

COORDINATION POLICY AND GUIDELINES

of the **Southeastern Repeater Association, Inc.**

Date Version 060924.0.1

Representing Coordination and VHF/UHF interests throughout Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, and West Virginia.

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A guide for our Frequency Coordinators and for the prospective repeater owner and/or trustee explaining rules on how to achieve coordinated status and governing their duties for operating and maintaining repeaters in the VHF, UHF, and microwave amateur frequency spectrum as set forth according to the Federal Communications Commission (FCC), and by the South Eastern Repeater Association, Inc. (SERA) which is the recognized coordinating body of the member states in the southeastern United States.

INTRODUCTION

The **SERA Coordination Policy and Guidelines** were rewritten at the request of the Board of Directors and approved at the annual meeting in January 1987, with updates approved in January and July 1995, and June 2013, June 2014. A rewrite was updated in November 2016 and a total rewrite was completed October 1st., 2023. The rewrite was required to update the old coordination policies. and to coincide with new FCC Policies, concerning repeater councils, repeater owners, trustees, and users. The rewrite sought to cover every area involving repeater coordination and was based on FCC information and rules governing the operation of repeater councils across the nation. The policy is written in such a way as to explain in detail what is required by FCC Rules and Regulations and recommendations for coordination procedures when placing a repeater on the air. This document is intended to complement the SERA By-Laws and is the detailed policy of SERA.

This document covers in detail the recommended allocations to various modes of operation in the Amateur Radio Service on VHF, UHF, and microwave bands. SERA has made every effort to allocate frequencies for operational capabilities in every amateur radio mode and the SERA feels that the best interest of all amateurs will be served for years to come.

As the amateur frequency spectrum becomes more crowded, future adherence to these guidelines will foster pleasing operation on VHF, UHF, and microwave amateur bands in our service area, as well as good relationships among repeater owners, trustees, and users throughout the SERA districts. Although coordination is voluntary, in all cases of conflict an uncoordinated repeater bears the primary responsibility of resolving most problems. The SERA Coordination Policy and Guidelines are written for those who wish to coordinate, giving a clear definition of what is required of the repeater owner and/or trustee to acquire coordinated status. Since 1971, voluntary compliance by repeater owners and/or trustees and users has been and will continue to make our coordinating system work.

POLICY 1 - GENERAL INTRODUCTION

Originally formed in 1971 as the North Carolina FM Repeater Association, in 1973, becoming the Carolinas-Virginia Repeater Association, Inc., and in 1981, CVRA-South- Eastern Repeater Association, Inc. (CVRA-SERA) and in 1987, Southeastern Repeater Association, Inc. (SERA), the Association is the recognized amateur frequency coordinating body for the following geographical areas:

DISTRICTS:

- A. the entire state of NORTH CAROLINA,
- B. the state of VIRGINIA, south of a line formed by the 38-degree parallel of latitude extending from the Atlantic Ocean, west to U.S. Route 33, then following U.S. Route 33 to the West Virginia State line,
- C. the entire state of SOUTH CAROLINA,
- D. the entire state of TENNESSEE,
- E. the state of WEST VIRGINIA, except an easternmost area referred to as the "panhandle", which is made up of the counties of: Berkeley, Hampshire, Hardy, Jefferson, and Morgan,
- F. the entire state of KENTUCKY,
- G. the entire state of GEORGIA, and
- H. the entire state of MISSISSIPPI.

A. ***POLICY 2 - FREQUENCY COORDINATORS***

SERA Frequency Coordinators are the Directors, Vice Directors, and their Assistants in each district. Their job is to make maximum use of frequencies available for amateur use by using the SERA Coordination Policy and Guidelines with the cooperation of the owners and repeater trustees.

POLICY 3 - FIXED COORDINATION

SERA coordinates Repeaters in those amateur frequency segments as authorized by the FCC. **Digi-repeater** is usually a simplex operating system. **Duplex systems** that utilize FM repeater input and output pairs are classified as repeaters, operating analog and/or digital, and shall be coordinated by the SERA, as would any other FM repeater pair.

As a rule, SERA does not honor requests for repeater pairs that are contrary to our recommended plan, which has been designed for maximum utilization of frequencies in our areas.

POLICY 4 – FREQUENCIES

DEFINITIONS:

Coordinated frequency	The frequency assigned to a given repeater or proposed for a new repeater.
Co-channel	Other repeaters on the same frequency as the coordinated or proposed repeater frequency.
Channel spacing	The spacing in kHz between a set of designated channel frequencies. Note that channelized frequency set can be Interleaved between other channel sets.
Frequency spacing	The actual spacing in kHz between one assigned frequency and the next – typically seen between interleaved channel sets.
Adjacent channel	Other assigned frequencies (not necessarily from the same channel set) bordering on either side of an assigned frequency at some kHz interval.
Offset	The frequency spacing in kHz between the input and output frequencies of a repeater.
Narrow band FM	2.5 kHz peak frequency deviation with 11 to 12.5 kHz bandwidth consumption.
Wide band FM	5.0 kHz peak frequency deviation with 13 to 16 kHz bandwidth consumption.

