Appendix A, which are consistent with *Appendix IV* to the *APEC Engineer Framework*.

The Committee monitors mechanisms for determining the eligibility of professional engineers practising in Australia to be placed on the APEC Engineer Register – Australia (**the Register**) in accordance with its Terms of Reference.

This Assessment Statement for Australia has been developed by the Committee to meet the requirements of the *Draft Submission Guide for APEC Engineer Assessment* and the APEC Engineer Coordinating Committee, and shall be subject to periodic review by the Committee.

PART A APEC ENGINEER MONITORING COMMITTEE - AUSTRALIA

The Committee comprises:

Chairman

Mr W Mike Marley FIEAust CPEng
Chairman of the National Professional Engineers Registration Board

Members

Mr Peter Godfrey FIEAust CPEng
Engineers Australia National Vice President Engineering Practice

Professor Robert E Melchers FIEAust CPEng
Chairman of the College of Structural Engineers, 1996 to 1998

Mr Stephen R Gilchrist CEng FCIBSE FIEAust CPEng
President of the Society for Building Services Engineering, 1997 to 2000

Mr Barry Gear AO HonFIEAust CPEng
Chairman of the National Professional Engineers Registration Board, 1998 - 2002
President the Institution of Engineers Australia, 1997
Representing Engineers Australia

Mr Doug Goad MIEAust CPEng
Representing the Association of Consulting Engineers Australia

Ms Peta Perring
Representing the Board of Professional Engineers of Queensland

Director of the Professional Recognition Unit.
Representing the Commonwealth Department of Education, Science and Training

Registrar and Contact Person

Mr Michael Bevan FIEAust CPEng
Associate Director Registration
Engineers Australia
11 National Circuit
BARTON ACT 2600
Australia

Facsimile INT+61 2 6273 2354
Telephone INT+61 2 6270 6523
Mobile 04 02 419575
Email MBEVAN@engineersaustralia.org.au

PART B ASSESSMENT MECHANISMS

The Institution of Engineers, Australia (Engineers Australia) shall be the assessing body for qualifications and experience normally required for applicants seeking registration as APEC Engineers. Engineers Australia was formed in 1919, granted a Royal Charter in 1938, and now operates under the terms of its most recently updated supplemental Royal Charter, granted in 1998. It has 70,000 members and is governed by its members, subject to a Royal Charter and Bye Laws, through elected representatives at the National, State and Territory, and regional level.

Engineers Australia maintains at least one office in each State and Territory and a National Office in Canberra. The average staffing level for the organisation is approximately 150 Australia wide. National Office staff provides additional support for particular programs. Disciplinary matters will also be dealt with nationally, with administrative support from the National Office.

The assessment mechanisms described use generic terms applicable to all engineering disciplines. The defining of the technical knowledge and practice requirements for assessment is vested in Engineers Australia National Accredited Assessors. Assessors function within the mechanisms approved by the Engineers Australia Council. Guidance for applicants and assessors is available in the *Handbook for APEC Engineer Registration with supplement referring to IntPE (Aus)* published by Engineers Australia.

B.1 Accreditation or Recognition of Higher Engineering Education Courses

An applicant for registration shall possess a qualification that shall have satisfied the requirements of one of the assessment mechanisms described in B.1.1 to B.1.3.

B.1.1 Assessment mechanisms

Assessment mechanisms for the recognition of higher engineering education courses are prescribed by Engineers Australia in the *Accreditation Management System*: <http://www.engineersaustralia.org.au/education/program-accreditation/accreditation-management-system/accreditation-management-system.cfm>

This document provides guidance for improved quality assurance by universities, the need for faculties of engineering to focus on the outcomes and how to accommodate the growing diversity in higher engineering education courses. A summary of the mechanism for accrediting engineering courses is provided at Appendix B.

