

FOR
FCC
USE
ONLY

**FCC 302-AM
APPLICATION FOR AM
BROADCAST STATION LICENSE**

(Please read instructions before filling out form.)

FOR COMMISSION USE ONLY
FILE NO.

SECTION I - APPLICANT FEE INFORMATION													
1. PAYOR NAME (Last, First, Middle Initial) Family Stations, Inc.													
MAILING ADDRESS (Line 1) (Maximum 35 characters) 112 North Elm Street													
MAILING ADDRESS (Line 2) (Maximum 35 characters)													
CITY Shenandoah		STATE OR COUNTRY (if foreign address) IA	ZIP CODE 51601										
TELEPHONE NUMBER (include area code) 712-246-5151		CALL LETTERS WFSI	OTHER FCC IDENTIFIER (If applicable) Facility ID No. 43864										
2. A. Is a fee submitted with this application?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No											
B. If No, indicate reason for fee exemption (see 47 C.F.R. Section													
<input type="checkbox"/> Governmental Entity <input checked="" type="checkbox"/> Noncommercial educational licensee <input checked="" type="checkbox"/> Other (Please explain):													
C. If Yes, provide the following information:													
Enter in Column (A) the correct Fee Type Code for the service you are applying for. Fee Type Codes may be found in the "Mass Media Services Fee Filing Guide." Column (B) lists the Fee Multiple applicable for this application. Enter fee amount due in Column (C).													
(A)	(B)	(C)											
FEE TYPE CODE	FEE MULTIPLE	FEE DUE FOR FEE TYPE CODE IN COLUMN (A)	FOR FCC USE ONLY										
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To be used only when you are requesting concurrent actions which result in a requirement to list more than one Fee Type Code.													
(A)	(B)	(C)											
FEE TYPE CODE	FEE MULTIPLE	FEE DUE FOR FEE TYPE CODE IN COLUMN (A)	FOR FCC USE ONLY										
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ADD ALL AMOUNTS SHOWN IN COLUMN C, AND ENTER THE TOTAL HERE. THIS AMOUNT SHOULD EQUAL YOUR ENCLOSED REMITTANCE.		TOTAL AMOUNT REMITTED WITH THIS APPLICATION	FOR FCC USE ONLY										
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SECTION II - APPLICANT INFORMATION		
1. NAME OF APPLICANT Family Stations, Inc.		
MAILING ADDRESS 112 North Elm Street		
CITY Shenandoah	STATE IA	ZIP CODE 51601

2. This application is for:

Commercial
 Noncommercial
 AM Directional
 AM Non-Directional

Call letters WFSI	Community of License Baltimore	Construction Permit File No. N/A	Modification of Construction Permit File No(s).	Expiration Date of Last Construction Permit
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3. Is the station now operating pursuant to automatic program test authority in accordance with 47 C.F.R. Section 73.1620?

Yes No

Exhibit No.

If No, explain in an Exhibit.

4. Have all the terms, conditions, and obligations set forth in the above described construction permit been fully met?

Yes No

Exhibit No.

If No, state exceptions in an Exhibit.

5. Apart from the changes already reported, has any cause or circumstance arisen since the grant of the underlying construction permit which would result in any statement or representation contained in the construction permit application to be now incorrect?

Yes No

Exhibit No.

If Yes, explain in an Exhibit.

6. Has the permittee filed its Ownership Report (FCC Form 323) or ownership certification in accordance with 47 C.F.R. Section 73.3615(b)?

Yes No

Does not apply

Exhibit No.

If No, explain in an Exhibit.

7. Has an adverse finding been made or an adverse final action been taken by any court or administrative body with respect to the applicant or parties to the application in a civil or criminal proceeding, brought under the provisions of any law relating to the following: any felony; mass media related antitrust or unfair competition; fraudulent statements to another governmental unit; or discrimination?

Yes No

Exhibit No.

If the answer is Yes, attach as an Exhibit a full disclosure of the persons and matters involved, including an identification of the court or administrative body and the proceeding (by dates and file numbers), and the disposition of the litigation. Where the requisite information has been earlier disclosed in connection with another application or as required by 47 U.S.C. Section 1.65(c), the applicant need only provide: (i) an identification of that previous submission by reference to the file number in the case of an application, the call letters of the station regarding which the application or Section 1.65 information was filed, and the date of filing; and (ii) the disposition of the previously reported matter.