Recommended Repeater Frequency Utilization:

29.520–29.680 MHz	Ten-meter pairs are issued with low in, high out, with a 100 kHz offset. Channel spacing and frequency spacing is 20 kHz.
50–54 MHz	Six-meter pairs are issued low in, high out, and a 1 MHz offset. Channel spacing and frequency spacing is 20 kHz.
144–148 MHz	Two-meter pairs are issued with either a plus or minus offset (600) kHz and some wide-split offsets of 1400 and 2500 kHz depending on the frequency. Frequency spacing can range from 10 kHz, 12.5 kHz, 15kHz or 20 kHz
222–225 MHz**	All 222 MHz pairs are issued with a minus (-) 1.6 MHz offset and 20 kHz channel spacing.
440–449 MHz	440 MHz pairs are issued with a plus (+) 5 MHz offset, high input, low output, and 25 kHz channel spacing and 12.5 kHz frequency spacing.
902–928 MHz**	All 902 MHz pairs are issued with a minus (-)12 MHz offset or -25 MHz offset, low input, high output, with 12.5 kHz channel spacing from 25 MHz offset, and 100 kHz channel spacing for 12 MHz offset. See Frequency Utilization Plan (FUP) for further details).
1240–1300 MHz	Conforms to the ARRL 1.2 GHz band plan. 12.5 kHz and 25 kHz frequency spacing between coordinated frequencies

POLICY 5 - REPEATER COORDINATION PARAMETERS

Labels for Describing Use of Available Frequency Channels:

Simplex and Repeater frequencies are organized in a manner that attempts to maximize available frequencies for simplex and repeater operation and mitigates interference. This is accomplished, in some cases, by interleaving repeater wide-band pairs with narrow-band pairs, and, in some instances can include simplex frequencies.

To achieve the maximum availability of repeater and simplex channels, proper placing of wide-band, narrow-band repeater, and simplex transmissions is necessary. Channels are usually configured in 10 kHz (two meters) and 12.5 kHz width (440 et al). Wide-band transmissions use 5.0 kHz peak frequency deviation and consume 13 to 16 kHz of bandwidth. Narrow-band transmissions, however, use 2.5 kHz peak frequency deviation and consume 11 to 12.5 kHz of bandwidth. Interleaved channels allow for this mixed bandwidth environment. For this reason, it is imperative that wide-band and narrow-band repeater transmissions be properly placed (coordinated) for their expected transmission technology or mixed transmission technologies.

Wide-band transmission technologies can only be assigned to wide-band channels. Narrow-band transmission technologies are assigned to narrow-band channels and can also be assigned to wide-band channels. If a repeater trustee wishes to introduce a wide-band technology on his/her narrow-band channel assignment, it will need to be re-coordinated on a wide-band channel.

Label Descriptors for Defining Channel Use:

NBD - Narrow-band digital – DStar, NXDN, P25, DMR, et al, 2.5kHz analog, 2.5kHz analog in mixed-mode

WBD - Wide-band digital – Fusion (*wide-band pair required*)

WBA - Wide-band analog – on designated wide-band pairs, 5.0kHz analog, 5.0kHz analog in mixed-mode

These labels are used to describe what frequencies can be used based on the transmission technology of the given band plan. Each of the frequency band plans – listed below – provides a link to a detailed Frequency Utilization Plan (FUP) that expands the view of available wide-band and narrow-band repeater pairs and simplex channels.

Factors for Coordination:

Please review these policies.

- A. Terrain height, tower height, and power restrictions – See Policy 7 & 9
- B. **Responsibility for maintaining contact information and operational status of your record(s) See Policy 13**
- C. **Annual re-certification – See policy 13**
- D. de-coordinating a repeater – See Policy 17
- E. Changing location after original coordination – See Policy 9

29 MHz (10 meters) REPEATER COORDINATION PARAMETERS – 29.520 to 29.680 MHz: -----

1. 29 MHz **Co-channel** mileage spacing distance: 100 miles

Note: Repeaters on 29 MHz may require special consideration when determining mileage for co-channel spacing. Coordination for repeaters on these bands will be considered on a case-by-case basis. Additionally, coordination may require contact with many neighboring states that may, or may not, be a SERA District. See **POLICY 6** regarding variances.

Input Range	Output Range	Adjacent	Offset Split	Permitted Modes / Constraints
29.520 – 29.580	29.680 – 29.740	20 kHz	100 kHz	FM Analog

2. Mileage spacing distances for 29 MHz **Adjacent Frequencies** (16K0F3 and 20K0F3 emission)

a. 29.520 - 29.680 MHz: 25 miles for 20 kHz adjacent channels.

Frequency plan: <https://sera.org/wp-content/uploads/2016/11/sera-fup-29.pdf>



50 MHz (6 Meters) REPEATER COORDINATION PARAMETERS 51.200 to 51.980 and 52 to 54 MHz: -----

1. 50 MHz **Co-channel** mileage spacing distance: 100 miles

Note: Repeaters on 50 MHz may require special consideration when determining mileage for co-channel spacing. Coordination for repeaters on these bands will be considered on a case-by-case basis. Additionally, coordination may require contact with many neighboring states that may, or may not, be a SERA District. See **POLICY 6** regarding variances.