B.1.2 Alternative assessment mechanisms

Applicants with non-Australian academic qualifications are assessed by Engineers Australia to satisfy the competencies described in *Overseas Qualification Assessment Kit*: available from <http://www.engineersaustralia.org.au/index.cfm?1EA8911B-D027-F90B-9CC2-1CB9B12883C5> . The international agreement between Engineers Australia and other higher engineering education accreditation parties, known as the *Recognition of Equivalency of Accredited Engineering Education Programs Leading to the Engineering Degree*: http://www.washingtonaccord.org/wash_accord_agreement.html and simply referred to as the *Washington Accord*, provides for the mutual recognition of academic qualifications accredited by all the signatories.

Applicants not holding an accredited or recognised qualification or other non-Australian qualification are assessed by Engineers Australia to satisfy the competencies described in the *Guide to Assessment of Eligibility for Membership (Stage 1 Competency) for Candidates not Holding an Accredited or Recognised Qualification and Australian Engineering Competency Standards Stage 1, February 2004*

<http://www.engineersaustralia.org.au/ieaust/index.cfm?3D0D4566-DEB0-1AC4-F916-8AA936CB7041> .

B.1.3 Superseded assessment mechanisms

Superseded assessment mechanisms for higher engineering education courses are recognised for the eligibility of applicants seeking registration on the Register and where the applicant is a member of Engineers Australia.

The recognised superseded assessment mechanisms are:

- | | |
|-------------------|---|
| 1964 – 1997 | Engineers Australia’s former accreditation system for Australian engineering courses as approved by the Engineers Australia Council. |
| Pre 1983 – 1998 | Engineers Australia’s former Test by Examination for foreign engineer graduates, where the standard of the course is not recognised for all graduates, as approved by the Engineers Australia Council. |
| Circa 1990 – 1997 | Foreign higher education engineering courses assessed, or visited, by suitably qualified academics or engineering practitioners, recommended to the Foreign Qualifications Board, and as approved by the Engineers Australia Council. |
| Circa 1990 – 1998 | Engineers Australia’s former recognition system for Australian four-year engineering related science courses plus assessed two years engineering experience as approved by the Engineers Australia Council. |

B.1.4 Contact person

The Engineers Australia contact person for advice on accreditation and recognition of higher engineering education courses in Australia is:

Associate Director Accreditation
Engineers Australia
11 National Circuit
BARTON ACT 2600
Australia

Facsimile INT+61 2 6273 2354
Telephone INT+61 2 6270 6555
Web Site <http://www.engineersaustralia.org.au/>

B.2 Assessment for Independent Practice

The Engineers Australia Assessment process requires a candidate to first conduct a self-assessment against established generic competency standards, then to prepare an engineering practice report and finally to attend a Professional Interview. Assessment is performed by an assessment panel comprising an assessor and two interviewers; one from the candidate's discipline and one from the candidate's field of activity. The Applicants Handbook contains a procedure, relevant competency standards and an application form. The Applicants Handbook for Chartered Professional Engineers (CPEng)...is available on <http://www.engineersaustralia.org.au/education/chartered-status/chartered-status.cfm> . This handbook is for all applicants, even if they do not want to join Engineers Australia.

B.2.1 Assessment mechanisms for independent practice in engineering as approved by the Engineers Australia Council

Australian Assessed and Approved

The Engineers Australia Council approved a competency based assessment system for professional engineers in 1994. Applicants who demonstrate successfully that they satisfy the requirements for Stage 2 Professional Engineer are approved for independent practice by Engineers Australia. Competencies are assessed in accordance with the *National Competency Standards for Professional Engineers Stages 1 and 2* (1993) or in accordance with the *National Generic Competency Standards for Stage 2 Professional Engineers* (2004).

An application for Chartered Professional Engineer status and registration on the National Professional Engineers Register comprises the following documentary evidence:

- A completed and signed application form
- An engineering practice report (EPR) duly authenticated by a CPEng or Professional Engineer with equivalent experience and standing
- A detailed Curriculum Vitae indicating employment history, responsibilities and achievements
- A record of continuing professional development (e.g. formal education and training, seminars, conferences, presentations and papers, private reading, etc.)
- A certified copy of qualifications which meet the academic requirements of an accredited professional engineering degree in Australia or equivalent.

When the EPR is assessed as satisfactory, the candidate is invited to a one-hour Professional Interview (PI). The PI is essentially a peer review of the competencies claimed. Chartered Members of Engineers Australia in the selected engineering discipline will conduct the PI. The Engineers Australia Accredited Assessor who has assessed the EPR will also be present but mainly as an adviser to the interviewers.

