

INDUSTRY STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

HJ 1136-2020

Replacing HJ/T 10.2-1996 (Partly)

Monitoring method for electromagnetic radiation environment of medium wave broadcasting transmitting station

中波广播发射台电磁辐射环境监测方法

(English Translation)

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Foreword

In order to implement the "Environmental Protection Law of the People's Republic of China", protect the environment, and prevent environmental pollution from electromagnetic radiation, standardize medium wave broadcast transmitters Environmental monitoring of electromagnetic radiation has formulated this standard.

This standard specifies the technical requirements for the content and methods of electromagnetic radiation environment monitoring of medium wave broadcasting transmitters. This standard replaces the "Radiation Environment "Guidelines for Protection and Management of Electromagnetic Radiation Monitoring Instruments and Methods" (HJ/T 10.2-1996) is used as a medium-wave broadcasting transmitter for electromagnetic radiation environmental monitoring Implementation of standards.

This standard is issued for the first time.

Appendix A of this standard is an informative appendix.

This standard was formulated by the Department of Radiation Source Safety Supervision and the Department of Regulations and Standards of the Ministry of Ecology and Environment.

The main drafting unit of this standard. Radiation Environmental Monitoring Technology Center of the Ministry of Ecology and Environment.

This standard was approved by the Ministry of Ecology and Environment on October 27, 2020.

This standard will be implemented on December 30, 2020; since the date of implementation

of this standard, the electromagnetic radiation According to the provisions of this standard.

This standard is interpreted by the Ministry of Ecology and Environment.

Method for monitoring electromagnetic radiation environment of medium wave broadcasting transmitting station

1 Scope of application

This standard specifies the technical requirements for the content and methods of electromagnetic radiation environmental monitoring of medium wave broadcast transmitters.

This standard applies to the electromagnetic radiation environment monitoring of medium wave broadcasting transmitting stations.

2 Normative references

The content of this standard refers to the terms in the following documents. For undated reference documents, the effective version is applicable to this standard.

HJ 1112 Technical Guidelines for Environmental Impact Assessment Broadcasting and Television

3 Terms and definitions

The following terms and definitions apply to this standard.

3.1 Medium wave broadcasting

Sound broadcasting operating in the mid-wave frequency band (526.5kHz~1606.5kHz).

3.2 Transmitting station

A radio station consisting of one or more transmitters.

3.3 Electromagnetic radiation environment-sensitive target

Objects that need to be focused on in the environmental impact assessment and monitoring of electromagnetic radiation. Including houses, schools, hospitals, office buildings, factories, etc.

A building where people live, work or study.

4.1 Environmental conditions

The environmental conditions during monitoring should meet the requirements for the use of monitoring instruments.

4.2.1 Basic requirements

4.2.1.1

The working performance of the monitoring instrument should meet the requirements of the electromagnetic field to be measured, and the working frequency can cover the monitored medium wave broadcasting transmitting station.

Transmission frequency.

4.2.1.2

The monitoring instrument adopts a frequency selective electromagnetic radiation monitor; in addition, according to the monitoring purpose, a non-frequency selective broadband electromagnetic radiation monitor can be used at the same time.

4.2.1.3

The monitoring instrument should use a probe (antenna) with an isotropic response, and the support of the monitoring instrument should be made of non-conductive materials that are not susceptible to moisture.

Bracket. When using a non-selective broadband electromagnetic radiation monitor for monitoring, the probe should be placed horizontally.

4.2.1.4

The detection method of the monitoring instrument shall be the root mean square detection method, and the reading of the monitoring instrument shall be the average value in any continuous 6 minutes.

4.2.2 Frequency-selective electromagnetic radiation monitor

The frequency-selective electromagnetic radiation monitor refers to the ability to receive and process the spectral components of a specific emission within the response frequency range of the instrument the basic requirements for electrical performance of the field quantity monitoring instrument are shown in Table 1.

4.2.3 Non-selective frequency broadband electromagnetic radiation monitor

The non-selective broadband electromagnetic radiation monitor means that the monitoring value is the integrated value of the field strength of all frequency points within the frequency range of the instrument, and has various directions the basic electrical performance requirements of the electromagnetic radiation monitor with the same sex response are

shown in Table 2.

4.3 Monitoring conditions

The monitoring of the medium wave broadcasting transmitting station shall be carried out during the normal broadcasting period, covering the different working conditions of the transmitter corresponding to the antenna under test.

5.1 Basic requirements

5.1.1

The monitoring range is the same as the electromagnetic radiation environmental impact assessment range in HJ 1112.

5.1.2

The location and frequency of monitoring shall be based on the representativeness of the monitoring data, the characteristics of environmental quality, changes and environmental impact assessment, and the environmental protection the requirements for the inspection and acceptance are determined.

5.1.3

When monitoring the medium wave broadcasting transmitting station, the cross-sectional monitoring path should select the direction of the maximum radiation field strength of the tested antenna, and the maximum Field strength. The direction of the maximum radiation field strength is given and located by the construction unit or antenna design unit.

5.2 Data collection

Before carrying out monitoring, the basic information of the tested medium wave broadcasting transmitting station should be collected, including. the name of the medium wave broadcasting transmitting station, construction location, Radio frequency, transmit power, antenna type, operating status, etc.

According to the nature and purpose of monitoring, other information can also be collected, including. antenna distribution, transmitter operating arrangements and other parameters.

5.3 Monitoring factors

The electromagnetic radiation environment monitoring factor of the medium wave broadcasting transmitting station is the radio frequency electromagnetic field, and the monitoring parameters are the electric field intensity (or power density), magnetic Field strength. In the far field area, you can monitor only the electric field strength (or power density); in the near field area, you need to monitor the electric field strength and magnetic field strength at the same time.