Input Range	Output Range	Adjacent	Offset Split	Permitted Modes / Constraints
52.010 – 52.910	53.010 – 53.910	20 kHz	1 MHz	All modes
51.200 – 51.480	51.700 – 51.980	20 kHz	500 kHz	All modes
51.120 – 51.180	51.620 – 51.680	20 kHz	500 kHz	All modes

2. Mileage spacing distances for 50 MHz **Adjacent Frequencies** (16K0F3 and 20K0F3 emission)

a. 51 – 54 MHz: 25 miles for 20 kHz adjacent channels.

Frequency Plan: <https://sera.org/wp-content/uploads/2016/11/sera-fup-50.pdf>



145 MHz REPEATER COORDINATION PARAMETERS – 144 to 148 MHz: -----

1. Two-Meter **Co-channel** mileage spacing distance: 100 miles

Note: Coordination requests within 100 miles of a non-SERA state requires frequency coordination with the frequency coordinating entity. See **POLICY 6** regarding variances.

NBD - Narrow-band digital – DStar, NXDN, P25, DMR, 2.5kHz analog, 2.5kHz analog in mixed-mode

WBD - Wide-band digital – Fusion (*wide-band pair required*)

WBA - Wide-band analog – on designated wide-band pairs, 5.0kHz analog, 5.0kHz analog in mixed-mode

Input Range	Output Range	Adjacent	Offset Split	Permitted Modes / Constraints
144.510 - 144.850	145.110 - 145.450	10 & 20 kHz	600 kHz	WBA, WBD, NBD
144.520 - 144.860	145.120 - 145.460	10 & 20 kHz	600 kHz	NBD
147.420 - 147.480	144.920 - 144.980	10 & 20 kHz	2500 kHz	NBD
146.420 - 146.480	145.020 - 145.080	10 & 20 kHz	1400 kHz	NBD
146.010 – 147.990 *		15 kHz	600 kHz	WBA, WBD, NBD

See the Frequency Utilization Plan (FUP) for more details at the link below. * Not including simplex frequencies 146.520 thru 146.595.

2. Minimum Mileage spacing distances for 2-Meter **Adjacent Repeaters**:

- a. 144-145 MHz: adjacent channels at 20 kHz frequency spacing – 25 miles of separation
- b. 144-145 MHz: adjacent channels at 10 kHz frequency spacing – 35 miles of separation
- c. 144-148 MHz: adjacent channels at 12.5 kHz frequency spacing – 35 miles of separation
- d. 146-148 MHz: adjacent channels at 15 kHz frequency spacing – 35 miles of separation

Frequency Plan: <https://sera.org/wp-content/uploads/2016/11/sera-fup-144.pdf>



220 REPEATER COORDINATION PARAMETERS – 222 to 225 MHz: -----

1. 222 **Co-channel** distance spacing: 100 miles

Note: Coordination requests within 100 miles of a non-SERA state requires frequency coordination with the frequency coordinating entity. See **POLICY 6** regarding variances.

Input Range	Output Range	Adjacent	Offset Split	Permitted Modes / Constraints
222.500 – 223-380	224.100 – 224.980	20 kHz	1.6 MHz	All modes

2. Minimum mileage spacing distances for 222 **Adjacent Repeaters** (16K0F3 and 20K0F3):

a. 222 MHz repeaters: 25 miles for 20 kHz adjacent channels.

Frequency Plan: <https://sera.org/wp-content/uploads/2016/11/sera-fup-220.pdf>



440 REPEATER COORDINATION PARAMETERS – 440 TO 450 MHz: -----

1. 440 **Co-channel** distance spacing: 75 miles

Note: Coordination requests within 75 miles of a non-SERA state requires frequency coordination with the frequency coordinating entity.

NBD - Narrow-band digital – DStar, NXDN, P25, DMR, 2.5kHz analog, 2.5kHz analog in mixed-mode

WBD - Wide-band digital – Fusion (*wide-band pair required*)

WBA - Wide-band analog – on designated wide-band pairs, 5.0kHz analog, 5.0kHz analog in mixed-mode

Input Range	Output Range	Adjacent	Offset Split	Permitted Modes / Constraints
445.5125-445.7250	440.5125-440.7250	12.5 kHz	5 MHz	NBD
446.8000-449.9750	441.8000-444.9750	12.5 kHz	5 MHz	WBA, WBD, NBD
446.8125-449.9875	441.8125-444.9875	12.5 kHz	5 MHz	NBD

Rows 2 and 3 are interleaved frequency pairs.

2. Minimum Mileage spacing distances for 440 **Adjacent Repeaters**:

When *Adjacent frequency spacing* is 25 kHz or greater, the required distance is 0 (zero) miles.

When *Adjacent frequency spacing* is less than 25 kHz, the required distance is 35 miles.

Frequency Plan: <https://sera.org/wp-content/uploads/2016/11/sera-fup-440.pdf>



902 REPEATER COORDINATION PARAMETERS – 902 TO 928 MHz: -----

1. 902 **Co-channel** Distance: 75 miles

Note: Coordination requests within 75 miles of a non-SERA state requires frequency coordination with the frequency coordinating entity.