8. Does the applicant, or any party to the application, have a petition on file to migrate to the expanded band (1605-1705 kHz) or a permit or license either in the existing band or expanded band that is held in combination (pursuant to the 5 year holding period allowed) with the AM facility proposed to be modified herein?

Yes No

If Yes, provide particulars as an Exhibit.

Exhibit No.

The APPLICANT hereby waives any claim to the use of any particular frequency or of the electromagnetic spectrum as against the regulatory power of the United States because use of the same, whether by license or otherwise, and requests and authorization in accordance with this application. (See Section 304 of the Communications Act of 1934, as amended).

The APPLICANT acknowledges that all the statements made in this application and attached exhibits are considered material representations and that all the exhibits are a material part hereof and are incorporated herein as set out in full in

CERTIFICATION

Yes No

1. By checking Yes, the applicant certifies, that, in the case of an individual applicant, he or she is not subject to a denial of federal benefits that includes FCC benefits pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C. Section 862, or, in the case of a non-individual applicant (e.g., corporation, partnership or other unincorporated association), no party to the application is subject to a denial of federal benefits that includes FCC benefits pursuant to that section. For the definition of a "party" for these purposes, see 47 C.F.R. Section 1.2002(b).

2. I certify that the statements in this application are true, complete, and correct to the best of my knowledge and belief, and are made in good faith.

Name Thomas Evans	Signature 	
Title President	Date 3/15/2022	Telephone Number 800-543-1495

WILLFUL FALSE STATEMENTS ON THIS FORM ARE PUNISHABLE BY FINE AND/OR IMPRISONMENT (U.S. CODE, TITLE 18, SECTION 1001), AND/OR REVOCATION OF ANY STATION LICENSE OR CONSTRUCTION

FCC NOTICE TO INDIVIDUALS REQUIRED BY THE PRIVACY ACT AND THE PAPERWORK REDUCTION ACT

The solicitation of personal information requested in this application is authorized by the Communications Act of 1934, as amended. The Commission will use the information provided in this form to determine whether grant of the application is in the public interest. In reaching that determination, or for law enforcement purposes, it may become necessary to refer personal information contained in this form to another government agency. In addition, all information provided in this form will be available for public inspection. If information requested on the form is not provided, the application may be returned without action having been taken upon it or its processing may be delayed while a request is made to provide the missing information. Your response is required to obtain the requested authorization.

Public reporting burden for this collection of information is estimated to average 639 hours and 53 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden, can be sent to the Federal Communications Commission, Records Management Branch, Paperwork Reduction Project (3060-0627), Washington, D. C. 20554. Do NOT send completed forms to this address.

THE FOREGOING NOTICE IS REQUIRED BY THE PRIVACY ACT OF 1974, P.L. 93-579, DECEMBER 31, 1974, 5 U.S.C. 552a(e)(3), AND THE PAPERWORK REDUCTION ACT OF 1980, P.L. 96-511, DECEMBER 11, 1980, 44 U.S.C. 3507.

SECTION III - LICENSE APPLICATION ENGINEERING DATA

Name of Applicant
Family Stations, Inc.

PURPOSE OF AUTHORIZATION APPLIED FOR: (check one)

Station License Direct Measurement of Power

1. Facilities authorized in construction permit					
Call Sign WFSI	File No. of Construction Permit (if applicable) N/A	Frequency (kHz) 860	Hours of Operation Unlimited	Power in kilowatts	
				Night 0.066	Day 2.5
2. Station location					
State Maryland			City or Town Baltimore		
3. Transmitter location					
State MD	County Baltimore		City or Town Rosedale	Street address (or other identification) 8049 Edgewater Ave	
4. Main studio location					
State TN	County Williamson		City or Town Franklin	Street address (or other identification) 4057 Rural Plains Cir., Suite 300B	
5. Remote control point location (specify only if authorized directional antenna)					
State TN	County Williamson		City or Town Franklin	Street address (or other identification) 4057 Rural Plains Cir., Suite 300B	

6. Has type-approved stereo generating equipment been installed?

Yes No

7. Does the sampling system meet the requirements of 47 C.F.R. Section 73.68?

Yes No

Not Applicable

Attach as an Exhibit a detailed description of the sampling system as installed.

