

Requirements for

APPROVED RADIO ENGINEERS

and

APPROVED RADIO CERTIFIERS

Contents, Disclaimer, Changes, Clarification and Corrections

Contents This document reflects the current practices and policies of the Radio Spectrum Management (RSM) group of the Ministry of Economic Development (the Ministry) in regard to requirements for Approved Radio Engineers and Approved Radio Certifiers (approved persons).

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Clarification and Corrections RSM will provide clarification of the information contained in this document when requested and would appreciate receiving suggestions for its improvement or advice relating to inaccuracies or ambiguities. Such matters may be emailed to RSMLicensing@med.govt.nz. Correspondence received will be acknowledged, investigated and appropriate action taken.

Amendment History		
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PIB 34 Requirements for Approved Radio Engineers and Approved Radio Certifiers

Table of Contents

1.	Introduction.....	3
2.	Statutory Requirements.....	4
3.	Requirements for Certification of Licences.....	4
4.	Principal Requirements for Approved Persons.....	5
5.	Approved Person Declaration.....	5
6.	Ethical Standards for Approved Radio Engineers and Certifiers.....	6
7.	Knowledge, Experience and Competency Standards.....	6
8.	Qualification Standards.....	8
9.	Application Process.....	9
10.	The Approval Process.....	9
11.	Audit requirements relating to Licence Certificates.....	10
12.	Records of Licence Certification.....	11
13.	Requirements for the Retention of the Approved Person Status.....	12
14.	Process for the Withdrawal of Approved Status.....	12
15.	Professional Indemnity Insurance.....	13
16.	Issues for Agreement between Approved Persons and Others.....	13
17.	Ministry Involvement in Certification Error Resolution.....	13
18.	Ministry Support for Approved Persons.....	14
19.	Approved Person Information and Calculation Resources.....	14
APPENDIX A	Application Form.....	15
APPENDIX B	Notes for the Completion of Application Form and Work History.....	16

1. Introduction

This Public Information Bulletin (PIB 34) sets out;

- the requirements for applicants wishing to become Approved Radio Engineers (ARE) and Approved Radio Certifiers (ARC) (approved persons);
- the regulatory requirements for those approved persons;
- the Ministry of Economic Development (the Ministry) process for granting or declining an application; and,
- the requirements for retaining the approved person status.

Attainment of the status of ARE entitles the approved person to;

- provide licence certificates (certify) for planned radio licences and spectrum licences;
- access to the Ministry's Spectrum Management and Registration Technology (SMART) database system for the purposes of creating planned radio licences and planned spectrum licences; and,
- use the SMART data extract tools that enables searches of radio and spectrum licences in the Register of Radio Frequencies (RRF).

Attainment of the status of ARC entitles the approved person to;

- certify planned radio licences; and,
- access to SMART for the purposes of creating planned radio licences; and,
- use the SMART data extract tool.

Approved persons must be respected and knowledgeable persons working in the radio communication engineering industry. They may be employed by the Ministry (internal engineers) or persons outside the Ministry (external engineers).

Only a natural person may be an ARE and ARC. Business, corporations or other business entities can permanently employ or contract approved persons but can not be approved persons.

2. Statutory Requirements

The Ministry's requirements for the management of the radio spectrum include;

- maximising the use of the spectrum for the benefit of all New Zealanders;
- ensuring that licensed radio services will operate with the quality of service appropriate to the services type; and,
- ensuring the spectrum is planned to meet future requirements.

To enable those requirements to be met a system of legislation and regulation has been developed and provide for separate radio licensing and spectrum licensing regimes using different frequency bands of the radio spectrum. The statutory requirements of those regimes are prescribed in:

- the Radiocommunications Act 1989 (the Act);
- the Radiocommunications Regulations 2001 (the Regulations);
- radiocommunications gazette notices; and,
- policies, plans, standards and licence certification rules published by the Ministry.

In relation to the granting and registration of a spectrum licence the statutory requirements prescribe the following;

- A spectrum licence granted by the manager of a management right must, in accordance with Part 3 of the Act, be certified by an ARE that the licence meets the requirements of sections s25(5) and s57D(5) of the Act, prior to being registered.
- A suitably qualified person can be given the ARE status pursuant to section s130 of the Act.
- The rights for the Ministry to determine that certification of a spectrum licence shall be in the form a licence certificate and included in SMART for that purpose.