At the start of the PI the candidate makes an uninterrupted fifteen-minute presentation in support of the application. During the remainder of the PI the candidate is expected to discuss the defining activities pertaining to the selected elements of competency.

Candidates must be prepared to answer questions on the Engineers Australia Code of Ethics and contemporary engineering issues such as the environment and sustainability. If there are points that require clarification, candidates may be requested to undertake a Technical Assignment at the completion of the Professional Interview.

The PI takes longer if registration in a specific area of practice is required. In this situation, the Assessment Panel has to be satisfied that the candidate has:

- met the CPEng competencies in a general area of practice and
- provided evidence of competent practice in the specific area.

Practising Professional Engineers in Australia are expected to be able to communicate effectively in the English language. Competencies in English will be assessed both during the PI and in the assessment of the engineering practice report.

Foreign Assessed and Approved

The Committee has resolved to recognise the approval for independent practice of foreign engineers operating under international agreements to which Engineers Australia is a signatory. Such foreign engineers must have been assessed and approved for independent practice within their own country by their own institution. The international agreement must also validate the eligibility of the foreign engineer for recognition in Australia to the level of Stage 2 Professional Engineers in accordance with the *Australian Engineering Competency Standards*.

B.2.2 Assessment mechanisms for independent practice in engineering as approved by the Board of Professional Engineers of Queensland

Applicants for registration as RPEQ must demonstrate to the Board of Professional Engineers of Queensland that they satisfy the requirements for registration prescribed in the *Queensland Professional Engineers Act (2002)*.

The requirements of the Queensland Act are that the person must be fit to practise as a professional engineer, hold a degree or other qualification in engineering prescribed in regulations and competencies prescribed in regulation. (Regulations are being drafted at the time of this revision.)

B.2.3 Superseded assessment mechanism for independent practice in engineering

Applicants seeking registration on the Register and who have satisfied the requirements of a superseded assessment mechanism of Engineers Australia and who can show they have maintained an acceptable level of CPD will be deemed to be eligible for recognition in independent engineering practice.

Before 1 August 1988 under the Engineers Australia Royal Charter and Bye laws

Qualified applicants were recognised as experienced practitioners for independent practice on the basis of the endorsement of proposer and seconder. A proposer and a seconder were each required to certify that they were familiar with the applicant's work, over a period of three years subsequent to their graduation in engineering, and considered the applicant suitable for membership of Engineers Australia. An interview was conducted only where details of the application were unclear.

For the period from 1 August 1988 to 31 December 1994 under the Engineers Australia Membership Regulations

Qualified applicants required the satisfactory endorsement of a proposer and seconder, each of whom could certify that they were familiar with the applicant's work over a period of three years subsequent to their graduation in engineering. Where the applicant was endorsed

as suitable for Engineers Australia membership, the applicant was required to attend a professional interview, normally conducted by professional engineers in the applicant's discipline. The interview panels made recommendations as to full membership (MIEAust CPEng) of Engineers Australia and membership of the relevant college (of an engineering discipline).

B.3 Specific Assessment Requirements for an APEC Engineer

Specific assessment mechanisms for the various engineering disciplines on the Register that are additional to the competency based assessment system are described in the *Handbook for APEC Engineer Registration with supplement referring to IntPE (Aus)* published by Engineers Australia.

All applicants for registration on the Register shall satisfy the criteria in sections B.3.1 to B.3.4:

B.3.1 Seven years experience after graduation in a recognised engineering discipline

Engineers Australia will undertake the assessment of seven years experience after graduation in a recognised engineering discipline in accordance with the requirements described in the *Handbook for APEC Engineer Registration with supplement referring to IntPE (Aus)*. The assessment by review and/or interview shall consider the following:

A supplementary report, or review by the applicant of their original competency statement (referred to as an engineering practice report) previously submitted and accepted as supporting evidence for assessment for independent practice, highlighting the seven years experience. The report or review shall be properly verified by a CPEng or Professional Engineer with equivalent experience and standing;

Or

A report by the applicant of seven years experience after graduation in a recognised engineering discipline written in accordance with guidelines provided in the *Chartered Status Applicant's Handbook*.