Exhibit No.
B

8. Operating constants:						
RF common point or antenna current (in amperes) without modulation for night system 1.15			RF common point or antenna current (in amperes) without modulation for day system 7.35			
Measured antenna or common point resistance (in ohms) at operating frequency			Measured antenna or common point reactance (in ohms) at operating frequency			
Night	Day	Night	Day	Night	Day	
50	50	0	0	---	---	
Antenna indications for directional operation						
Towers	Antenna monitor Phase reading(s) in degrees		Antenna monitor sample current ratio(s)		Antenna base currents	
	Night	Day	Night	Day	Night	Day
Tower 1	+141.6	+141.6	0.600	0.600	---	7.4
Tower 2	0	0	1.0	1.0	---	12.9
Tower 3	-143.1	-143.1	0.530	0.530	---	6.72
Manufacturer and type of antenna monitor: Potomac Instruments 1901-3						

9. Description of antenna system ((f directional antenna is used, the information requested below should be given for each element of the array. Use separate sheets if necessary.)

Type Radiator See Exhibit A	Overall height in meters of radiator above base insulator, or above base, if grounded.	Overall height in meters above ground (without obstruction lighting)	Overall height in meters above ground (include obstruction lighting)	If antenna is either top loaded or sectionalized, describe fully in an Exhibit. Exhibit No.
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Excitation Series Shunt

Geographic coordinates to nearest second. For directional antenna give coordinates of center of array. For single vertical radiator give tower location.

North Latitude 39 ° 18 ' 43 "	West Longitude 76 ° 29 ' 26 "
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If not fully described above, attach as an Exhibit further details and dimensions including any other antenna mounted on tower and associated isolation circuits.

Exhibit No.
C

Also, if necessary for a complete description, attach as an Exhibit a sketch of the details and dimensions of ground system.

Exhibit No.
D

10. In what respect, if any, does the apparatus constructed differ from that described in the application for construction permit or in the permit?

A Construction Permit is not required in this instance. It is to correct the theoretical nighttime directional parameters on the license.

11. Give reasons for the change in antenna or common point resistance.

No change in antenna or common point resistance. Please see #10 above.

I certify that I represent the applicant in the capacity indicated below and that I have examined the foregoing statement of technical information and that it is true to the best of my knowledge and belief.

Name (Please Print or Type) Thomas R. Ray, III	Signature (Check appropriate box below) 
Address (include ZIP Code) 377 Chestnut Avenue New Windsor, NY 12553	Date 03/09/2022
	Telephone No. (Include Area Code) 845-401-3757

Technical Director

Registered Professional Engineer

Chief Operator

Technical Consultant

Other (specify)



Tom Ray

Broadcast Consulting, LLC.

377 Chestnut Avenue | New Windsor, NY 12553 | 845-418-5065

ENGINEERING STATEMENT TO SUPPORT
CORRECTION OF THEORETICAL PARAMETERS FOR
NIGHTTIME OPERATION OF
WFSI, BALTIMORE, MD
MARCH 9, 2022

Family Stations, Inc., licensee of station WFSI, Facility ID 43864, Baltimore, MD, has retained Tom Ray Broadcast Consulting, LLC to request corrections to the theoretical parameters for nighttime operation to station WFSI as shown on a license issued March 6, 2020, File Number BZ-20191121AAI. Thomas R. Ray, III holds FCC General Class Radiotelephone license PG-017214, Amateur Extra license W2TRR, and is Certified by the Society of Broadcast Engineers as a Certified Professional Broadcast Engineer with specialty Certifications in AM Directional Antennas and Digital Broadcast, Radio. He has 45 years of experience in the industry and his works are a matter of record before the Commission.

The above referenced license, as issued, lists tower numbers out of order with theoretical parameters that do not match the daytime parameters for nighttime operation. Additionally, it shows slightly different tower orientations for nighttime operation. WFSI does not have a second set of towers for nighttime operation. It also does not have a day/night phasor arrangement – daytime and nighttime parameters are identical for directional operation. In fact, neither Family Stations nor myself know where these nighttime numbers came from, as we did not submit them.

