OMB Control Number: 3060-0991 December 2020
AM Measurement Data

SUPPORTING STATEMENT

A. Justification:

1. Information Collection Requirements: Circumstances Necessitating Change to Information Collection:

The following information collection requirements are approved under this collection and we are requesting continued approval for three years from the Office of Management and Budget (OMB):

47 CFR 73.54(c) requires that AM licensees file a letter notification with the FCC when determining power by the direct method. In addition, Section 73.54(c) requires that background information regarding antenna resistance measurement data for AM stations must be kept on file at the station.

47 CFR 73.54(d) requires AM stations using direct reading power meters to either submit the information required by (c) or submit a statement indicating that such a meter is being used.

47 CFR 73.61(a) states each AM station using a directional antenna with monitoring point locations specified in the instrument of authorization must make field strength measurements at the monitoring point locations specified in the instrument of authorization, as often as necessary to ensure that the field at those points does not exceed the values specified in the station authorization. Additionally, stations not having an approved sampling system must make the measurements once each calendar quarter at intervals not exceeding 120 days. The provision of this paragraph supersedes any schedule specified on a station license issued prior to January 1, 1986. The results of the measurements are to be entered into the station log pursuant to the provisions of Section 73.1820.

47 CFR 73.61(b) states if the AM license was granted on the basis of field strength measurements performed pursuant to Sec. 73.151(a), partial proof of performance measurements using the procedures described in Sec. 73.154 must be made whenever the licensee has reason to believe that the radiated field may be exceeding the limits for which the station was most recently authorized to operate.

47 CFR 73.61(c) requires a station may be directed to make a partial proof of performance by the FCC whenever there is an indication that the antenna is not operating as authorized.

47 CFR 73.62(b) requires an AM station with a directional antenna system to measure and log every monitoring point at least once for each mode of directional operation within 24 hours of detection of variance of operating parameters from allowed tolerances.

47 CFR 73.68(c) states a station having an antenna sampling system constructed according to the specifications given in paragraph (a) of this section may obtain approval of that system by submitting an informal letter request to the FCC in Washington, DC, Attention: Audio Division, Media Bureau. The request for approval, signed by the licensee or authorized representative, must contain sufficient information to show that the sampling system is in compliance with all requirements of paragraph (a) of this section.

47 CFR 73.68(d) states in the event that the antenna monitor sampling system is temporarily out of service for repair or replacement, the station may be operated, pending completion of repairs or replacement, for a period

not exceeding 120 days without further authority from the FCC if all other operating parameters and the field monitoring point values are within the limits specified on the station authorization.

47 CFR 73.68(e)(1) Special Temporary Authority (see Section 73.1635) shall be requested and obtained from the Commission's Audio Division, Media Bureau in Washington to operate with parameters at variance with licensed values pending issuance of a modified license specifying parameters subsequent to modification or replacement of components.

47 CFR 73.68(e)(4) states request for modification of license shall be submitted to the FCC in Washington, DC, within 30 days of the date of sampling system modification or replacement. Such request shall specify the transmitter plate voltage and plate current, common point current, base currents and their ratios, antenna monitor phase and current indications, and all other data obtained pursuant to this paragraph.

47 CFR 73.68(f) states if an existing sampling system is found to be patently of marginal construction, or where the performance of a directional antenna is found to be unsatisfactory, and this deficiency reasonably may be attributed, in whole or in part, to inadequacies in the antenna monitoring system, the FCC may require the reconstruction of the sampling system in accordance with requirements specified above.

47 CFR Section 73.69(c) requires AM station licensees with directional antennas to file an informal request to operate without required monitors with the Media Bureau in Washington, D. C., when conditions beyond the control of the licensee prevent the restoration of an antenna monitor to service within a 120-day period. This request is filed in conjunction with Section 73.3549.

47 CFR Section 73.69(d)(1) requires that AM licensees with directional antennas request to obtain temporary authority to operate with parameters at variance with licensed values when an authorized antenna monitor is replaced pending issuance of a modified license specifying new parameters.

47 CFR Section 73.69(d)(5) requires AM licensees with directional antennas to submit an informal request for modification of license to the FCC within 30 days of the date of antenna monitor replacement.

47 CFR 73.151(c)(2)(i) describes techniques for moment method modeling, sampling system construction, and measurements that must be taken as part of a moment method proof. A description of the sampling system and the specified measurements must be filed with the license application.