In relation to the granting and registration of a radio licence the statutory requirements prescribe the following;

- A radio licence granted by the Ministry must be in accordance with Part 13 of the Act and regulation 8 of the Regulations;
- The rights for the Ministry to determine, in accordance with regulation 7(4) of the Regulations, that a radio licence applicant shall provide further information, in the form of a licence certificate that has been certified by an ARE or an ARC, prior to the granting of a radio licence; and,
- That the licence certificate shall be in the form included in SMART for that purpose.

3. Requirements for Certification of Licences

Prior to the certification of a radio licence an ARE or ARC must ensure the licence conforms to the statutory requirements and the rules published in the [PIB 38 "Radio Licence Certification Rules"](#). The PIB 38 rules identify policy, planning, and engineering requirements and include discussion relating to the application of those rules.

Prior to the certification of a spectrum licence an ARE must ensure the licence conforms to the statutory requirements, the parameters of the management right to which the spectrum licence relates, any relevant reference standards and the requirements published in the [PIB 39](#)

[“Spectrum Licence Certification Rules for Crown Management Rights”](#). The PIB 39 rules identify policy, planning, and engineering requirements and include discussion relating to the application of those rules.

The certification of spectrum licences in privately owned (non Crown) management rights is governed by the Act and the Regulations, the parameters of the management right to which the spectrum licence relates and any relevant reference standards. There are no other certification rules published for spectrum licences in the private management rights though there is general discussion in PIB 39, particularly sections 1, 2 and 3, that may assist ARE.

When certifying radio and spectrum licences approved persons must understand that as a member of the ITU New Zealand is obligated to adhere to the extent applicable to the ITU-R recommendations and ITU Radio Regulations, and has referenced them in the Act and Regulations. The particular aspects of ITU-R recommendations that are applicable in New Zealand are identified in the [PIB 38](#), [PIB 39](#) and other Ministry publications. The ITU Radio Regulations as a whole are applicable in New Zealand except where the statutory requirements (Section 2) specify otherwise.

4. Principal Requirements for Approved Persons

The role of approved persons in the certification of radio and spectrum licences is to ensure those licences comply with the statutory requirements in a manner that will maintain the radio spectrum for the benefit of all New Zealanders. Approved persons shall therefore not provide licence certificates for licences that conflict with the statutory requirements or rules published by the Ministry.

Where an approved person considers there may be conflicts between the published documents and between those documents and licensee requirements, that person shall contact the Ministry for clarification and/or adjudication.

The Ministry is required to ensure that only persons who understand and share these requirements, and have the knowledge, experience and competence to apply the statutory requirements and rules in an ethical manner will be approved persons.

5. Approved Person Declaration

Applicants for the ARE and ARC status are required to complete the form “Application for Approved Radio Engineer (ARE) or Approved Radio Certifier (ARC) Status” (see Appendix A).

Completing the form requires the applicant’s signature and identifies his/her declaration that:

- (1) The information provided in my application is not false or misleading.
- (2) I will notify the ministry (MED) of any changes of address, and other situation changes relevant to my approved person status.
- (3) I will only certify licences in regard to which I believe I have the requisite level of technical competency and in accordance with best practice.
- (4) I will only certify licences that comply with regulatory requirements and the MED published radio spectrum policy, plans and licence certification rules (PIB 38 and/or PIB 39).
- (5) I will not knowingly certify a licence where operations pursuant to that licence will be illegal.
- (6) I will not, in regard to any information that may come into my possession concerning records withheld under section 28 of the Act, divulge the information to other persons.
- (7) I will retain records relating to licence certificates I make, for a period of 7 years, and produce these on request to the MED.
- (8) I accept that my name and approval number will be published on the MED website Register of Approved AREs and ARCs
- (9) I accept the requirement that certificates I issue may be subject to audit.

This declaration, except for (6), shall be in force for the duration an ARE and ARC retains that status. The declaration in respect (6) shall remain in force in perpetuity.

Persons that do not sign the application form will not be granted the approved person status, and approved persons who knowingly do not abide by their declaration will lose the approved person status.