Rule changes in December of 1984 allowed then Class IV (now Class D) stations to operate with Post Sunset Authority power. WFSI (then known as WBGR) was one of those stations. In September of 1985, WFSI was informed that they could operate on a permanent basis with 65.7 Watts at night. Mortensen Broadcasting Company, then owner of WFSI, informed the Commission by letter on October 17, 1985, that they were commencing nighttime operation. To my knowledge, the station has been operating at night at 65.7 Watts with their authorized daytime antenna since that date. I do note in the FCC paperwork (included for your reference) that there is a statement that says, “The Station Authorization to be used for this purpose is the antenna system noted on the nighttime authorization”. Based on all information I can locate, there was never a separate nighttime antenna system nor separate antenna system authorization for nighttime operation. Therefore, the daytime operating parameters of the directional system should be used for nighttime operation as was typically the case with Class IV stations authorized for nighttime operation.

Running the nighttime theoretical parameters listed on the license issued in 2020 on a computer simulation shows that this is the same pattern with the following exception: the nulls are pushed out slightly at night. Therefore, running daytime parameters, which WFSI has been doing, provides more protection at night.

Both daytime and nighttime **theoretical** directional parameters should be as such:

Tower #	Field Ratio	Phasing (Deg)	Spacing (Deg)	Orientation (Deg)	Tower Ref Switch *	Height (Deg)
1	0.5640	142.10	74.00	39.770	0	75.5
2	1.000	0	0	0	0	75.5
3	0.5640	-142.10	74.00	220.260	0	75.5

*Tower Reference Switch

0 = Spacing and Orientation from Reference Tower

1 = Spacing and Orientation from Previous Tower

Operating parameters are also identical day and night and are as listed on the enclosed 302-AM.

Antenna Structure Registration Numbers are correct as listed on the license:

Tower 1 = 1029960

Tower 2 = 1029961

Tower 3 = 1029962

Enclosed you will find the paperwork as submitted by the FCC in 1984 and 1985. You will also find a 302-AM. There is no place in the 302-AM to show correction of the nighttime theoretical parameters: therefore, they have been included above.

Below, you will find exhibits as noted in the 302-AM.

EXHIBIT A

All three towers of the WFSI antenna system are uniform cross section steel towers, with a height above the base insulator of 73.1 Meters, an overall height above ground without obstruction lighting of 74.6 Meters, and an overall height with obstruction lighting of 75.2 Meters. Station WBMD, owned by Relevant Radio, Inc., is diplexed onto Tower 3 of the WFSI array.

EXHIBIT B

The Sample System consists of equal lengths of phase stabilized Cablewave FCC38-50J coax. Except where the cables enter the building to terminate at the antenna monitor, all cables are exposed to the same environmental conditions in the field, and meets the requirements of 47CFR73.68.

EXHIBIT C

There is an FM antenna mounted at the top of the tower for translator W295BX, also owned by Family Stations, Inc. There is a transmission line running from the antenna to the base of the tower where it is connected to an isocoupler. The transmission line is bonded to the tower at appropriate locations.

EXHIBIT D

The ground system consists of 120, 49-m to 76-m equally spaced, buried, copper radials plus a 7.3-m x 7.3-m copper ground screen about each tower. Radials are shortened and bonded to transverse copper strap midway between towers.

REVISED PARAMETERS FOR OPERATION UNDER POST-SUNSET AUTHORITY (PSSA)
 (Post this letter with your current authorization)

THIS AUTHORIZATION SUPERSEDES ANY PREVIOUS POST-SUNSET AUTHORITY

On December 10, 1984, Post-Sunset operation as set forth below can begin.

These values may not be exceeded, but operation at lower power is permitted.