47 CFR 73.151(c)(1)(ix) – The *AMR Third Report and Order* revised 47 CFR 73.151(c)(1)(ix) to eliminate the requirement of obtaining a registered surveyor's certification, provided that no new towers are being added to an existing AM array. This will reduce the burden. The revision added an additional sentence to the end of 47 CFR 73.151(c)(1)(ix) (new language in bold); the revised rule states:

> The orientation and distances among the individual antenna towers in the array shall be confirmed by a post-construction certification by a land surveyor (or, where permitted by local regulation, by an engineer) licensed or registered in the state or territory where the antenna system is located. **Stations submitting a moment method proof for a pattern using towers that are part of an authorized AM array are exempt from the requirement to submit a surveyor's certification, provided that the tower geometry of the array is not being modified and that no new towers are being added to the array**.

47 CFR 73.151(c)(1)(x) - The *AMR Third Report and Order* added this rule in order to extend the exemption (of having to file a new proof with the FCC) to any AM tower modification that does not affect the modeled values used in the previously submitted license proof. This will decrease the burden.[1] The new 47 CFR 73.151(c)(1)(x) states:

> An AM station that verified the performance of its directional antenna system using computer modeling and sampling system verification under this rule section, that makes modifications to tower or system components above the base insulator, shall follow the procedures set forth in section 1.30003(b)(2) of this chapter.

47 CFR 73.151(c)(3) - The *AMR Third Report and Order* revised 47 CFR 73.151(c)(3) to retain the current requirement for submission of reference field strength measurements in the initial license application, but eliminated the requirement to submit additional reference field strength measurements in subsequent license applications. This will decrease the burden. The revised rule (new language in bold) reads:

> When the application for an initial license for a directional antenna system is submitted that is based on computer modeling and sample system verification, reference field strength measurement locations shall be established in the directions of pattern minima and maxima. On each radial corresponding to a pattern minimum or maximum, there shall be at least three measurement locations. The field strength shall be measured at each reference location at the time of the proof of performance. The license application shall include the measured field strength values at each reference point, along with a description of each measurement location, including GPS coordinates and datum reference. **New reference field strength measurements are not required for subsequent license applications for the same directional antenna pattern and physical facilities.**

47 CFR 73.154(a) - The *AMR Third Report and Order* revised 47 CFR 73.154(a) to relax the rule on submission of partial proofs of performance of directional AM antenna arrays by eliminating the requirement to take measurements on non-monitored radials adjacent to monitored radials. This will decrease the burden. The revised 47 CFR 73.154(a) states in full:

> A partial proof of performance consists of at least 8 field measurements made on each of the radials that includes a monitoring point.

47 CFR 73.154(d) requires the result of the most recent partial proof of performance measurements and analysis to be retained in the station records and made available to the FCC upon request. Maps showing new measurement points shall be associated with the partial proof in the station's records and shall be made available to the FCC upon request.

47 CFR 73.155 – The *AMR Third Report and Order* revised 47 CFR 73.155 to eliminate the requirement for biennial recertification of the performance of a directional pattern licensed pursuant to a MoM proof, except when system components have been repaired or replaced. This will decrease the burden. The revised 47 CFR 73.155 states in entirety:

[1] Burden requirements for rule section 1.30003(b)(2) are found under OMB Control No. 3030-1121.

> A station licensed with a directional antenna pattern pursuant to a proof of performance using moment method modeling and internal array parameters as described in §73.151(c) shall recertify the performance of the antenna monitor sampling system only in the case of repair to or replacement of affected system components, and then only as to the repaired or replaced system components. Any recertification of repaired or replaced system components shall be performed in the same manner as an original certification of the affected system components under §73.151(c)(2)(i) of this part. The results of the recertification measurements shall be retained in the station's public inspection file.

47 CFR 73.158(b) requires a licensee of an AM station using a directional antenna system to file a request for a corrected station license when the description of monitoring point in relation to nearby landmarks as shown on the station license is no longer correct due to road or building construction or other changes. A copy of the monitoring point description must be posted with the existing station license.

47 CFR 73.3538(b) requires a broadcast station to file an informal application to modify or discontinue the obstruction marking or lighting of an antenna supporting structure.

47 CFR 73.3549 requires licensees to file with the FCC requests for extensions of authority to operate without required monitors, transmission system indicating instruments, or encoders and decoders for monitoring and generating the Emergency Alert System codes. Such requests musts contain information as to when and what steps were taken to repair or replace the defective equipment and a brief description of the alternative procedures being used while the equipment is out of service.