6. Ethical Standards for Approved Radio Engineers and Certifiers

When applying to become an approved person, applicants must provide evidence of a level of integrity that gives the Ministry the assurance that the applicant will abide by the declaration in the application form and that the work they undertake as part of their approved person activities will be completed;

- without seeking to interpret the Ministry's or other published information in a manner that could expose other licensed radio spectrum users to harmful or other interference, or otherwise limit the potential for use of the radio spectrum;
- only after seeking guidance from the Ministry on matters where the approved person considers the published information to be unclear or inconsistent, or where there is uncertainty about the impact of a proposed licence on the radio spectrum;
- only where a proposed licence will not, to the best of his/her knowledge, be used to carry out illegal activities or activities that could lead to the endangerment of life and/or property; and,
- in a manner that ensures any detrimental effects pursuant to the operation of a licence certified by them will be minimised to the extent reasonably possible.

The applicant's evidence in this regard will be the provision, with his/her application, of one written reference from a person who is well regarded in the radio communications engineering community and who is able to knowledgably and freely identify that the applicant can be expected to meet these ethical standards.

When evaluating these matters and should a concern arise, the Ministry will consider whether a lack of experience has led to the matter of concern. In this regard, the Ministry does not intend that a past isolated error should debar the granting of approved person status nor will it knowingly put at risk its responsibilities to protect the spectrum, spectrum records or processes.

Where the Ministry considers there may be ethical concerns, either with an applicant or an existing approved person, these will be discussed with the applicant/approved person and investigations undertaken to clarify the extent of those concerns.

Should the Ministry adjudge that an applicant is unlikely to be able to satisfy these requirements the ARE and ARC status will not be provided.

Should the Ministry adjudge that an existing approved person has failed to meet these requirements the ARE and ARC status will be withdrawn. The process for the withdrawal of the approved status is noted in section 14.

7. Knowledge, Experience and Competency Standards

Applicants for both ARE and ARC status are expect to have;

- (a) A knowledge of the New Zealand radio licence, management right and spectrum licence regimes, the Act and Regulations, and an awareness of Gazette Notice publications for advising changes and other requirements in relation to the regulatory requirements;
- (b) An understanding of the policies, planning, and spectrum management requirements for the radio spectrum in relation to licence and product compliance, equipment and reference standards;
- (c) A familiarity with RSM Public Information Bulletin (particularly PIB 38 and PIB 39) and other publications that provide rules and discussion of licence certification rules and related issues;
- (d) A familiarity with the RSM web site, the Ministries Business Update and News Flash facilities for advising changes and news relating to the radio spectrum;

- (e) An awareness of radio service types, associated licence types, and licence fees and payment regimes;
- (f) An awareness of the ITU-R International Radio Regulations and recommendations regimes;
- (g) A appreciation of radio technologies and their uses and limitations;
- (h) Some theoretical and practical experience of radio propagation issues, signal strength calculations, interference mechanisms and their analysis, intermodulation mechanisms, radio receiver performance criteria, transmitter technologies and parameters, antennas, feeders and ancillary devices and services;
- (i) A practical knowledge of radio site installation and ancillary equipment practices;
- (j) Familiarity with typical radio system configurations and equipment issues, standards and practices.
- (k) A more indepth knowledge of (a) to (j) above in relation to those licences individual approved persons intend to certify.
- (l) A self awareness in relation to the gaps in his/her knowledge and ability to certify licences.

Information in relation to some of the items above can be found in PIB 38, PIB 39 and other areas of the RSM web site at <http://www.rsm.govt.nz/cms>. The web site information is still developing and is not intended as a complete guide on all aspects of legislation, spectrum planning or management or radio theory and technology.

The level of knowledge, experience and competency required for an ARE is somewhat higher than that for an ARC. To illustrate the differences in expectation the Ministry has for ARE and ARC applicants the following should be noted.

Scope of knowledge and experience expected for an Approved Radio Engineer

An ARE should have a thorough understanding of both the spectrum rights framework and the radio licensing framework. He/she will be knowledgeable on the spectrum policy and planning issues related to those services for which he/she intends to provide licence certificates, and would be expected to maintain an up-to-date knowledge on new issues and be able to research and provide solutions within the scope of published radio technology on any aspect relating to the certification of a licence.

An ARE applicant is expected to have familiarity, based on practical experience, in;

- the use of different methods/tools for analysing radio path loss and radio system performance parameters, determining receiver C/I ratios, taking into account differences in bandwidths between wanted and multiple unwanted signals;
- analysing the effects of intermodulation, receiver desensing, receiver sensitivity, frequency selectivity, modulation and coding techniques;
- antenna and feeder array parameters and selection;
- the selection of radio system frequencies and components, and management and/of practical experience of their installation, commissioning and maintenance requirements;
- the resolution of radio system interference and other performance issues and their avoidance; and,
- adapting his/her knowledge and experience to the development of analysis tools, researching complex requirements and new radio technologies.