NBD - Narrow-band digital – DStar, NXDN, P25, DMR, 2.5kHz analog, 2.5kHz analog in mixed-mode

Input Range	Output Range	Adjacent	Offset Split	Permitted Modes / Constraints
902.5125 - 902.7250	927.5125 - 927.7250	12.5 kHz	25 MHz	NBD

2. Mileage spacing for 902 **Adjacent Frequencies**:

a. 902 MHz repeaters with 12.5 kHz frequency spacing is 25 miles for (11K0F3)

b. Mileage spacing for 902 *Adjacent Frequencies* with 25 kHz or greater: 0 (zero) miles.

c. **Part 15 rule** applies to a subset of available frequency pairs.

Frequency Plan: <https://sera.org/wp-content/uploads/2016/11/sera-fup-900.pdf>



1240 REPEATER COORDINATION PARAMETERS – 1240 TO 1300 MHz: -----

1. 1240 **Co-channel** Distance: 75 miles

Note: Coordination requests within 75 miles of a non-SERA state requires frequency coordination with the frequency coordinating entity.

Input Range	Output Range	Adjacent	Offset Split	Permitted Modes / Constraints
1270.00 – 1276.00	1282.00 - 1288.00	25 kHz	25 MHz	All modes

2. Mileage spacing for 1240 **Adjacent Frequencies**:

a. Mileage spacing for 1240 *Adjacent Frequencies* with 25 kHz or greater: 0 (zero) miles.

Frequency Plan: <https://sera.org/wp-content/uploads/2016/11/sera-fup-1200.pdf>



POLICY 6 - REPEATER DISTANCE VARIANCE

Channel spacing distances referred to in Policy 5 may be adjusted as necessary by the Frequency Coordinator. Repeater locations that are unusually higher than the surrounding average terrain (i.e., mountain peaks or a multiple-floor building in a metropolitan area) may require spacing distance more than Policy 5 guidelines. Repeater locations where terrain and low ERP are a factor may allow for less distance. Decisions concerning distances are based on various technical parameters of the proposed repeater. Any variance by the coordinator will be noted in the coordinator's comments section of the actual coordination.

POLICY 7 - REPEATER POWER LIMITATIONS

Although the FCC has eliminated specific power limits for repeaters according to *height above average terrain* (HAAT) as contained in the former Section 97.67(c), the SERA will continue to observe this policy. Any decision to grant a variance from the power to HAAT ratio will be left to the Frequency Coordinators. Frequency Coordinators also have the authority to impose power limitations on a repeater which may be based in whole or in part on calculated effective radiated power (ERP), height above average terrain (HAAT), antenna system design, and separation from co-channel and adjacent repeaters.

- A. For 28 MHz through 225 MHz:
 - 1. up to 100 feet HAAT - 800w ERP
 - 2. 100-500 feet HAAT - 400w ERP
 - 3. 500-1000 feet HAAT - 200w ERP
 - 4. 1000 feet and above - 100w ERP

- B. For 430 MHz and above, under normal circumstances:
 - 1. up to 1000 feet HAAT - 800w ERP
 - 2. 1000 feet and above - 400w ERP

POLICY 8 – INDIVIDUAL or CLUB COORDINATION: REPEATER CALL SIGN, TRUSTEE, and ALTERNATE CONTACT.

Individual-sponsored repeaters will ID with the Amateur radio call-sign of the owner/Trustee and be filed as such in the SERA UCS database. Club-sponsored repeaters may ID and be filed with the FCC-issued club call-sign, if the club has one; or with an individual call-sign of the Trustee as designated by the club if the club does not have its own call-sign. For a club repeater with a club call-sign, the FCC Trustee of the club (as shown in the FCC ULS database) will be listed as the Trustee of the club in the SERA UCS database and is the person primarily legally responsible for the repeater's operation and data file accuracy.

All repeaters must have both the primary Trustee and an Alternate Contact person listed in the UCS data file. The Alternate Contact person should have at least basic information about the repeater, such as whether it is on the air or not, where it is located, and how to contact the primary trustee if communication from the SERA Coordinator is not answered. Both the primary Trustee and the Alternate Contact must be registered users in the SERA UCS online database, with current contact information (e-mail address and phone number) listed in their Profile. The Profile may be accessed by logging into the SERA UCS and selecting "Dashboard". Both the primary Trustee and the Alternate Contact will receive all the automated correspondence generated by the UCS.

Repeaters coordinated with FCC-assigned Military Recreation call signs shall have the individual indicated on that Military Recreation call sign as the repeater Trustee. A second person must also be designated as the Alternate Contact.

All requests for coordination or changes in listing including the call sign for a repeater shall be submitted to the SERA Universal Coordination System (UCS) by the Trustee or by the Alternate Contact. The applicant shall provide all requested information and submit the application.

For more information about the duties of the Trustee, see Policy 13.

POLICY 9 - HEIGHT, POWER, FREQUENCY, OR LOCATION CHANGES

Coordination is based on information provided by the applicant and entered in the SERA UCS. *If a repeater trustee significantly changes the location, antenna height or pattern, effective radiated power, frequency, or other operating parameters of his system, the repeater will be required to be re-coordinated.* The SERA Frequency Coordinator shall be notified by making the changes in UCS. Re-coordination is required to verify that interference to or from other repeaters users does not occur. Re-coordination is not to allow another repeater or proposed repeater to be assigned to the frequency.