History:

On September 22, 2017 the Commission adopted the Third Report and Order in MB Docket No. 13-249, FCC 17-119, *In the Matter of Revitalization of AM Radio Service* (*AMR Third R&O*). In the 2015 AM revitalization proceeding, the FCC proposed streamlining certain technical requirements to assist AM broadcasters in providing radio service to consumers. For example, many AM stations must directionalize their signals during some or all of the broadcast day in order to avoid interference with other AM stations. Maintaining a directional signal pattern can be technically complex, time-consuming, and expensive. Such stations are subject to a variety of rules requiring signal strength measurements and other engineering analyses to ensure compliance with their authorizations. In the *AMR Third R&O*, the FCC eliminated, clarified, or eased several of the rules governing AM stations using directional antenna arrays, which comprise almost 40 percent of all AM stations. First, the FCC relaxed the rule for partial proofs of performance of certain directional AM antenna systems, by reducing the number of field strength measurements required. Second, the FCC modified several rules pertaining to AM stations that use Method of Moments (MoM) models of directional array performance. MoM modeling allows broadcasters to verify antenna system performance through computer modeling, as opposed to sending engineers in the field to take field strength measurements. Thus, a proof using a MoM model is less expensive than taking field strength measurements of an AM station's directional pattern.

Specifically, the *AMR Third R&O* removed certain requirements and associated burdens contained in 47 CFR 73.151, 73.154, and 73.155. The rule changes adopted in the *AMR Third R&O* do not involve application changes, nor do they increase reporting requirements or record-keeping requirements beyond what is already required. To the extent they affect reporting or record-keeping requirements, they reduce those burdens for AM broadcasters operating with directional antenna arrays.

On September 24, 2008, the FCC adopted the Second Report and Order and Second Further Notice of Proposed Rulemaking in the matter of *An Inquiry Into the Commission's Policies and Rules Regarding AM Radio Service Directional Antenna Performance Verification*, MM Docket No. 93-177, FCC 08-228 (*Second Report and Order*). The *Second Report and Order* permits AM stations using directional antennas to use computer modeling techniques to verify AM directional antenna performance, thereby reducing the regulatory burden on these stations.

Directional AM stations use antennas which suppress radiated field in some directions and enhance it in others. Under our current rules, an AM licensee operating with a directional antenna must perform a proof of performance to demonstrate that the antenna pattern conforms to the station's authorization. An AM station must perform a full proof to verify the pattern shape when a new directional antenna system is authorized. Partial proofs, which require fewer measurements, are occasionally necessary to show that an array continues to operate properly. Typically, a full proof requires measurement of the AM station's field strength on six to twelve critical bearings, ranging to distances of 15 kilometers or more from the antenna. Subsequent graphical analysis of proof measurements also requires substantial time and expense. In contrast, the computer modeling techniques authorized in the *Second Report and Order* are based on internal measurements, making the proof process less time-consuming and expensive for AM licensees.

In order to control interference between stations and assure adequate community coverage, AM stations must conduct various engineering measurements to demonstrate that the antenna system operates as authorized. The following rule sections are included with this information collection.

This information collection does not affect individuals or households; thus, there are no impacts under the Privacy Act.

Statutory authority for this collection of information is contained in Sections 151, 152, 154(i), 303, and 307 of the Communications Act of 1934, as amended.

2. In order to control interference between stations and assure adequate community coverage, AM stations must conduct various engineering measurements to demonstrate that the antenna system operates as authorized. The data is used by station engineers to correct the operating parameters of the antenna. The data is also used by FCC staff in field investigations to ensure that stations are in compliance with the technical requirements of the Commission's rules.

3. Most, if not all, respondents are using electronic engineering programs to reduce the burden of calculating technical information. The use of information technology is not feasible for the recordkeeping and informal requests included in this collection.

4. This agency does not impose a similar information collection on the respondents. There is no similar data available.

5. In conformance with the Paperwork Reduction Act of 1995, the Commission is making an effort to minimize the burden on all respondents.

6. The frequency for this collection of information is determined by a station's detection of variance of operating parameters from allowed tolerances.

7. This collection of information is consistent with the guidelines in 5 CFR 1320.5(d)(2).

8. The Commission published a 60-day notice in the *Federal Register* pursuant to 5 CFR § 1320.8(d). *See* 85 FR 64460, dated October 13, 2020, seeking comments from the public on the information collection requirements contained in this supporting statement. No comments were received from the public.

9. No payment or gift was provided to the respondents.

10. There is no need for confidentiality with this collection of information.

11. This information collection does not address any private matters of a sensitive nature.

12. We estimate 1,800 AM stations will file multiple responses for these requirements. The respondents and/or a station engineer will complete most of the filings. We estimate the respondent's salary at $33.65/hour and the station engineer's salary at $22/hour. In addition, an in-house attorney with a salary of $40/hour will work on the requirements. These estimates are based on FCC staff's knowledge and familiarity with the availability of the data required.