An ARE applicant will normally have degree level academic or equivalent qualifications. It is unlikely that a young graduate with less than three full years post graduate experience in the engineering aspects of radio systems would meet minimum requirements for becoming an ARE.

Scope of experience expected for an Approved Radio Certifier

An ARC should have practical knowledge of the radio licensing framework. He/she will be experienced in the technical issues associated with the radio service types appropriate to the range of radio licence certificates he/she intends to provide. In this regard, the candidate should have:

- experience in the installation, commissioning and maintenance of radio systems and equipment;
- experience in the planning of radio systems within the scope of well defined rules, standards and codes of practice, which would have included radio path loss, radio system loss and gain analysis, antenna selection, radio link and/or coverage performance design, using commonly available radio design tools, system frequency selection and component selection;
- familiarity with the causes and avoidance of radio site and system interference issues that can be caused to and result from other services:
- familiarity with consideration of adjacent and co-channel interference, and intermodulation, receiver selectivity and desensing issues;
- a practical knowledge of radio receiver and transmitter technologies and their operational and performance characteristics, particularly in relation to the impacts of radio selectivity, receiver sensitivity, modulation techniques, diversity techniques, antenna types and configurations, and their impact on radio system design and interference management; and,
- experience with the resolution of technical problems through the use of well-proven analysis techniques.

A suitable ARC applicant intending to issue certificates relating to simplex and landmobile services only will probably have somewhat less knowledge, experience and competency in these matters than an ARC dealing with the full scope of radio licensing services.

A suitable ARC applicant would be expected to have received thorough radio technology training and at least 5 years practical experience in installation, commissioning, maintaining and planning radio systems.

8. Qualification Standards

Approved Radio Engineer Qualifications

An applicant for the ARE status must normally hold a New Zealand Qualifications Authority (NZQA) level 7 qualification (Bachelor Degree or Graduate Diploma), or an equivalent qualification, in radio or telecommunications engineering. The term “equivalent” qualification can include:

- a technician membership of the Institution of Professional Engineers New Zealand (TIPENZ);
- attaining the status of Registered Engineering Associate (REA);
- other comparable qualification recognised by the New Zealand Qualifications Authority; or
- a competency assessment based on extensive professional experience (see below).

Several senior radio engineers who have acquired good radio design, commissioning and management experience over many years and who are well respected in the radio industry have been granted ARE status. In general these engineers have had in excess of 20 years radio engineering experience.

Approved Radio Certifier Qualifications

An applicant for the ARC status must hold a New Zealand Qualifications Authority (NZQA) level 4 qualification (National Certificate), or an equivalent qualification, specialised in radio engineering. The term “equivalent” qualification can include:

- Radio Technicians Certificate (RTC); or
- Telecommunications Technicians Certificate (TTC); or
- other comparable qualification recognised by the New Zealand Qualifications Authority; or
- a competency assessment based on extensive practical experience.

A significant number of senior radio engineers have who have acquired good radio design and commissioning experience over many years and who are well respected in the radio industry and

without achieving the minimum qualification have been granted ARC status. In general these engineers have had in excess of 15 years radio engineering experience in a number of roles.

Qualification Assessment

In assessing whether qualifications are equivalent, consideration will be given to:

- the educational requirements for entry to the course;
- the period of study required to complete the course;
- the range, depth and level of subjects studied; and
- the recognition of the course within the radio industry.

An assessment of qualifications or experience may include a panel interview or peer review, or reference to NZQA.

9. Application Process

An application for ARE or ARC status must be submitted in writing to the;

Manager Licensing
Radio Spectrum Management
Ministry of Economic Development
PO Box 2847
WELLINGTON 6015

The complete application shall comprise the following;

- (a) a completed and signed Application Form as shown in Appendix A. Information regarding the completion of the Application Form is included in Appendix B;
- (b) a complete work experience history describing the training, roles, skills, projects and employers. Information regarding the information required is included in Appendix B;
- (c) a written character reference from a respected radio industry professional and the names of two referees. A referee could provide the character reference. Referees should be experienced ARE, ARC or other respected and experienced radio industry engineers who can freely and knowledgeably discuss some of the work history experiences and your related skills and achievements. A suitable person might include a direct manager with ARE status;
- (d) certified copies of qualification certificates.