Note: This shall include a power change of 1 dB, an antenna height change of more than fifteen feet, or a horizontal move of more than 1,500 feet. For a 1 dB power change, use a factor of .75 or 1.25 of the original power. For example, a 100-watt ERP station multiplied by .75 would be 75 watts or multiplied by 1.25 would be 125 watts and will be automatically computed by UCS.

POLICY 10 - DIRECTIONAL & NON-DIRECTIONAL

In all cases, a coordinated repeater using a non-directional antenna and changing to a directional antenna or using a directional antenna and changing to a non-directional antenna will require the proposed changes be made and approved in UCS.

POLICY 11 - REPEATER PAIRS RELINQUISHED

Normally, a repeater frequency coordination is not transferable. When the current trustee of record relinquishes his coordination, the frequencies revert to the SERA frequency pool. If a trustee sells his repeater system to another person, the same frequency pair may be re-coordinated to the new owner; provided, the coordination request meets the SERA Coordination Policy and Guidelines. The proposed new trustee makes an application through the SERA UCS Online database within thirty days of the sale, and the current trustee of record has relinquished that frequency pair. If the new owner does not make an application within thirty days, the frequencies shall revert to the SERA frequency pool. The frequency coordinator can change without re-coordination the "trustee and alternate contact" with the proper documentation from the repeater official and no changes are made to the repeater itself. *The trustee and alternate contact must match the FCC ULS Database.*

POLICY 12 - REPEATER RE-COORDINATION

Re-coordination affected by Policy 9 and 10 transfers a repeater to newly coordinated status. A change of Trustee and Alternate contact with no physical changes to the repeater does not.

POLICY 13 - TRUSTEE RESPONSIBILITY

Contact Information:

SERA uses the contact information you provide in the SERA to contact you if there is important information regarding your repeater(s). The trustee or alternate contact of a coordinated repeater shall make updates to their coordination record(s) in the SERA UCS Database to maintain current and accurate repeater information AND a contact phone number and/or their E-mail address. The trustee should also update contact information in their Amateur radio license record in the FCC ULS database within ten days of any change.

It is the phone number and E-mail address of the Trustee and Alternate Contact listed in their FCC license that is displayed in the SERA repeater record. If attempts to contact the Trustee or Alternate Contact persistently fail, it can lead to de-coordination without further notice. It is the responsibility of the Amateur to maintain their FCC license information. Contact attempts are recorded in the coordination record to establish tracking of failed or successful contacts.

Cessation of Operation:

Trustees shall notify their Frequency Coordinator in writing by email, within ten days of the date the repeater ceases operation. If a repeater permanently ceases operation or is sold for relocation, the trustee shall notify their Frequency Coordinator by email, within ten days of the event. Such a cessation email/letter will be construed to mean the trustee is relinquishing the assigned frequency pair. Failure to keep current in the SERA UCS may also be construed as notification that the repeater has ceased operation, and the frequencies are available for re-assignment. When a valid discovery has been made that a repeater has been off the air for a significant time without notice to the SERA coordinator, the repeater is immediately de-coordinated. SERA coordinators will work with trustees who make their unforeseen technical or facility issues known.

Re-certification Time Limit:

If the trustee of record fails to keep the SERA UCS current (re-certified) for two consecutive years, SERA may automatically de-coordinate the frequency pair and list that repeater as uncoordinated in the SERA Database. After de-coordination, the frequency pair may be "returned to the pool" and be available for re-coordination.

POLICY 14 - COORDINATION SPECIFICS

In terms of coordination, SERA has established policies dealing with priorities for repeater frequency requests. SERA recognizes two fundamental motivations for the establishment of an amateur repeater:

1. As a service to other amateurs living or traveling in the service area, and
2. As an exercise in individual achievement on the part of the owner(s) or trustee(s).

Both motivations are equally valid and in the traditional spirit of amateur radio. However, in cases where these two rationales are in conflict, service must prevail over individual achievement. For example: The desire of an operator to set up a new repeater, largely for reasons of self-achievement, in an area already well served by existing repeaters, must be accommodated in a way that does not detract from the existing area serviced, in terms of co-channel or adjacent channel interference. Most large cities already have enough two-meter repeaters for both emergency and routine communication. Therefore, small towns and rural areas that are removed from those cities may take priority in the allocation of available frequency pairs. Those less populated areas may not be able to utilize other bands as easily as more populated areas because of the limited number of amateurs available to support the use of alternate bands.