B.3.2 Two years experience in responsible charge of significant engineering work

Engineers Australia shall conduct the assessment of two years experience being in a responsible position in charge of significant engineering work in accordance with the requirements described in the *Handbook for APEC Engineer Registration with supplement referring to IntPE (Aus)* and will include a review and/or interview to consider the following:

A supplementary report, or review, by the applicant of their original competency statement (referred to as an engineering practice report) previously submitted and accepted as supporting evidence of independent practice, highlighting the level of responsibility for, and significance of, the engineering work. The report or review shall be properly verified by a CPEng or Professional Engineer with equivalent experience and standing;

Or

A report by the applicant on the level of responsibility for, and significance of, two years experience in responsible charge of significant engineering work, which must be properly verified by a CPEng or Professional Engineer with equivalent experience and standing.

Significant engineering work shall have required the exercise of independent engineering judgment. The projects or programs concerned shall have been substantial in duration, cost, and complexity, and the applicant shall have been personally accountable for their success or failure.

In general, applicants shall have been in *responsible charge of significant engineering work* when they have:

- planned, designed, coordinated and executed a small engineering project; or
- undertaken part of a larger engineering project based on an understanding of the whole project; or
- led novel, complex and/or multidisciplinary work associated with an engineering project.

The specified period of two years may, in some instances, have been completed in the course of the seven years practical experience since graduation. The requirements of sections B.3.1 and B.3.2 should normally be satisfied by supporting evidence, presented in a single report, addressing both criteria.

Fellows of Engineers Australia (FIEAust CPEng) who are registered on NPER in an area of practice that corresponds with an approved discipline of engineering will be deemed to have satisfied the requirements for seven years experience since graduation and the two years in responsible charge of significant engineering work.

B.3.3 Continuing professional development

A person on the Register shall be required to invest in continuing professional development to satisfy the Engineers Australia requirements as described in the *Chartered Member Continuing Professional Development (CPD) Compliance Policy* available from http://www.engineersaustralia.org.au/member-services/engineering.-its-all-in-the-detail/changes-to-cpd-requirements---what-are-they-and-what-do-they-mean/changes-to-cpd-requirements---what-are-they-and-what-do-they-mean_home.cfm

B.3.4 Code of conduct

The Committee has resolved that all applicants seeking registration on the Register, whether Engineers Australia members or not, shall agree to be bound by the Engineers Australia *Code of Ethics* available from http://www.engineersaustralia.org.au/about-us/discipline-complaints/code-of-ethics/code-of-ethics_home.cfm.

The Committee has resolved that Engineers Australia shall deal with any complaint against a person on the Register received in writing by the Committee, or any of its Members, in accordance with the current *Disciplinary Regulations*:
<http://www.engineersaustralia.org.au/index.cfm?1F163B03-B570-3166-42F9-FCAC67E2DA67>

B.4 Audit of APEC Engineers

The Committee has resolved that Engineers Australia shall be the body authorised to audit persons on the Register.

The Committee has resolved that any person on the Register may be subject to random audit by an auditor, accredited by Engineers Australia, of their current curriculum vitae and records of continuing professional development over the immediate past three year period.

PART C ENGINEERING DISCIPLINES

The Committee has resolved to support the registration of engineers in disciplines that correspond to general areas of practice on the National Professional Engineers Register (NPER) which is administered by Engineers Australia.

The following descriptions provide an indication of the general areas of practice in which an APEC Engineer may be registered on the Register in Australia. Candidates shall satisfy the requirements of section B3 in relation to each area of practice in which they apply to be registered on the Register.

Aerospace Engineering

Indicative area of practice

Aerospace Engineers are concerned with aerodynamics and performance, aircraft stores, airports and ground systems, airways systems, cabin environment, cockpit ergonomics, communications systems, computer systems and avionics, crashworthiness, electrical systems, electronic warfare, environmental effects, fire safety and control, flight management systems, flight simulators, flight test recording, fuels and lubricants, hydraulic systems, maintenance, materials and manufacturing, navigation systems, noise and acoustic effects, propulsion system, radar systems, risk management, satellite systems, software, structures, test flight control, tracking systems, vehicle dynamics, and vehicle launch and recovery.