An incomplete application will be returned to the applicant.

The time taken to process an application completely will depend upon the timing of the next SMART training course for ARE and ARC. Applicants who are already familiar with SMART licence application and licence parameter input processes may be able to be completed within one month of application receipt.

Any enquires regarding the application process or timing of SMART training courses should be emailed to: info@rsm.govt.nz

10. The Approval Process

On receipt of an application the RSM approvals officer of the Ministry will check the application for completeness, acknowledge the receipt of the application and request an assessment of the application from a senior engineer. That engineer will then;

- assess the application taking into account the applicants qualifications and work history;
- review the written character reference and discuss, if necessary, (by telephone) with its writer any relevant issues;
- discuss the applicant's work history with his referees;

- ask a RSM field compliance officer who may have had contact with the applicant to advise his/her knowledge of the applicants experience and competence in relation to radio issues and suitability;
- discuss with the applicant (by telephone) matters arising from the written reference, discussions with the referees and the work history;
- discuss with the applicant spectrum issues to identify the applicants understanding of the regulatory regimes, general spectrum management issues, the applicant's familiarity with the RSM web site and SMART;
- ask the applicant to talk through the basic steps he/she might take in assessing a licence before signing the licence certificate.
- prepare a written assessment report/recommendation for presentation to the approval officer.

If the application is approved, the approvals officer will write to the applicant advising of the approval.

The RSM approvals officer will then arrange;

- a SMART login key and password;
- create a client record for the applicant;
- arrange security clearance for access to SMART;
- arrange for training on SMART processes at a Ministry course,
- load the new ARE/ARC name into the RSM web register of approved persons; and,
- if appropriate, load the new ARE/ARC name into the RSM web list of Approved persons available for public work.

On completion of the SMART training the applicant will receive a formal letter that he/she has been granted the approved person status and may commence ARE/ARC activities and the SMART login.

The SMART login and password will be provided during the SMART training held by the Ministry. except where the applicant is gaining experience with SMART facilities from an experienced ARE or ARC in his work place. In such cases the login and password will be sent by email or with the formal letter granting the status.

Should an applicant may be considered unsuitable by the assessment officer for reasons concerning qualifications, knowledge, experience, competence or ethics, that officer will discuss the concerns with Manager Licensing. The officer will then discuss them with the applicant with a view to establishing a course of action that could lead a further application and new decision.

Should the applicant wish, he/she may have the matter referred to a committee that would include Ministry representatives, the applicant and/or his/her representative and an independent approved persons, i.e., in a manner similar to that identified in [PIB 40, Audit Procedures for Licence Certificates](#) for reviewing Audit decisions.

In making a final decision the Ministry will not knowingly put at risk its responsibilities to protect the spectrum, spectrum records or processes.

11. Audit requirements relating to Licence Certificates

The Ministry mandates that all licence certificates issued by both internal and external approved persons are subject to audit on request. These audits may be undertaken to provide general assurance that licences are being certified in accordance with the statutory requirements and rules for certification, and/or when operations pursuant to a licence cause harmful interference or are otherwise found to be not in conformity the licence parameters, the statutory requirements and/or rules for certification. The selection of licences for audit may be made on a random or specific basis.

Licences certified by external approved persons are normally audited by an internal ARE in accordance in accordance [PIB 40](#), the Ministry ISO audit process, the statutory requirements,

applicable reference standards and any rules for licence certification (PIB 38 or PIB 39 when appropriate).

Licences certified by internal approved persons are audited by an external ARE on contract to the Ministry in accordance in accordance [PIB 40](#), the Ministry licence certification processes, the statutory requirements, applicable reference standards and any rules for licence certification (PIB 38 or PIB 39 when appropriate).

To provide for such auditing, the Ministry requires both internal and external approved persons to retain records of the analysis completed prior to the certification of every licence. The extent of the information to be retained and the period of retention are identified in Licence Certification Records below. A copy of those records not stored in SMART is to be supplied to the Ministry within 10 working days of a request made by the Ministry.

The results of the audits may be used to determine the competency of approved persons and may result in the provision of advice for future application or other action.