Rule Sections	**Est. Number of Responses**	**Est. Hours for Respondent/ Station Engineer**	**Total Annual Burden Hours**	**Hourly "In-House" Cost**	**Total "In-House" Costs**
Section 73.54(c)	50	1	50	$22	$1,100
Section 73.54(d)	50	2	100	$33.65	$3,365
Section 73.61 (approved sampling system)	250	16	4,000	$22	$88,000
Section 73.61 (without approved sampling system)	820	8	6,560	$22	$144,320
Section 73.61 (with directional antennas)	200	25	5,000	$22	$110,000
Section 73.62(b)	250	4.5	1,125	$22	$24,750
Section 73.68(c)	60	1	60	$22	$1,320
Section 73.68(d)	100	1	100	$22	$2,200

Rule Sections	Est. Number of Responses	Est. Hours for Respondent/ Station Engineer	Total Annual Burden Hours	Hourly "In-House" Cost	Total "In-House" Costs
Section 73.68(e)	200	2	400	$22	$8,800
Section 73.68(f)	25	6	150	$22	$3,300
Section 73.69(c)	5	1	5	$22	$110
Section 73.69(d)(1)	5	2	10	$22	$220
Section 73.69(d)(5)	10	1	10	$22	$220
Section 73.151(c)(1)(ix)	50	1	50	$22	$1,100
Section 73.151(c)(1)(x)[2]					
Section 73.151(c)(2)(i)	100	15	1,500	$22	$33,000
Section 73.151(c)(3)	50	3	150	$22	$3,300
Section 73.154(a)	400 proofs	0.5	200	$33.65	$6,730
Section 73.154(d)	150 maps	0.5	75	$33.65	$2,523.75
Section 73.155	20	1	20	$22	$440
Section 73.158(b)	50[3]	5	250	$22	$5,500
Section 73.158(b)	50[4]	0.5	25	$40	$1,000
Section 73.3538(b)	20[5]	2	40	$22	$880

[2] Burden requirements for rule section 1.30003(b)(2) are found under OMB Control No. 3030-1121.
[3] Station engineer will complete this requirement and file with the FCC.
[4] In-house attorney will complete this requirement and file with the FCC.
[5] Station engineer will complete this requirement and file with the FCC.

Rule Sections	Est. Number of Responses	Est. Hours for Respondent/ Station Engineer	Total Annual Burden Hours	Hourly "In-House" Cost	Total "In-House" Costs
Section 73.3538(b)	20[6]	1	20	$40	$800
Section 73.3549	100[7]	2	200	$33.65	$6,730
Section 73.3549	100[8]	1	100	$40	$4,000
Totals:	**3,135 Responses**		**20,200 hours**		**$453,708.75**

Total Number of Annual Respondents: 1,800 AM Stations

Total Number of Annual Responses: 3,135 responses

Total Annual Burden Hours: 20,200 hours

Total Annual In-house Cost: $453,708.75

13. Annual Cost Burden: The respondent will use a consulting engineer for some measurements and a consulting attorney for certain submissions of information to the FCC. We estimate the consulting engineer's salary at $250/hour and the attorney salary at $300/hour.

Rule Sections	Est. Number of Responses	Est. Hours for Engineer/ Attorney	Hourly Cost	Annual Costs Burden
Section 73.54(c)	50	1	$250	$12,500
Section 73.54(d)	50	1	$250	$12,500

[6] In-house attorney will complete this requirement and file with the FCC.
[7] Respondent will complete this requirement and file with the FCC.
[8] In-house attorney will complete this requirement and file with the FCC.

Section 73.68(c)	100	1	$250	$25,000
Section 73.69(c)	5	1	$300	$1,500
Section 73.69(d)(1)	5	1	$300	$1,500
Section 73.69(d)(5)	10	1	$250	$2,500
Section 73.151(c)(1)(ix)	50	10	$250	$125,000
Section 73.151(c)(1)(x)[9]				
Section 73.151(c)(2)(i)	100	10	$250	$250,000
Section 73.151(c)(3)	50	10	$250	$125,000
Section 73.154(a)	400	5	$250	$500,000
Section 73.155	20	4	$250	$20,000
Section 73.158(b)	50[10]	1	$300	$15,000
Section 73.3538(b)	20[11]	1	$300	$6,000
Section 73.3538(b)	20[12]	1	$250	$5,000

[9] Burden requirements for rule section 1.30003(b)(2) are found under OMB Control No. 3030-1121.