Bio-Engineering

Indicative area of practice

The discipline of Bio-engineering, although having a broader definition in some other APEC economies, is confined to the area of practice of Biomedical Engineering for registration on the Australian APEC Engineer Register.

Biomedical Engineers are concerned with research, design, development, evaluation, manufacture, installation, operation, maintenance, management and control of biomedical devices, facilities and equipment designed to support and enhance human life and help individuals to overcome physical disabilities, the planning and assessment of medical procedures and the development of related data handling facilities. Applicants must have significant training in the life sciences in addition to their engineering qualification. This is typically 80 hours of formal education or equivalent, which may have been part of their undergraduate course or undertaken post graduation. Applicants must also hold, or have held, a position of responsibility in biomedical engineering.

Building Services Engineering

Indicative area of practice

Building Services Engineering is multi-disciplinary in nature. By definition, it is "the practice of the art and science of engineering for the purpose of achieving optimal integrated building systems incorporating environmental control and safety provisions for the comfort and wellbeing of the occupants of the built environment".

Building Services Engineering is concerned with aspects of the built environment, involving air conditioning and mechanical ventilation, electrical light and power, fire services, Fire Safety Engineering, water and waste services, data and communications, security and access control, vertical transportation, acoustics in buildings and energy management.

Chemical Engineering

Indicative area of practice

Chemical Engineers are concerned with research, teaching, design, development, economics, manufacture, installation, operation, sales, maintenance and management of commercial scale chemical plants and process systems, industrial processing and fabrication of products undergoing chemical and/or physical changes. Chemical Engineering is applied to materials for construction, process systems and equipment for instrumentation and control, and protection of the environment. Applicants must have experience in the safety aspects of design and/or operations. In addition they must have experience in two of the following functions involving process systems and equipment: design, evaluation, operation, materials selection and fabrication.

Civil Engineering

Indicative area of practice

Civil Engineers are concerned with materials such as steel, concrete, timber, earth and rock, and with their application in the research, design, development, manufacture, construction, operation, maintenance and management of hydraulic, structural, environmental and systems aspects of infrastructure works and services such as water, sewerage, transport, urban development and municipal services, and with building and construction for other infrastructure industries.

Electrical Engineering

Indicative area of practice

Electrical Engineers are concerned with research, design, development, manufacture, installation, operation, maintenance and management of equipment, plant and systems within the electrical, electronic, communication and computer systems areas. Electrical Engineering is applied to electrical power generation, transmission, distribution and utilisation, manufacture, instrumentation and control in industry, communications networks, electronic plant and equipment, integration and control of computer systems.

Environmental Engineering

Indicative area of practice

Environmental Engineers use their specialised training and experience to work closely with professional engineers from other disciplines to achieve environmentally sustainable outcomes. Collectively and holistically, they apply an integrated approach to technical, economic, social, legal and scientific considerations. Environmental Engineers work on new or existing projects that require some form of improvement, remediation or rehabilitation in the natural and built environment. Environmental Engineers work in many areas of environmental protection including water quality, waste water and storm water management, waste management, contaminated land remediation, natural resource management, air quality, noise management, greenhouse gas emission reduction, environmental management systems, environmental information systems, social impact analysis and environmental risk assessment. While all engineers have a duty of care to the community on environmental matters and effects, Environmental Engineers approach issues on a multidisciplinary and integrative basis and involve other professionals where necessary.

Fire Safety Engineering

Indicative area of practice

Fire Safety Engineering is multidisciplinary in nature, having substantial relationships with building services, mechanical, electrical, electronics, chemical, structural and civil engineering and embraces an understanding of human behaviour. It is the application of engineering principles, rules and expert judgement based on a scientific appreciation of the fire phenomenon, of the effects of fire and of the reaction and behaviour of people in order to:

- save life, protect property and preserve the environment and heritage from destructive fire;
- quantify the hazards and risk of fire and its effects;
- mitigate fire damage by proper design, construction, arrangement and use of buildings, materials, structures, industrial processes and transportation systems;
- evaluate analytically the optimum protective and preventative measures, including design, installation and maintenance of active and passive fire and life safety systems, necessary to limit, within prescribed levels, the consequences of fire.