12. Records of Licence Certification

Approved persons are required to keep copies of documents relating to the issue of a licence certificate for a period of at least 7 years from the date operations pursuant to that licence begin. The records for internal approved persons are currently loaded into SMART as an event lists with the licence record. This feature will be available to external engineers from October 2008,

The records to be retained include, but are not limited to;

- An overall summary certification report that would identify the results of the coordination calculations, information on usage and policy considerations, and references made;
- A copy of area search, SMART extract and other frequency schedules used to identify co-channel and adjacent channel services that have a potential to receive interference from or cause interference to the proposed new licence;
- A record of the transmitter and receiver parameters, frequency, antenna radiation patterns, site details, out of band emissions, receive protection areas, protection locations and MPIS values of all existing and known planned co-channel and adjacent channel assignments likely to have a potential to receive interference from or cause interference to the proposed new licence;
- Copies of radio link and/or coverage performance calculations, path profiles, path loss calculations and assumptions made when analyzing potential interference paths;
- Copies of calculations and/or assumptions relating to miscellaneous matters such as synchronisation, RDS/SCA, protection ratios and urban coverage issues;
- Copies of calculations and assumptions related to receiver desensing, blocking and intermodulation of co- and adjacent channel services, services in adjacent bands and safety of life services. This includes calculations and assumptions related to FMBC desensing of adjacent landmobile services and FMBC - aeronautical ILS and VOR receiver intermodulation and overload or similar;
- Assumptions relating to compatibility between services;
- Descriptions of design features required for implementation, e.g., MF antenna arrangements to produce specific coverage patterns;
- Antenna combiner and other equipment technical specifications;
- Copies of communications relating to approved departures from published rules and polices;
- A bibliography of referenced standards, recommendations, reports, technical papers and other information.

Actual details retained will depend upon the type of licence or radio service covered by the licence certificate, the complexity of related policies and the extent of the investigations required. The records retained relating to landmobile simplex licences will likely be somewhat less than those relating to a new broadcasting services or new technologies.

Examples of suitable certification records are (to be) included in [PIB 38](#) and [PIB 39](#).

Approved persons should be aware of the need to retain records concerning the certification of spectrum licences as evidence to be used in arbitration or court hearings on harmful interference or other matters.

13. Requirements for the Retention of the Approved Person Status

The approved person status is granted and retained on the condition that he/she:

- Will continue to abide with the declaration included in his/her application to become an ARE or ARC;
- Will retain the level of integrity required for approved persons;
- Will maintain and grow his/her knowledge and competency for the range of services for which licence certification is provided; and,
- Will consistently certify only those licences which conform to the statutory requirements and certification rules.

The provision of approved person status;

- is usually for life but may be reviewed by the Ministry at any time;
- may be surrendered by the approved person; and,
- can be withdrawn by the Ministry in accordance with the process identified in section 14. Process for the Withdrawal of Approved Status.

14. Process for the Withdrawal of Approved Status

In determining an approved persons failure to comply with the requirements for an approved person status, the Ministry will consider whether the failure is due to a lack of experience that can be corrected or is of a more significant breach that indicates that the withdrawal of a person's approved status is the appropriate action..

Significant breaches of the requirements include where an approved person, for example;

- has been found to have submitted an application for approved status which contains false or misleading information;
- is proven to have committed an offence under the Crimes Act or other any other Act where the offence clearly demonstrates a wilful disregard for New Zealand law;
- has, despite being advised by the Ministry of issues with his/her certification of licences, continued to certify licences that do not conform with the statutory requirements, policies, planning documents and certification rules published by the Ministry;
- fails to amend a licence to conform with the Ministry's requirements after the provision of due notice by the Ministry; and/or,
- is unable to be contacted by the Ministry.

If the Ministry believes that in a situation where the withdrawal of status is appropriate, the approved person will be advised in writing and given the opportunity to review the matter with the Ministry. Should the applicant wish, he/she may have the matter discussed with his/her representative and/or referred to a committee that includes Ministry and independent approved persons in a manner similar to that identified in PIB 40 for reviewing Audit decisions. The Ministry will issue the formal advice of the outcome of the review to the approved person.

If a situation of concern arises, the Ministry reserves the right to withdraw any login and password privilege for the period from the discovery of the precipitating event and for the duration of any investigation and until a decision is made that the approved person is reinstated.

15. Professional Indemnity Insurance

The Ministry recommends that approved persons be covered by professional indemnity insurance, either as an individual or as an employee of (or contractor to) a company or other organisation. Where an approved person is relying on his/her employer's insurance, that person should not issue certificates other than as part of his/her employment agreement or contract.