[10] Respondent will use a consulting attorney to complete 50 of the 100 reviews under Section 73.158(b).
[11] Respondent will use a consulting attorney to review the informal applications under Section 73.3538.
[12] Respondent will use a consulting engineer to complete/review a portion of the requirements under Section 73.3538.

Section 73.3549	100[13]	1	$300	$30,000
Total Annual Cost Burden				**$1,131,500**

Total Annual Cost Burden: $1,131,500

14. Cost to the Federal Government: The Commission will use an engineer at the GS-12 step 5 level, $46.88/hour and a clerk at the GS-7 step 5 level, $26.43/hour to review and process information collections. The average processing times will range from 0.25 – 16 hours.

Rule Sections	FCC Staff Review Time	Reviewer	Hourly Salary	Number of Reviews	Cost to Federal Government
Section 73.54(c)	0.25 hours 0.50 hours	Clerk Engineer	$26.43 $46.88	50 50	$330.38 $1,172.00
Section 73.54(d)	0.25 hours 0.50 hours	Clerk Engineer	$26.43 $46.88	50 50	$330.38 $1,172.00
Section 73.61	0.25 hours	Clerk	$26.43	250	$1,651.88

[13] Respondent will use a consulting attorney to complete 100 of the 200 reviews under Section 73.3549.

Rule Sections	FCC Staff Review Time	Reviewer	Hourly Salary	Number of Reviews	Cost to Federal Government
	0.50 hours	Engineer	$46.88	250	$5,860.00
Section 73.61	0.25 hours 1 hour	Clerk Engineer	$26.43 $46.88	820 820	$1,318.15 $38.441.60
Section 73.61	0.25 hours 16 hours	Clerk Engineer	$26.43 $46.88	200 200	$1,321.50 $150,016.00
Section 73.62(b)	0.25 hours 2 hours	Clerk Engineer	$26.43 $46.88	250 250	$1,651.88 $23,440.00
Section 73.68(c)	0.25 hours 0.50 hours	Clerk Engineer	$26.43 $46.88	60 60	$660.75 $1,406.40
Section 73.68(d)	0.25 hours 0.50 hours	Clerk Engineer	$26.43 $46.88	100 100	$396.45 $2,344.00
Section 73.68(e)	0.25 hours 0.50 hours	Clerk Engineer	$26.43 $46.88	200 200	$1,321.50 $4,688.00
Section 73.69(c)	0.25 hours 0.50 hours	Clerk Engineer	$26.43 $46.88	5 5	$33.04 $117.20
Section 73.69(d)(1)	0.25 hours 0.50 hours	Clerk Engineer	$26.43 $46.88	5 5	$33.04 $117.20
Section 73.69(d)(5)	0.25 hours 0.50 hours	Clerk Engineer	$26.43 $46.88	10 10	$66.08 $234.40
Section 73.151(c)(1)(ix)	0.50 hours	Engineer	$46.88	60	$1,406.40
Section 73.151(c)(1)(x)[14]					

[14] Burden requirements for Section 1.30003(b)(2) are found under OMB Control No. 3030-1121.

Rule Sections	FCC Staff Review Time	Reviewer	Hourly Salary	Number of Reviews	Cost to Federal Government
Section 73.151(c)(2)(i)	24 hours	Engineer	$46.88	100	$112,512.00
Section 73.151(c)(3)	1 hour	Engineer	$46.88	60	$2,812.80
Section 73.154(a)	0.25 hours	Engineer	$46.88	400 proofs	$4,688.00
Section 73.154(d)	0.25 hours	Engineer	$46.88	50 maps	$586.00
Section 73.155	0.25 hours	Clerk	$26.43	10	$66.08
Section 73.158(b)	0.25 hours 1 hour	Clerk Engineer	$26.43 $46.88	50 50	$330.38 $2,344.00
Section 73.3538(b)	0.25 hours 1 hour	Clerk Engineer	$26.43 $46.88	40 40	$264.30 $1,875.20
Section 73.3549	0.25 hours 0.25 hours	Clerk Engineer	$26.43 $46.88	200 200	$1,321.50 $2,344.00
TOTAL:					**$368,674.49**

Total Cost to the Federal Government: $368,674 (rounded)

15. There are no program changes or adjustments to this information collection.

16. The data will not be published.

17. The expiration date of this information collection will be displayed at 47 CFR 0.408.

18. There are no exceptions to the Certification Statement.

B. Collections of Information Employing Statistical Methods:

No statistical methods are employed.