Mechanical Engineering

Indicative area of practice

Mechanical Engineering is concerned with design, development, research, evaluation, manufacture, installation, testing, operation, maintenance and management of machines, mechanical and mechatronic systems automated systems and robotic devices, thermodynamic and combustion systems, fluid and thermal energy systems, materials and manufacturing equipment and process plant and materials handling systems. This is applied to manufacturing, land, sea and air transportation, electricity generation, mining, minerals and metals processing, food, agricultural and forest products processing, thermal and environmental control systems in buildings and industry, refrigeration and air conditioning systems. Applicants must have experience in the safety aspects of design and/or operation of machines, plant, systems or processes and with noise, airborne and water borne emission controls to reduce environmental impact.

Structural Engineering

Indicative area of practice

Structural Engineers have expertise in research, planning, design, construction, inspection, monitoring, maintenance, rehabilitation and demolition of permanent and temporary structures and structural systems and their components and with associated technical, economic, environmental, aesthetic and social aspects. Structures might include buildings, bridges, in-ground structures, footings, frameworks and space frames, including those for motor vehicles, space vehicles, ships, aeroplanes and cranes, composed of any structural material including composites and novel materials.

PART D ASSESSMENT DOCUMENTS AND REPORTS

Persons on the Register are those assessed as satisfying the requirements for academic qualifications and practice in recognised engineering disciplines and the competency standards for independent engineering practice. Academic qualifications shall be in accordance with an assessment mechanism nominated in Part B section B1. Assessment for independent practice shall be in accordance with Part B sections B2 and B3. Applicants shall practise in a discipline recognised in Part C.

D.1 Guidance for reviewers

D.1.1 Guidance for Engineers Australia accredited reviewers

Members of assessment panels have made available to them a “guide for assessment panel members” which explains the responsibilities of all parties to the assessment process.

Information on the competencies sought for independent practice in specific engineering disciplines is provided by Engineers Australia to reviewers interviewing applicants.

D.1.2 Guidance for reviewers assessing applicants for the Register of Professional Engineers of Queensland

While the Board must follow the Professional Engineers Act 2002, it has a great deal of discretion in considering applications. The crucial matters are the breadth of the learning and experience. It is not sufficient for a person to have a very expert experience in specialist areas, but they still have to prove to the Board that they have breadth and length of training and experience that is fundamental to being a professional engineer. Similarly, it is the opinion of the Board that knowledge is gained predominantly by structured learning rather than from experience.

D.2 Guidelines for applicants

D.2.1 General areas of practice

Information on the competencies in general areas of practice, as approved by the Engineers Australia Council, shall be provided by Engineers Australia to applicants.

Currently, guidelines for applicants are available for the engineering disciplines described in Part C in the following documents:

- *Appendix B to the Chartered Status Applicant’s*
- *Guideline – eligibility criteria and procedures for registration in the general areas of practice that derive from Colleges*
- *Guideline – eligibility criteria and procedures for registration in the general area of practice of Environmental Engineering*
- *Guideline – eligibility criteria and procedures for registration in the general area of practice of Building Services Engineering*

- *Guideline – eligibility criteria and procedures for registration in Aerospace Engineering*
- *Guideline – eligibility criteria and procedures for recognition in the specific area of practice - Fire Safety Engineering*

D.2.2 Experience requirements for applicants seeking registration on the Register of Professional Engineers of Queensland

Applicants for registration as RPEQ must demonstrate to the Board of Professional Engineers of Queensland that they satisfy the requirements for registration prescribed in section 18 of the *Queensland Professional Engineers Act 1988*.

D.3 National Professional Engineers Register

Persons registered on the National Professional Engineers Register have satisfied the requirements for Stage 2 Professional Engineers in accordance with the *Australian Engineering Competency Standards for Stage 2 Professional Engineers*.