In regard to an ARE, the accountability provisions of s109A of the Act should be noted.

16. Issues for Agreement between Approved Persons and Others

The significant issues requiring agreements between approved persons and other (employer, contractor or licence or right holder) can relate to general employment matters and responsibilities in relation to errors made during the certification and subsequently. General employment matters are for negotiation between the approved person and others. Agreements concerning certification errors can involve the Ministry and are considered as follows.

Such errors can generally arise because of;

- a lack of experience on the part of the approved person, perhaps leading to errors with licence parameters, e.g., power levels, frequencies, emission designations, transmitter location, or licence conditions;
- errors in data provided by the licensee to the approved person;
- the simultaneous certification of licences that have either co-channel or adjacent channel interference potential. PIB 39 Section 1 Simultaneous Certification and Registration of Licences, discusses events that could lead to such issues; and,
- errors resulting from the action of third parties, including SMART database errors either due to Ministry actions or those of other approved engineers.

When considering these responsibilities it should be noted that;

- the licence holder (radio licence) and the rightholder (spectrum licence) are responsible for the operation of their licences and can be subject to compliance issues and consequential costs;
- the approved person is responsible for ensuring the licence complies with statutory requirements, there is no potential for harmful interference and for ensuring the licence is correctly entered into SMART; and,
- the Ministry is responsible for SMART and licensing processes and licence certification rules.

For errors resulting from Ministry activities the Ministry will accept requests for correction and will normally waive any charges that would otherwise be made. The Ministry takes no responsibility for consequential costs resulting from such errors.

With regard to other errors, it is appropriate that there is agreement between the licensee and approved person in regard to errors resulting from licensee, the approved person and third parties. Such agreement should therefore be made prior to undertaking licence certification tasks concerning;

- the need for approved person to certify only those licence that conform to the statutory requirements and certification rules published by the Ministry;
- the matter of who is responsible for professional indemnity insurance costs/arrangements;
- in the event of a licence being issued with an error, how will the error will be corrected; and,
- who is responsible for costs associated with audits and errors, i.e., are they an additional expense or are included with the rates agreed for the certification process.

17. Ministry Involvement in Certification Error Resolution

The Ministry believes the external engineering regime to be a valuable aspect of radio spectrum management and will assist in the resolution of SMART, processing and regulatory issues concerned with licensing errors.

The Ministry can also become involved in arbitration requirements relating to s109 of the Act.

Contact with the Ministry on such matters should first be addressed to [Manager Licensing](#).

18. Ministry Support for Approved Persons

In addition to the provision of support required for the resolution of certification errors, the Ministry will from time to time provide;

- seminars to familiarise approved persons with new SMART facilities and licence certification requirements of existing and new licence types; and,
- individual advice either in person or by telephone to current or intending approved persons.

Seminars will be advertised by direct email to approved persons, through the RSM web site and the MED Business Update.

19. Certification Information and Calculation Resources

Approved persons can require access to a wide variety of information and calculation tools to complete their licence certification tasks and related activities. The certification of less complex licences such as those required for landmobile simplex and two frequency services requires an approved person to have access to the RSM web site, SMART, PIB 23, PIB 38, the latest policy information published by the Ministry and simple path loss and interference calculation resources. The certification of more complex licences can require access to information to the RSM web site, SMART, PIB 21, PIB22, PIB 38, PIB 39, and may require access to other information such as the ITU-R recommendations and Radio Regulations, and more sophisticated calculation tools.

The Ministry has access to ITU-R recommendations, Radio Regulations, reports and other documents, a number of radio calculation tools (Pathloss and ICS Telecom), and internally developed calculation Excel spreadsheets. Regrettably, the issue of these to external approved persons can present the Ministry with copyright and support issues that must be avoided.

With these issues in mind the Ministry will provide ITU and other information to external approved persons contracted for Ministry engineering projects.

The Ministry may also provide information derived from ITU-R resources to independent external engineers involved in licence certification activities on an infrequent basis and on request to RSM.

In relation to the provision of calculation Excel spreadsheets the Ministry is able to provide copies of internally developed only and that such supply would be on the basis that the Ministry will accept no responsibility for the accuracy of nor provide any ongoing support for any spreadsheet.

Requests from external approved persons to such information or ITU-R user name-password access will be considered by the Ministry on a case by case basis.

