

Broadcast Planning Instruction

Title: Day/Night switching of transmission power and full-time power increase for AM radio broadcasting services	
Instruction no: 5	Version release: 2
	Date of effect: Immediate

Background

The ACMA introduced guidelines for the implementation of day/night switching of transmitter power and for full time power increase by AM radio broadcasters.

Day/night switching is designed to improve the reception and coverage of existing AM broadcasting services by permitting an increase in the maximum transmission power during daylight hours. Full time power increases will assist some broadcasters whose signal reception may have deteriorated over the years, due to increases in man-made noise levels and night time interference from other services.

Under this policy only AM broadcasters operating within the broadcasting services bands are eligible to apply for power increases in accordance with these guidelines.

Instruction

1. Conditions for day/night switching of transmission power

An increase in transmission power during daylight hours by an existing AM station is subject to the following implementation guidelines:

- (a) The ACMA, through technical assessments and/or negotiation with the broadcaster, will determine the increase in power level required, in accordance with the [Technical Planning Guidelines](#) (TPGs), on a case-by-case basis.
- (b) The increase of power during the daylight hours must not result in an increase in interference to the signal reception of existing AM services (i.e. increase in the affected station's useable field strength) within their licence areas.
- (c) The licensee must ensure that not more than 1 per cent of the total population of the licence area reside in an area with received field strengths greater than 1000 mV/m (reference guideline 21 of the TPGs).
- (d) The licensee of the service must satisfactorily resolve any complaints of interference within its 1000 mV/m field strength contour (reference guideline 10 of the TPGs).
- (e) The increase of power during the daylight hours is designed to improve the coverage within the station's licence area only and must not result in deliberate signal overspill outside of its licence area (reference guidelines 13 and 14 of the TPGs). The ACMA will determine any increase of power during daytime operation, having regard to overspill, on a case-by-case basis.
- (f) Daylight hours are defined as one hour after local sunrise to one hour before local sunset time. Local time for sunrise and sunset is to be determined in accordance with ITU-R Recommendation 435-7.

- (g) Switching between day/night transmission power should be implemented using electronic devices that pre-set monthly switching times on the fifteenth day of each month, and set transmission power at the night time power level if they should fail.
- (h) Stations must maintain an electronic log, which records times of power changes at all times.
- (i) The licensee is responsible for rectifying interference problems, caused by the transmission power increase, to the transmission or reception of existing broadcasting and radio communication services.
- (j) The ACMA is obliged to plan for AM broadcasting services (including changes to the characteristics of existing assignments) in accordance with the *Final Acts of the Regional Administrative LF/MF Broadcasting Conference (Regions 1 and 3) Geneva, 1975*. The daylight power increase is therefore subject to international coordination within the framework of the Geneva 75 Plan.

2. Conditions for full-time power increase

A full-time power increase in transmission power by an existing AM station is subject to the following implementation guidelines:

- (a) The ACMA, through technical assessments and/or negotiation with the broadcaster, will determine the increase in power level required, in accordance with the TPGs, on a case-by-case basis.
- (b) The increase of power must not result in an increase in interference to the signal reception of existing AM services (i.e. increase in the affected station's useable field strength) within their licence areas.
- (c) The licensee must ensure that not more than 1 per cent of the total population of the licence area reside in an area with received field strengths greater than 1000 mV/m (reference guideline 21 of the TPGs).
- (d) The licensee of the service must satisfactorily resolve any complaints of interference within its 1000 mV/m field strength contour (reference guideline 10 of the TPGs).
- (e) The increase of power is designed to improve the coverage within the station's licence area only and must not result in deliberate signal overspill outside of its licence area (reference guidelines 13 and 14 of the TPGs). The ACMA will determine any full-time increase in power, having regard to overspill, on a case-by-case basis.
- (f) The licensee may be required to change the existing antenna radiation pattern of the station in order to prevent interference to other AM services.
- (g) The licensee is responsible for rectifying interference problems, caused by the transmission power increase, to the transmission or reception of existing broadcasting and radio communication services.
- (h) The ACMA is obliged to plan for AM broadcasting services (including changes to the characteristics of existing assignments) in accordance with the *Final Acts of the Regional Administrative LF/MF Broadcasting Conference (Regions 1 and 3) Geneva, 1975*. The full-time power increase is therefore subject to international coordination within the framework of the Geneva 75 Plan.