REFERENCES

The APEC Engineer Manual

<http://www.ieagreements.org/APEC/APECFoundation.cfm>

Handbook for APEC Engineer Registration with supplement referring to IntPE (Aus), Engineers Australia

<http://www.nerb.org.au/registers/international.cfm>

Accreditation Management System:

<http://www.engineersaustralia.org.au/education/program-accreditation/accreditation-management-system/accreditation-management-system.cfm>

Overseas Qualifications Assessment Kit:

<http://www.engineersaustralia.org.au/index.cfm?1EA8911B-D027-F90B-9CC2-1CB9B12883C5>

Australian Engineering Competency Standards Stage 1 Competency Standard for Professional Engineers:

<http://www.engineersaustralia.org.au/ieaust/index.cfm?3D0D4566-DEB0-1AC4-F916-8AA936CB7041> .

Australian Engineering Competency Standards – General Introduction and Stage 2 Competency Standards:

<http://www.engineersaustralia.org.au/education/chartered-status/chartered-status.cfm>

Chartered Status Applicant's Handbook

<http://www.engineersaustralia.org.au/education/chartered-status/chartered-status.cfm>

Chartered Member Continuing Professional Development (CPD) Compliance Policy

http://www.engineersaustralia.org.au/member-services/engineering.-its-all-in-the-detail/changes-to-cpd-requirements---what-are-they-and-what-do-they-mean/changes-to-cpd-requirements---what-are-they-and-what-do-they-mean_home.cfm

Code of Ethics, The Institution of Engineers, Australia, April 2000

http://www.engineersaustralia.org.au/about-us/discipline-complaints/code-of-ethics/code-of-ethics_home.cfm

Disciplinary Regulations, Institution of Engineers, Australia, September 1999

<http://www.engineersaustralia.org.au/index.cfm?1F163B03-B570-3166-42F9-FCAC67E2DA67>

Washington Accord, published at <http://www.washingtonaccord.org>

Professional Engineers Act (Queensland) 2002

ATTACHMENTS TO THE ASSESSMENT STATEMENT

Guide for Assessment Panel Members, Institution of Engineers Australia, revised February 2002

Guideline – eligibility criteria and procedures for registration in the general areas of practice - Environmental Engineering, Institution of Engineers, Australia, 1999

Guideline - eligibility criteria and procedures for registration in the general areas of practice - Building Services Engineering, Institution of Engineers, Australia, 1999.

Guideline – eligibility criteria and procedures for registration in Aerospace Engineering, Institution of Engineers, Australia, 2001

Guideline – eligibility criteria and procedures for recognition in the specific area of practice - Fire Safety Engineering, Institution of Engineers, Australia, 1999

International Registers Monitoring Committee - APEC Engineer

TERMS OF REFERENCE

Each Monitoring Committee:

1. develops and maintains a Register of APEC Engineers in its own economy;
2. functions as a single point of contact on all matters relating to APEC Engineers;
3. accepts and promotes the substantial equivalence in competence of all APEC Engineers;
4. advises bodies responsible for registering or licensing professional engineers accordingly;
5. provides timely and accurate information on whether individuals are APEC Engineers;
6. develops and maintains an assessment system to ensure that APEC Engineers have:
 - a) completed an accredited or recognised engineering program or assessed recognised equivalent;
 - b) been assessed within the economy as eligible for independent practice; and
 - c) gained a minimum of seven years practical experience since graduation; and
 - d) spent at least two years in responsible charge of significant engineering work; and
 - e) maintained their continuing professional development at a satisfactory level;
7. where appropriate, authorises other bodies to carry out assessments against these criteria;
8. ensures that a mechanism is available for individuals to appeal against adverse judgments;
9. audits compliance by such authorised bodies with the conditions of authorisation;
10. directly, or through authorised bodies:
 - a) audits continuing compliance by APEC Engineers with the conditions of registration; and
 - b) receives, investigates and resolves complaints against APEC Engineers; and
 - c) provides advice on professional conduct and professional practice;
11. maintains and disseminates a list of persons whose APEC Engineer registration has been cancelled;
12. submits statements to enable the Coordinating Committee to review the proposed system;
13. publishes information on its assessment procedures, criteria, systems and performance;
14. provides such other information as may be required by the Coordinating Committee;
15. maintains records and documents in a form suitable for review by other economies;
16. provides representatives to assist in reviewing other assessment systems; and
17. participates in the other deliberations of the Coordinating Committee.