APPENDIX A Application Form

Application for Approved Radio Engineer (ARE) or Approved Radio Certifier (ARC) Status

Print clearly and attach copies of relevant documents (qualifications, references etc)

Applicant's Details

Name

SURNAME

GIVEN NAMES

Residential or Business Address

Postcode

Contact Information

Home Phone:

Work Phone:

Mobile Phone:

Fax:

E-mail:

Postal Address

Postcode

Status Applied For:
(ARE or ARC)

I hereby declare that

- (1) The information provided in this application is not false or misleading.
- (2) I will notify the MED of any changes of address, or other situation changes relevant to my approved person status.
- (3) I will only certify licences in regard to which I believe I have the requisite level of technical competency.
- (4) I will only certify licences that comply with regulatory requirements and the MED published radio spectrum policy, plans and licence certification rules (PIB 38 and/or PIB 39).
- (5) I will not knowingly certify any licence where operations pursuant to that licence will be illegal.
- (6) I will not, in regard to any information that may come into my possession concerning records withheld under section 28 of the Radiocommunications Act 1989, divulge the information to other persons.
- (7) I will retain records relating to licence certificates I make, for a period of 5 years, and produce these on request to the MED.
- (8) I accept that my name and approval number will be published on the MED website Register of Approved AREs and ARCs.
- (9) I accept that certificates I issue may be subject to audit.

My Publication Requirements

I wish to be included in the "List of Approved Radio Engineers (ARE) and Approved Radio Certifiers (ARC) available for public work" on the RSM website for the following work types: Tick as appropriate:

ARE only Spectrum fixed Spectrum broadcasting
ARE and ARC Radio Land Mobile (R/T) Fixed **Do not list me**

Signature

Date

APPENDIX B Notes for the Completion of Application Form and Work History

Completing an Application Form

The application form requires the applicant to;

- identify whether the status required is ARE or ARC;
- include the applicant's full name, residential and/or business address, a postal and e-mail address, contact telephone, cell phone and/or fax numbers;
- be accompanied by a certified copy of the applicant's relevant educational qualifications;
- be accompanied by the work history of the applicant relevant to radio industry engineering, field, project, management and other work experience;
- be accompanied by the names, addresses and telephone numbers of at least two referees who can provide a character reference and verify work experience aspects of the information provided; and,
- be signed by the applicant.

The applicant should note that the signing of the application form is a declaration that the information in the application is not false or misleading, and that the applicant will, to the best of his or her ability, certify spectrum licences (ARE) and/or radio licences ARE and ARC) in accordance with the Radiocommunications Act 1989, the Radio Regulations 2001, the policies and certification rules published by the Ministry.

When completing the application form the applicant should note item 6 in the "I hereby declare that" section, i.e., I agree to my contact details (postal address, work phone, email and fax) being published on the MED website (Delete this line if you do not agree).

All ARE and ARC are included to a [register of approved persons](#) on the RSM website.

Approved persons can also choose to be included in a separate RSM web site [list of approved persons available for public work](#) and note the range of radio services in which they can work.

Applicants in long term employment, rather than on contract work, and wishing to be excluded from the list should tick the appropriate box under Publication requirements on their application form.

Completing a Work History

The applicant should outline his or her experience in fields of employment related to radio frequency engineering. While there is no minimum period requirement, relevant experience/skills of which the assessment officer needs to be made aware include:

- site and radio system design, associated installation, maintenance and commissioning experience;
- frequency selection and assignment tasks completed
- propagation analysis and associated radio network design involvement;
- site and link interference resolution tasks completed, including site co-ordination involving intermodulation considerations, antenna and filtering/diplexer/circulator equipment selection;
- radio design tools and resources (references, standards, regulations) used;
- recognition and resolution of radio interference mechanisms due to electromagnetic compatibility (EMC) issues;
- the use of International Radio Regulations, and the reports and recommendations of the International Telecommunications Union in regard to radio services;
- exposure to the wider New Zealand radiocommunications environment;
- a good understanding and knowledge of the regulatory framework for spectrum management;
- an understanding of the issues in regard to the siting of telecommunication facilities, including electromagnetic radiation (EMR); and,

- proficiency in the English language.

The applicant will be expected to demonstrate by the range and scope of their appreciation on these matters by briefly outlining the experiences and the projects involved in the application, and able to expand on these during a telephone interview with the Ministry assessment officer.

When preparing the history cover all main periods or relevant employment and projects but be concise. A short statement of actual events can be tested by a few searching questions from the assessment officer