CALL: WBGR CITY: BALTIMORE STATE: MD CALCULATIONS BASED ON:
 FREQUENCY: 860 KHZ ANTENNA: DAYTIME LICENSED FACILITIES

MONTH	TIME PERIOD	POWER WATTS	CONV. FACTOR	MONTH	TIME PERIOD	POWER WATTS	CONV. FACTOR
JAN	5:00- 6:00 6:00- 7:00	118.5 67.1	0.3442 0.2591	JULY	8:30- 9:30 9:30-10:30	165.4 67.1	0.4066 0.2591
FEB	5:45- 6:45 6:45- 7:45	125.0 67.1	0.3536 0.2591	AUG	8:00- 9:00 9:00-10:00	154.0 67.1	0.3925 0.2591
MAR	6:15- 7:15 7:15- 8:15	134.0 67.1	0.3660 0.2591	SEP	7:15- 8:15 8:15- 9:15	140.6 67.1	0.3750 0.2591
APR (STD.) (TIME)	6:45- 7:45 7:45- 8:45	146.8 67.1	0.3831 0.2591	OCT (ADV.) (TIME)	6:30- 7:30 7:30- 8:30	128.2 67.1	0.3580 0.2591
APR (ADV.) (TIME)	7:45- 8:45 8:45- 9:45	146.8 67.1	0.3831 0.2591	OCT (STD.) (TIME)	5:30- 6:30 6:30- 7:30	128.2 67.1	0.3580 0.2591
MAY	8:15- 9:15 9:15-10:15	160.2 67.1	0.4002 0.2591	NOV	4:45- 5:45 5:45- 6:45	120.9 67.1	0.3477 0.2591
JUNE	8:30- 9:30 9:30-10:30	169.7 67.1	0.4120 0.2591	DEC	4:45- 5:45 5:45- 6:45	116.5 67.1	0.3414 0.2591

(All times listed are PM local time)

NOTE: Until further notice NO PSSA OPERATION IS PERMITTED BEYOND 6:00 P.M.

Notice will be given when this restriction can be lifted. Until then the station may operate beyond 6:00 P.M. only during those months in which regular daytime operation is permitted by its license

FEDERAL COMMUNICATIONS COMMISSION
 WASHINGTON D.C. 20554
 DECEMBER 5, 1984

FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, D. C. 20554
September 23, 1985

ORDER TO SHOW CAUSE

Unless you object, the license of station WBGR, BALTIMORE, MD, will be modified pursuant to Section 316(a) of the Communications Act of 1934, as amended, to specify nighttime operation. This will permit you to operate at night with a nominal power of 65.7 watts. (Instructions for calculating the actual operating power are enclosed.)

* * * * *

IF YOU AGREE TO THIS MODIFICATION the station may begin nighttime operation on September 23, 1985, after sending the required notification to the Commission. The instructions for this are set forth on the enclosed instruction sheet.

IF YOU OBJECT TO THIS MODIFICATION you may, Pursuant to SECTION 1.87 of the Commission's Rules, request that a hearing be held on the proposed modification or file a written statement in opposition to the modification proposed in this Order to Show Cause. In such case, the Commission will conclude that Station WBGR does not wish to have nighttime operation and the station license will not be so modified. Instead, the station will retain its current daytime only authorization.

----- THE DEADLINE FOR FILING SUCH AN OBJECTION IS NOVEMBER 5, 1985. -----

PLEASE NOTE: In the event the Commission receives no written opposition to the proposed modification, the right to a hearing will be considered to have been waived, and the licensee of Station WBGR will be deemed to have consented to the modification. In such case the station must begin nighttime operation within a year of the date of this Order to Show Cause and must comply with the rules applicable to such operation.

OPERATING PARAMETERS FOR NIGHTTIME OPERATION

CALL SIGN: WBGR	CITY: BALTIMORE	STATE: MD	CALCULATIONS BASED ON:
FREQUENCY: 860 kHz	ANTENNA: DAYTIME		LICENSED FACILITIES
NOMINAL POWER WATTS: 65.7		CONVERSION FACTOR: 0.2563	

THIS LETTER SHOULD BE POSTED AS PART OF THE STATION'S LICENSE

THIS AUTHORIZATION IS SUBJECT TO ANY ACTIONS WHICH MAY BE REQUIRED AS A RESULT OF THE PENDING PETITION FOR RECONSIDERATION.

Federal Communications Commission
Washington, D. C. 20554

TECHNICAL MATTERS

CALCULATION OF ANTENNA INPUT POWER

The nominal power listed is not necessarily the same as the Antenna Input Power. To determine the Antenna Input Power permitted during NIGHTTIME OPERATION; multiply the INPUT POWER listed on the station authorization FOR the antenna system noted above by the SQUARE of the ANTENNA CURRENT CONVERSION FACTOR. The Antenna Current or Common Point Current permitted during NIGHTTIME OPERATION is obtained by multiplying the ANTENNA CURRENT CONVERSION FACTOR by the AUTHORIZED ANTENNA CURRENT or COMMON POINT CURRENT.

DEFINITIONS OF TERMS USED IN AUTHORIZATION

NOMINAL POWER: The approximate power that the station can use. It is listed only to provide general reference.

ACTUAL POWER: The actual power used by the station.

ANTENNA INPUT POWER: Same as actual power.