- A. The owner and/or trustee of the proposed repeater shall work closely with the Frequency Coordinator in the survey of available frequencies and the coverage area of existing systems. Further, the trustee will bear the primary responsibility for any testing or monitoring period that might be required by the Frequency Coordinator. The Frequency Coordinator may also require the logging of signals heard, at the proposed coordination site, from co-channel and/or adjacent users. Although the final decision will be at the discretion of the Frequency Coordinator the burden of proof of an alleged clear frequency will rest with the proposed repeater trustee.
- B. Repeater frequency assignments shall be made with more consideration given to the transmissions of fixed and mobile stations than the output signal of the repeater. Most repeater coordination problems arise from fixed and mobile stations inadvertently accessing co-channel and adjacent channel repeaters in addition to the one intended.
- C. Existing coordinated repeaters have the first right to continued use of their frequencies and reasonable service areas. The effective use of an existing repeater should not be appreciably diminished by a new repeater. These rights have great weight but are not absolute.
- D. *For example:* An established wide area repeater should tolerate minor loss of fringe coverage and occasional inadvertent access, to allow a new repeater to provide needed service in a location distant from the first. Further, "first on frequency" carries no special right to make a technical parameter change without Re-coordination of the frequency assignment, as stated in Policy 9.
- E. Requests for closed repeaters are rarely coordinated. The rationale for our position is that frequency pairs are a limited and valuable resource, and they should be made available to all amateurs.
- F. Repeater linking via remotely controlled transmitters and/or receivers, utilizing an allocated SERA repeater input and/or output frequency, has the potential to cause harmful interference to coordinated repeater operations and is therefore highly discouraged.

- G. Repeater Trustees *are required to select and enter a tone on the coordination application*. The use of CTCSS or DCS may also help reduce interference from stations that might be in an area and access more than one at a time. In all cases, a Tone Encode selection will be required by the coordinator for the repeater. In all cases, repeaters coordinated/re-certified after **10-1-23** will require a tone to be entered on the coordination form. Digital repeaters, such as DMR, should include any color code, etc., information. If there isn't a tone generated in the digital repeater the trustee should enter 'None' and (0) zero in the blanks provided. Some use (-0-) for tone frequency, which is also acceptable.

POLICY 15 - GOOD REPEATER OPERATING PRACTICES

Good operating practices are needed by repeater owners and/or trustees and users alike to achieve the standards that are expected in amateur radio service. Although coordination councils lack the actual "police power" to regulate amateur frequencies, cooperation between the coordination council, owners and/or trustees, and users is required to make frequency coordination work. Our coordination policy is an outline, which, if followed voluntarily by all, will allow the coordination plan to work, thereby providing a better operating climate for all within amateur radio.

Further, the SERA advocates:

- A. Repeater owners and/or trustees and users are expected to maintain good engineering and operating practices, as well as common amateur courtesy. Good amateur practice promotes harmony and prevents unwanted interference to, and from, other systems.
- B. Repeater users should use only the necessary amount of power to operate repeaters. This prevents unwanted activation of other repeaters on the same frequency, and at times, on nearby adjacent channel repeaters.
- C. Repeater users should see that their equipment operates at the proper frequency and their deviation should not exceed 5 kHz on wide-band pairs (WBD) and 2.5 kHz on narrow-band pairs (NBD)
- D. When the repeater's effective radiated power exceeds the receive capability, operators tend to use excessive transceiver power to access a repeater. This creates an atmosphere of potential interference with other co-channels and adjacent channel repeaters. Therefore, it is strongly suggested that repeater ERP should always equal the receive capability.
- E. Repeater owners and/or trustees are encouraged to use state-of-the-art equipment with sufficient filtering on input and output, as well as maintaining proper calibrations, to prevent adjacent channel interference.

POLICY 16 - REQUESTS FOR COORDINATION

Although voluntary from the beginning of repeater operation, frequency coordination has played a large part in maintaining order in the operation of repeaters. The SERA strongly recommends that all amateurs who wish to construct and operate a repeater seek coordination and cooperate fully with their coordination council.

- A. Any verbal or email discussion concerning coordination with the Frequency Coordinator is welcomed. No official action will be taken until a submission is prepared in the SERA UCS Database, providing all the required information.
- B. Any licensed amateur who wants to construct and operate a repeater should submit the proper information in SERA UCS Online. When the UCS Submission is complete it will automatically notify the proper coordinator that a frequency pair or repeater coordination change is being requested and requires attention. The applicant shall provide all requested information.
- C. The SERA may request control or link frequencies used in a repeater system. This information will be used to help prevent interference by other repeater systems, which might use control or link frequencies. All control or link frequencies should comply with the current SERA band plan. This information can be held confidential and not be published or made available to anyone other than frequency coordinators through the regular course of their duties.
- D. New SERA frequency coordination's are issued to the trustee named in SERA UCS Online and are valid for six months from the date of issue. The repeater should be operational within this time. If unavoidable circumstances prevent the new repeater from being placed on the air, a one-time six- month construction extension may be issued by the Frequency Coordinator. Requests are to be made by email to the Frequency Coordinator. The extension request shall state the problems and/or reasons that prevented the repeater from being operational.

- E. The trustee of a new repeater shall notify the Frequency Coordinator by using email or US Mail when his repeater is on the air in a permanent condition and operating within the specifications of the original coordination request.

POLICY 17 – REPEATER DE-COORDINATION

To preserve the integrity of the coordination process and to maintain accurate records, SERA provides certain rules that shall be followed by all repeater owners/trustees as a condition of their frequency coordination. If these requirements are not followed, de-coordination of the assigned repeater frequencies may occur.