MEMBERSHIP

The structure and constitution of a Monitoring Committee will naturally reflect the particular circumstances of the economy within which it is established. In general terms, the committee should include representatives from government, industry, relevant professional associations, and higher education institutions delivering engineering programs, and should be recognised as competent by the authorities responsible for registration and licensing within the economy.

In some cases, an existing board or committee may already be undertaking many of the tasks implied in the above terms of reference, and can be nominated by the economy to undertake the role of the Monitoring Committee for that economy.

While decisions on the structure and constitution of the Monitoring Committee are ultimately reserved for the economy concerned, the committee will form an important part of the overall assessment system for that economy. The statement on that system, which will be provided to the Coordinating Committee, must explain how the Monitoring Committee intends to gain access to the resources and expertise required to discharge the above Terms of Reference.

ENGINEERS AUSTRALIA

Accreditation of programs leading to the professional engineering degree as at May 2005

The professional engineering degree in Australia is normally titled Bachelor of Engineering. It is awarded on completion of programs comprising a minimum of four years of full-time study (or equivalent) following twelve years of school study. Currently some 34 universities offer such programs.

Engineers Australia (EA) evaluates programs for accreditation at the request of the offering university. Accreditation is based on specific programs, not degrees, universities, or engineering schools. Accreditation must cover all modes and pathways by which the program can be completed, including flexible delivery and partnering or offshore arrangements, and the documentation must demonstrate that the criteria have been met in all such instances.

The accreditation criteria have a dual focus. The first requires that graduates should have developed a series of attributes generic to all branches of engineering, including knowledge and skills in scientific fundamentals, analysis, communication, problem identification and formulation, design, systems thinking, sustainability, interpersonal and team skills, understanding of professional responsibility in social, ethical, commercial and global contexts, and capacity and motivation for lifelong learning. The second requires technical knowledge and competence, in breadth and depth, appropriate to the field of engineering specified in the program title. Documentation must demonstrate how the program addresses its stated objectives and assists all students to attain the required outcomes; how the assessment system ensures that each graduate has done so; how students are exposed to professional practice issues; and the methods used to invite external validation and critical comment on the program, with evidence of their effectiveness. There are stipulations about leadership, number and qualifications of staff, and adequacy of resources and facilities.

Accreditation is normally scheduled so that all programs offered by a particular school are reviewed concurrently every five years, with provision for the introduction of new programs in the intervals between general reviews. New programs that appear to meet the criteria are given provisional accreditation until the first sizeable group of students has graduated, when the program is considered for full accreditation. Existing programs may be re-accredited for up to five years, or may be given conditional accreditation for up to two years while specified shortcomings are addressed; or accreditation may be discontinued.

Membership of accreditation panels is drawn from universities, engineering industry, and Engineers Australia Colleges. A panel normally comprises from two up to six members, depending on the range of programs under consideration. Panel members are chosen in order to match expertise against the specialisations of the programs under consideration. Panels are usually structured in order to balance the membership between those with industry and academic backgrounds. Panel members meet by teleconference prior to the visit to discuss initial findings and to alert the university to any need for clarification or additional data. A further pre-visit meeting is held on the eve of the visit proper. The on-site visit normally is scheduled over a two-day period where the evaluation panel meets with senior management, the program leadership team, academic and technical staff, students and external stakeholders. Following the visit, the panel prepares a draft report, analysing performance against the accreditation criteria and presenting recommendations on accreditation.

An Accreditation Board, appointed by the Engineers Australia Council makes the final decision on accreditation, based on the recommendations of the evaluation panel and any response from the engineering school to the draft report.

There is also a consultative committee representing Engineers Australia, the Australian Council of Engineering Deans, and the Australasian Association for Engineering Education, which reviews the accreditation system and processes from time to time. Engineers Australia is a signatory to the Washington Accord