CONVERSION FACTOR: The number used to calculate the actual power to be used. See CALCULATION METHOD listed below.

CALCULATION METHOD: To determine the antenna current (or common point current) for nighttime operation, multiply the antenna current (or common point current) shown on the station's authorization* by the Conversion Factor given on the authorization for nighttime operation.

* The station authorization to be used for this purpose is the antenna system noted on the nighttime authorization.

EXPLANATION OF OPERATING PERIOD FOR NIGHTTIME OPERATION

Nighttime operation begins at local sunset and continues until local sunrise. The sunrise and sunset times are given on your current station authorization.

STATUS OF POST-SUNSET AUTHORITY

Some stations have post-sunset authorizations that allow operation for up to two hours after local sunset. Instead of changing to nighttime operation at local sunset, these stations may continue to operate under their post-sunset authorization during the period specified for such operation. At the conclusion of this period, operation must be in accordance with the station's nighttime authorization.

NOTIFICATION PROCEDURE

Before beginning NIGHTTIME operation for the first time, a letter must be submitted identifying the station, its call sign and location as well as the method to be used to achieve any needed power reduction.

Send the letter to:

Chief, AM Branch, Audio Services Division, Mass Media Bureau, Room 342,
Federal Communications Commission, Washington, D.C. 20554.

ADDITIONAL POWER INCREASE

In addition to the nighttime operation permitted by this authorization stations have also been given the opportunity to further increase their power as noted below.

During a five-year period after the issuance of the Show Cause Order, the station may continue to operate at night with the power set forth in the Show Cause Order. It also may file an application to increase that power up to a maximum of 500 watts so long as it does not exceed its authorized daytime power. The station is required to provide interference protection to the fulltime domestic and foreign cochannel stations now operating. However, it will not be necessary to provide nighttime protection to the new stations to be authorized on your frequency or to the nighttime operations of other former daytime-only stations on this frequency. This situation will continue for five years to provide ample opportunity for any desired increases in power.

After this five year period ends, two basic changes will occur. First, the maximum nighttime power will be increased to 1 kW, and existing stations will be able to propose increasing their power to this level. However, all existing nighttime operations of 250 watts or more will be protected from additional interference. This includes the former daytime-only stations. In addition, applications for new stations can continue to be filed, and they will be subject to the above requirements as to power level and interference protection.

FOR ADDITIONAL INFORMATION PLEASE CALL

Frederic D. Schottland
Policy and Rules Division, Mass Media Bureau at (202) 632-5414

9660



MORTENSON BROADCASTING COMPANY

120 Cleveland Avenue North, Canton, Ohio 44702
Canton 216-452-4009 Akron 216-253-4262

October 17, 1985

Chief, AM Branch
Audio Services Division
Mass Media Bureau Room 342
Federal Communications Commission
Washington, D.C. 20554

RE: Nighttime Operation for
WBGR, 860kHz, Baltimore, Md.

Dear Sirs:

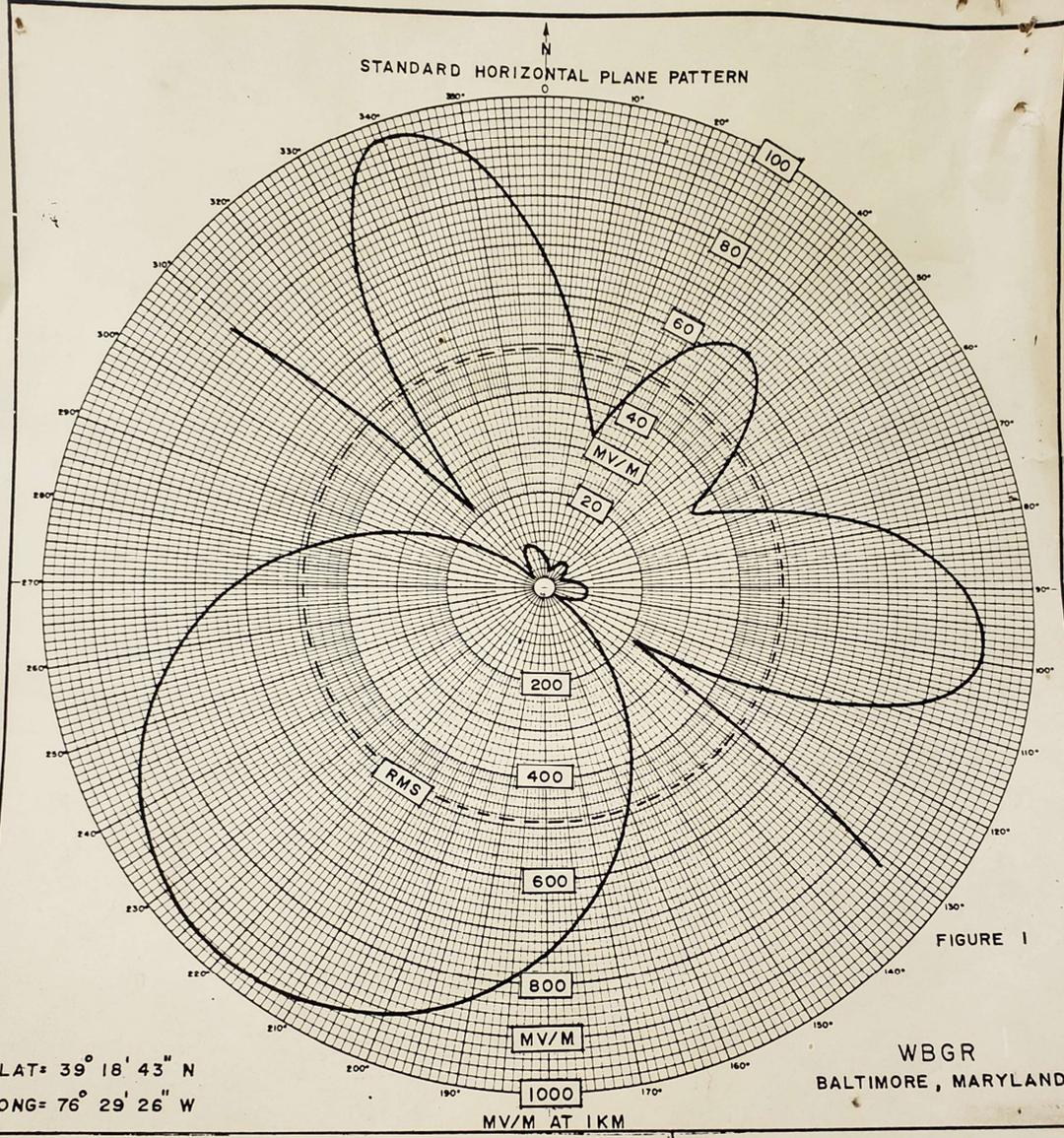
This letter is to serve notice that Radio Station WBGR, 860 kHz. Baltimore, Maryland. will use nighttime operation as outlined in the September 23, 1985 Show Cause Order.

Power reduction will be made by the same method as outlined in the WBGR Pre-Sunrise operation using a power divider network between the transmitter and the antenna phasor.

Sincerely,

A handwritten signature in cursive script, appearing to read 'David S. Johnson', is written over the typed name.

David S. Johnson
Technical Director
Mortenson Broadcasting Co.



LAT = 39° 18' 43" N
 LONG = 76° 29' 26" W

WBGR
 BALTIMORE, MARYLAND

FIGURE 1

TOWER	FIELD RATIO	PHASE DEGREES	SPACING DEGREES	BEARING DEGREES	TOWER DEGREES
1	0.564	142.1	74.0	39.77	75.5
2	1.000	0.0	0.0	0.00	75.5
3	0.564	-142.1	74.0	220.26	75.5

POWER	= 2.5 KW	FREQUENCY	= 860 KHZ
RMS THEORETICAL	= 463.11 MV/M	MULTIPLYING K	= 648.09 MV/M
RMS STANDARD	= 486.75 MV/M	RMS AUGMED	= 487.11 MV/M
GROUND LOSS	= 2.10 OHMS	GND LOSSES	= 0.91 KW
ERSS	= 829.00 MV/M	RSS/RMS	= 1.79
ARRAY Q	= 20.72 MV/M		

AUGMENTATION DATA			
NUMBER	BEARING	SPAN	FIELD
1	2.0°	44.0°	63.37 MV/M
2	78.0°	44.0°	65.98 "
3	340.0°	44.0°	96.56 "

ROBERT E. RITCH
 CONSULTING RADIO ENGINEERS
 P.O. BOX 707
 GREEN VALLEY, ARIZONA 85614
 (602) 648-0163