Each SERA Frequency Coordinator is responsible for carrying out the policies of the SERA listed below: Repeater de-coordination shall occur,

1. If the FCC orders the system to permanently cease operation, or
2. If the amateur radio license of the owner, trustee, or the club (whomever is the “holder of record”) is suspended, revoked, or expires, or
3. If the licensee fails to maintain a current address on file with the SERA and the FCC, or
4. If the existence of a working system cannot be confirmed; or, if the holder cannot comply with the request of the Frequency Coordinator to demonstrate the operation of such system within thirty (30) days of a request to do so; or if a working system is not on the air and the owner/trustee has not filed an email or written request requesting a construction extension.
5. If the trustee of the system consistently violates good engineering or amateur radio practices by:
 - a. operating his/her system with excessive deviation, spurious emissions, or off frequency as to cause harmful interference to adjacent channel users, or
 - b. having been found to be responsible for interference to another system and refusing to cooperate with other owners/trustees involved and/or the SERA Frequency Coordinator, or the FCC.
6. If the repeater owner/trustee significantly changes the previously coordinated operating parameters of a repeater such as location, power or antenna height above ground as specified in Policy 9 without prior re-coordination or approval by the respective SERA Frequency Coordinator, or
7. If the repeater owner/trustee changes any information on the annual UCS update thereby altering the original coordination agreement, such as antenna height above ground, latitude & longitude, power output, or any other change specified in SERA Policy without prior submission and approval by the respective SERA Frequency Coordinator, the repeater shall be transferred to an uncoordinated status.

Should the SERA de-coordinate a repeater pair, per the guidelines above, the repeater owner/trustee may re-apply for coordination by using the SERA UCS Database. Re-coordination, however, is not automatic and may not be granted, if in the meantime, another request for the frequency is in process or if the condition(s) that led to de-coordination have not been corrected.

DE-COORDINATION ACTION:

The SERA Frequency Coordinator may proceed with the following action:

1. The Frequency Coordinator, upon request, or for reason, may gather and document that the frequency pair has not been in use for an extended period or that a policy of SERA has been violated.
2. The Frequency Coordinator will notify the repeater owner/trustee by e-mail.
3. If there is no response within seven (7) days or if any repeater owner/trustee refuses to cooperate by discussing the matter with the coordinator, or if the repeater owner/trustee fails to respond, SERA may de-coordinate the frequency pair.
4. Should the repeater owner or trustee respond to the action in point #2 in a cooperative manner, the owner or trustee may request that the coordination be reinstated. Coordination with proper documentation from the coordinator may be maintained for a reasonable time. The repeater owner/trustee must meet the requirements of a working system as listed in the SERA policies.

5. The owner or trustee must notify the respective State Frequency Coordinator stating that the repeater is on the air and working properly, or that other policy violations have been corrected. Failure to comply with the above action may result in the de-coordination of the frequency pair.

POLICY 18 - INTERFERENCE POLICIES

The SERA maintains a policy of dealing with interference problems between repeater owners, trustees, and sponsors to resolve these disputes. This policy complies with FCC rulings and guidelines.

- A. If an uncoordinated repeater causes harmful interference to a coordinated repeater, the primary responsibility for correcting the interference rests with the trustee of the uncoordinated repeater by FCC Part 97.205(c). [See the "References" at the end of this document for Part 97.205(c) text]
- B. If both repeater systems are coordinated, the trustee of both repeaters equally bears the responsibility for correcting the interference by FCC Part 97.205(c).
- C. If both repeater systems are uncoordinated SERA will provide coordination instructions if requested.
- D. In cases where a repeater in a SERA district is involved with interference with a system operated outside of a SERA district, the SERA Frequency Coordinator will work with the frequency coordinator from the other territory and should work within SERA Policies and Guidelines while working to resolve the dispute with the other Frequency Coordinator.
- E. If a repeater trustee changes the location, antenna height or pattern, ERP, frequency, or other operating parameters of his system, and subsequently causes interference to other co-channel or adjacent channel repeaters, that repeater trustee bears primary responsibility for correcting the interference.

POLICY 19 - INTERFERENCE REVIEW PROCEDURES

SERA policies provide equal fairness to all parties involved in the review procedure that is a result of repeater interference complaints.

- A. A repeater trustee who is a victim of harmful interference from another repeater system, or its operators, shall document times, band conditions, station call signs, and the type of interference experienced. Abnormal band conditions will not be considered a valid reason for filing an interference complaint. The trustee of the repeater who is receiving interference shall contact the trustee of the interfering repeater by email then certified mail, return receipt requested, if no reply to the email, outlining the existing problem and including documentation. The responding trustee shall answer any letter received within thirty days.
- B. If negotiation attempts fail and the interference problem cannot be resolved with the trustee of the interfering repeater, the offended trustee shall then contact the SERA District Director by letter, outlining the problem and providing documentation of the problem. Any failed attempt to contact the interfering repeater trustee should also be explained in detail.
- C. If the Liaison cannot resolve the problem, using the guidelines explained above, and the trustee bearing responsibility for the interference does not cooperate, does not take reasonable action to resolve the problem, or refuses to cooperate with SERA, The FCC Enforcement Division may be contacted. SERA will inform the FCC of details of the existing problem, outlining in as much detail as possible. The coordinator may also notify the affected repeater trustee and offending repeater trustee by email, of the letter being sent to the FCC.
- D. Cases of malicious interference may be forwarded to the FCC Enforcement Division having jurisdiction in the area where interference is located after proper documentation has been made. Documentation shall include, but not be limited to, times, band conditions, station call signs, and the type of interference experienced.
- E. The FCC has adopted rules to define the NATIONAL RADIO QUIET ZONE, which is referred to in Part 97.3(k). The area is bounded by latitude 39 degrees, 15 minutes, north; longitude 78 degrees, 30 minutes, east; latitude 37 degrees, 30 minutes, south; and longitude 80 degrees, 30 minutes, west. Located in the area surrounding the National Radio Astronomy Observatory at Green Bank, WV, and the U. S. Naval Research Laboratory at Sugar Grove, WV, the Quiet Zone protects the area where sensitive radio astronomy and national security operations take place. Amateurs, who wish to place repeaters,