3. Applications for day/night switching or full time power increase

Broadcasters seeking to increase power either by day/night switching or a full-time power increase must apply for a test transmission licence by completing an B12 and AM Power Check List (copy attached). The following information must also be included with the application:

- (a) A technical submission detailing:
- (i) the current technical specification of the service;
 - (ii) current coverage deficiencies and/or reception difficulties;
 - (iii) field measurements of current overspill levels into neighbouring licence area(s); and
 - (iv) a technical proposal for the proposed power increase.
- (b) A field strength contour map:
- (i) showing the estimated 2.5 mV/m ground wave field strength contour following the proposed power increase; and
 - (ii) delineating the licence area of the service and that of neighbouring services.
- (c) An Electromagnetic Compatibility (EMC) assessment of potential interference to other broadcasting and radio communication services resulting from the proposed power increase. The EMC check is also to include an assessment of compliance with guideline 21 of the Technical Planning Guidelines (Maximum Field Strength within the Licence Area).

In addition to the above requirements, licensees are to be reminded of the obligation to obtain all necessary approvals for planning and environmental matters from relevant Federal, State/Territory and local government authorities. Licensees must also ensure compliance with Australian Communications and Media Authority (ACMA) regulatory requirements dealing with human exposure to Electromagnetic Radiation (EMR), which are applicable to broadcasting transmitters. Further information on the ACMA's EMR regulatory arrangements can be obtained from the ACMA website (www.acma.gov.au).

Subject to satisfactory assessment of the application, a test transmission licence will be issued authorising an increase in power for a trial period of 18 months. Conditional on the resolution of any interference issues and successful completion of international coordination, approval to operate at the higher power will be formalised, at the conclusion of the test transmission period, through a variation to the relevant License Area Plan (LAP).

Authorised: [SIGNED]
Manager
Broadcast Spectrum Planning Section

Date: 1/06/2021

AM POWER INCREASE TEST TRANSMISSION CHECKLIST

to ACCOMPANY an APPLICATION for a TRANSMITTER LICENCE for an AM POWER INCREASE (DAY NIGHT SWITCHING OR FULL TIME POWER INCREASE)

To apply for an AM power increase test transmission licence, you must complete this checklist and attach it to your B12 application form.

Section A

Applicants must include the following attachments with their applications:

- (a) **Technical Submission**
(Detailing current technical specification of service; current coverage deficiencies and/or reception difficulties; field measurements of current overspill levels; and technical proposal for proposed power increase)
- (b) **Coverage Map**
(Showing estimated 2.5 mV/m ground wave field strength contour following proposed power increase and delineating licence area of the service and that of neighbouring services)
- (c) **Electromagnetic Compatibility (EMC) Check**
(Showing an assessment of potential interference to other broadcasting & radiocommunication services resulting from the proposed power increase)

Section B

Physical mast height Metres (above ground)
(Applicants intending to provide more than one mast, please specify the height of the tallest mast)

Mast Height (electrical degrees)

Omnidirectional

Directional (Please provide details below)

Mast Number	Mast Heights (In electrical degrees)	Orientation with respect to Mast 1	Mast Spacing with respect to Mast 1	Phase with respect to Mast number 1	Current Ratio with respect to Mast 1
1		0	0	0	1.0
2					
3					
4					
5					

Section C

This section is to be completed by applicants applying for an increase in both day and night transmission power.

Existing Transmitter Power and CMF

Proposed Transmitter power and CMF for day time hours

Proposed Transmitter power and CMF for night time hours

Section D

This section is to be completed by applicants applying for an increase in day transmission power.

Existing Transmitter Power and CMF

Proposed Transmitter power and CMF for day time hours

APPLICANT'S DECLARATION

I/We declare and acknowledge that the information on this application and in the accompanying documents is true and correct.

.....
(Signature)

...../...../.....
(Date)

Please note:

- You are required to provide all the essential documentation requested in this checklist. If the required essential documentation is not provided, the application will be returned for completion before being processed.
- It should also be noted that only AM broadcasters operating within the Broadcasting Services Bands (BSB) are eligible to apply for these power increases.

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