beacons, or other transmitting devices within the Quiet Zone, shall contact the SERA for coordination of the requested frequencies.

Upon receipt of the approved coordination from the SERA, final permission to place the repeater system on the air shall be obtained from: t h e National Radio Astronomy Observatory, Interference Officer, P. O. Box 2, Green Bank, WV 24944-0002. Like any other coordinated system, changes in location, antenna height or pattern, ERP, frequency, or any other operating parameters of the system require approval from your SERA Frequency Coordinator and the Interference Officer at Green Bank.

POLICY 20 - REPEATER INDEXES AND PUBLISHED LISTINGS

Aside from the coordination of repeaters in the southeastern United States, the SERA shall maintain a database of information that will be readily available to all officers of the organization.

- A. The SERA shall maintain a computerized database of all known repeaters in the districts which it serves. The repeater listings will be available to SERA Members online at www.sera.org. These records are constantly upgraded.
- B. SERA reserves the right to publish the status of any repeater within its respective districts. The operational parameters of all repeaters within the SERA districts will be contained in the database.
- C. The SERA Repeater Index may not be published or reproduced, in any form, by any individual, publication, electronic source, or any other means, for distribution without the expressed written consent of the SERA, Inc.
- D. SERA makes every attempt to publish correct and accurate indexes. The index may include repeaters that may not be on the air. In cases where proposed repeaters, or repeaters under construction, are listed for one year and no communication has been received by SERA concerning the status of the repeater, the listing may be deleted.
- E. Repeater owners and/or trustees are responsible for the accurate information for their repeater. Likewise, the owner/trustee is responsible for seeing that all pertinent operational information is on file with SERA.
- F. Failure to maintain up-to-date information in the SERA UCS Database may be construed to infer that the repeater is no longer on the air and the frequency is available for re-assignment.

References:

FCC Part 97.205(c)

(c) Where the transmissions of a repeater cause harmful interference to another repeater, the two station licensees are equally and fully responsible for resolving the interference unless the operation of one station is recommended by a frequency coordinator and the operation of the other station is not. In that case, the licensee of the non-coordinated repeater has primary responsibility to resolve the interference.

FCC Part 15

<https://www.arrl.org/part-15-radio-frequency-devices>

DOCUMENT MODIFICATION HISTORY

SERA Coordination Policies and Guidelines Rewrite, Adopted by the Board of Directors in January 1987.

An updated rewrite for clarification, by titling and codification of the individual paragraphs, and deletion of the CVRA title from the organization was made and approved by the Board of Directors in January 1989.

Boundary changes for the Kentucky District and the addition of the Mississippi District were made in August 1989. Clarifications regarding club coordination's and trustee responsibilities (Policies 8, 9, and 13) were made in July 1990.

Complete re-writes for Policies 13, 16, 17, 18, and 19, typographical errors, as well as other minor word additions or deletions, were approved by the SERA Board of Directors in January 1995.

Complete re-writes for the Introduction, Policies 2, 3, 5, 6, 7, 8, 9, 10, 12, 14, 15, 17, and 20, typographical errors, as well as other minor word additions or deletions, were approved by the SERA Board of Directors in July 1995.

A minor change in the wording of Policy 1 under Districts and revisions of the order of appearance of WV & TN was approved by the SERA Board of Directors in January 1996.

Minor changes in adjacent channel spacing contained in Policy 5, Subsection B.1 and B.1.b. were approved by the SERA Board of Directors in June 1996.

Added policy subsections 14.F and 17.A.5.c, concerning the operation of remote bases", and renumbered CTCSS/PL policy to 14.G, which was approved by the SERA Board of Directors in June 1997.

Updates to the SERA CP&G were requested, submitted, and approved by unanimous vote on 07/01/2014.

Total Re-Write of this document 11/01/16 by Dr, Mike Fariss, SERA Bylaws Chair, and approved by the Exec Committee and the Board of Directors.

Dr. Mike Fariss, K4EZ By-Laws Chairman

Kept the logical SERA repeater information and updated new modes of operation, Made space for "backyard repeaters" on UHF, changed the tone requirement. and other minor changes as shown within. 09/01/23

Major changes in this document approved by the SERA Board of Directors 10/01/23 by SERA VP Dr Mike Fariss

Interim major DRAFT document re-write - 02-25-24

Version 24.0.0 – Not yet approved. David Benoit – 02-25-24

Completed full document re-write – 06-09-24

Version 060924.0.1 –Approved by SERA Board of Directors June 2024.