CEIM-AA Regulation No. 1125-2-308	Department of the Army U.S. Army Corps of Engineers Washington, DC 20314-1000	ER 1125-2-308 15 Sep 86
	Plant RADIO FREQUENCY AND CALL SIGN ASSIGNMENTS	
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DEPARTMENT OF THE ARMY
U.S. Army Corps of Engineers
Washington, DC 20314-1000

DAEN-CWO-M
WRSC

Regulation
No. 1125-2-308

15 September 1986

Plant
RADIO FREQUENCY AND CALL SIGN ASSIGNMENTS

1. Purpose. This regulation prescribes procedures to be followed for submitting requests for radio frequency, ship radio authorizations (SRA), and cases of harmful interference.

2. Applicability. This regulation is applicable to all field operating Activities (FOA), primarily in CONUS and US Possession, using communications electronics (C-E) equipment/operations to support Civil Works functions.

3. Reference.

a. AR 5-12

b. AR 105-24

c. ER 1110-2-248

d. ACP 190 US Supp-1 (B)

e. ECAC-CR-83-018

f. Technical Report 83-WTR-1

4. Responsibilities.

a. The Water Resources Support Center, Data Collection and Management Division (WRSC-C), has the responsibility and is the focal point for the U.S. Army Corps of Engineers Civil Works for call sign and frequency management. Request for assignment of frequencies, call signs and SRA's will be forwarded to Water Resources Support Center, for coordination and transmittal to Chief, DAIM-FAC for final processing, using the procedures described in paragraph 5.

b. Funds for the research, development, production, purchase, lease or use of spectrum dependent material will not be released by the obligating authority until spectrum supportability has been established in accordance with reference 3a.

This regulation supersedes ER 1125-2-308, 31 August 1981

5. Submission of Application.

a. Request for frequency proposals, assignments, modifications, deletions, and review actions for the operation of high-frequency single-sideband (HF-SSB), line of sight microwave, radio relay systems, data collection platforms, radiolocation and radionavigation, marine radio, space systems, radar, lasers, telemetry, collection of hydrologic data, research and test operations, and other special systems which utilize the electromagnetic spectrum, may be made using the Standard Frequency Action Format (reference d) and Technical Report 83-WTR-1 (reference f) except as noted in paragraph 5c and 5d. Unclassified radio frequency applications will be entered directly into the data base utilizing the Water Resources Data Center (WRDC) Frequency Management System. Direct access to the WRDC computer in Washington, D.C. from remote sites (the user) can be acquired through a local computer terminal supported by a dial-up communication link and 300/1,200 baud modem. The procedure for entry and use of the automated system is described in reference e.

b. In order to permit the appropriate engineering analysis and coordination and to obtain necessary clearance for a new frequency assignment and assignment of call signs, applications will be submitted 160 days prior to the proposed operational date.

c. Requests for assignment of radio frequencies for operation of the Geostationary Operational Environmental Satellite (GOES) Data Collection Platforms (DCP) shall be submitted in accordance with paragraph 5a and instructions as outlined in ER 1110-2-248 (reference c).

d. Submission of requests for use of hydrologic radio frequencies require, in addition to compliance with paragraph 5a, an "Information Sheet", ENG Form 4727-R, fully describing each station and the "Station Location Map." The frequencies listed below are primarily for hydrologic operations and are shared with non-Government fixed stations on the condition that harmful interference will not be caused to Government stations:

MHz	MHz	MHz	MHz
169.425	170.275	171.125	406.175
169.450	170.300	171.825	409.675
169.475	170.325	171.850	409.725
169.500	171.025	171.875	412.625
169.525	171.050	171.900	412.675
170.225	171.075	171.925	412.725
170.250	171.100	406.125	412.775

Licensees holding a valid authorization on June 11, 1962, to operate on the frequencies 169.575, 170.375, or 171.975 MHz may continue to be authorized for such operations on the condition that harmful interference will not be caused to Government stations. The frequencies M171.175 and M406.150 are for meteorological and quasi-hydrologic operations. Coordination with the Hydrology Committee is not required. Hydrologic stations authorized prior to May 8, 1962 for operation on one of these frequencies will not be required to change to a primary

hydrologic frequency. Additional stations or change in location of one or more stations in existing nets operating on these frequencies will be permitted.

e. The following information shall be forwarded to Water Resources Support Center, Casey Building, WRSC, Ft. Belvoir, Virginia 22060, for each station to be installed, using ENG Form 4727-R and the Station Location Map:

(1) Name, type, kind, and location of station. Type would be relay, command station, or sensing; location, latitude and longitude. Kind of hydrologic data to be transmitted (river stage). Frequency or frequencies required. Indicate transmitting (T) and receiving (R) frequencies.
(2) Antenna Characteristics: antenna name (generic preferred); orientation (degrees from true north or nondirectional, as appropriate); gain (nominal) in dB; site (terrain) elevation above MSL in feet; antenna height above terrain in feet.
(3) Output power of transmitter.
(4) Operation schedule: on call, automatic for 15 minutes each hour, manual hourly under specified conditions, etc. Necessary bandwidth of emission in kilohertz.
(5) Modulation and Emission Bandwidth. (APP A)
(6) Map showing location of transmitting and receiving stations and limits of operational area. A coordinate grid (latitude and longitude) will be shown on the map.
(7) Justification of installations by explaining the use of the data to be collected and the reasons why radio is to be used in lieu of land lines.
(8) Cooperating agencies, if any. The "Station Location Map" should be 8 1/2" x 11" to facilitate handling, if practical. Ten copies of the "Information Sheet" and the "Station Location Map" shall be furnished to WRSC-C for review and subsequent distribution to the Hydrology Committee of the Water Resources Council. An "Information Sheet", ENG Form 4727-R and a "Station Location Map" are attached to illustrate the format to be used in submitting the required information to WRSC-C.

f. Request for assignment of radio call signs and frequencies for Corps of Engineers vessels shall be submitted in accordance with ENG Form 4728-R. Include call sign and SRA number from previous request and forward through the appropriate channels to WRSC-C.

g. Immediately upon deactivation or disposal of a land or vessel station, a request for cancellation of the SRA will be submitted to WRSC-C.

6. Five Year Review Program. All Field Operating Activities (FOA) shall maintain a program of continuing review of frequency assignments and shall delete or amend such assignments as appropriate, using the procedures described in paragraph 5a. Requirements Control Symbol DAEN-CWZ-2 applies to this requirement. WRSC-C will provide users, periodically, frequency records requiring a Five Year Review/Update. The objectives of this program are:

a. To insure that frequency assignments are in current use and are correctly reflected in the Current Assignment List (CAL),

b. To insure that frequency assignments are required for continued operations for the purpose stated in their justification, and

c. To insure that frequency assignments are still valid under current regulations.

Each assignment shall be reviewed at least every five years, unless by the terms of its authorization it is subject to review more frequently. Temporary assignments will automatically be dropped from The Current Assignment List (CAL) after the expiration date unless renewed. Assignments which are greater than five years old will be deleted from the National Telecommunications and Information Administration's CAL and operation on that frequency will no longer be authorized. Submission of a new application as delineated in paragraph 5a will be required.

7. Use of Frequency Below 30 MHz. In order to conform with the U.S. "Domestic Fixed Policy", fixed (point-to-point) communications below 30 MHz must satisfy the following conditional requirements:

a. When required for use in an emergency jeopardizing life, public safety, or important property under conditions calling for immediate communications where other means of communications do not exist or are temporarily disrupted or inadequate.

b. When other telecommunication facilities do not exist, are inadequate, or where installation is impractical, and where the use of frequencies above 30 MHz is not practical.

8. Procedure in a Case of Harmful Interference. In the use of the radio frequency spectrum, interference may occur. When harmful interference* is received, the following actions should be taken in the absence of WRSC-C instructions to the contrary.

a. Determine the source, if possible. Within the United States the FCC district offices and monitoring stations can assist in determining the source of harmful interference and may be contacted directly for such assistance.

b. If the source is identified, try to eliminate the harmful interference by dealing directly with individuals located at the source.

c. If direct action is impracticable or unsuccessful, report the circumstances to Water Resources Support Center, WRSC-C, Casey Building, Ft. Belvoir, VA 22060. Requirements Control Symbol DAEN-CWZ-3 applies to this

* Harmful interference is "any emission, radiation, or induction that endangers the functioning of a radionavigation service or of other safety services, or seriously degrades, obstructs, or repeatedly interrupts a radiocommunication service."

requirement. Provide all possible information concerning the interference. An interference report should include as much of the following as practicable:

(1) Particulars concerning the station causing the interference:

(a) Name or call sign

(b) Frequency measured

(c) Class of emission

(d) Bandwidth

(e) Station class

(f) Bearing

(g) Nature of interference

(2) Particulars concerning the transmitting station whose transmissions are being interfered with:

(a) Name or call sign

(b) Frequency asssigned

(c) Frequency measured

(d) Class of emission

(e) Bandwidth

(f) Station class

(3) Particulars furnished by the receiving station experiencing the interference:

(a) Name or call sign

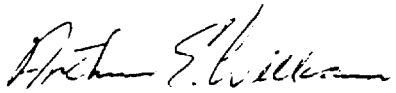
(b) Station class

(c) Geographic location

(d) Dates and time of occurrence of harmful interference

(4) Submit supplemental (as necessary), and closing reports on incidents of harmful interference to WRSC-C.

FOR THE COMMANDER:



ARTHUR E. WILLIAMS
Colonel, Corps of Engineers
Chief of Staff

1 Appendix
APP A - Emission Designation
APP B - Forms

Appendix A

1. Emission Designation Symbols.

The Emission Designation code list at attachment 1 provides the specific codes for each of the emission symbols to be used, including the two optional codes cited. Figure one provides a conversion for changing the old emission symbols to the new symbols developed by the National Telecommunications and Information Administration.

Emission Designation Symbols

FIRST SYMBOL - designates the type of modulation of the main carrier:

Symbol	Type of Emission
	UNMODULATED
N	Emission of an unmodulated carrier.
	AMPLITUDE-MODULATED
	Emission in which the main carrier is amplitude-modulated (including cases where sub-carriers are angle-modulated);
A	Double-sideband
H	Single-sideband, full carrier
R	Single-sideband, reduced or variable level carrier
J	Single-sideband, suppressed carrier
B	Independent sidebands
C	Vestigial sideband
	ANGLE-MODULATED
	Emission in which the main carrier is angle-modulated:
F	Frequency modulation
G	Phase modulation
	AMPLITUDE-MODULATED AND ANGLE-MODULATED
D	Emission in which the main carrier is amplitude-modulated and angle-modulated either simultaneously or in a pre-established sequence.
	PULSE
	Emission of pulses:
P	Sequence of unmodulated pulses
	A sequence of pulses:
K	Modulated in amplitude
L	Modulated in width/duration
M	Modulated in position/phase
Q	In which the carrier is angle-modulated during the period of the pulse
V	Which is a combination of the foregoing or is produced by other means

COMBINATIONS

W.....Cases not covered above, in which an emission consists of the main carrier modulated, either simultaneously or in a pre-established sequence, in a combination of two or more of the following modes: amplitude, angle, pulse.

OTHER

X.....Cases not otherwise covered.

SECOND SYMBOL - designates the nature of signal(s) modulating the main carrier:

Symbol	Type of Emission
0	No modulating signal
1	A single channel containing quantized or digital information without the use of a modulating subcarrier.
2	A single channel containing quantized or digital information with the use of a modulating subcarrier. (1)
3	A single channel containing analogue information.
7	Two or more channels containing quantized or digital information.
8	Two or more channels containing analogue information.
9	Composite system with one or more channels containing quantized or digital information, together with one or more channels containing analogue information.
X	Cases not otherwise covered.

THIRD SYMBOL - designates the type of information to be transmitted: (2)

N	No information transmitted.
A	Telegraph - for aural reception.
B	Telegraphy - for automatic reception.
C	Facsimile.
D	Data transmission, telemetry, telecommand
E	Telephony (including sound broadcasting).
F	Television (video).
W	Combination of the above.
X	Cases not otherwise covered.

OPTIONAL FOURTH SYMBOL - designates the details of signal(s);

A	Two-condition code with elements of differing numbers and/or durations.
B	Two-condition code with elements of the same number and duration without error-correction.
C	Two-condition code with elements of the same number and duration with error-correction.
D	Four-condition code in which each condition represents a signal element (of one or more bits).
F	Multi-condition code in which each condition or combination of conditions represents a character.
G	Sound of broadcasting quality (monophonic.
H	Sound of broadcasting quality (sterophonic or quadraphonic).

1. This excludes time-division multiplex.

2. In this context the word "information" does not include information of a constant, unvarying nature such as provided by standard frequency emissions, continuous wave and pulse radars, etc.

J.....Sound of commercial quality (excluding categories defined for symbols K and L below).
K.....Sound of commercial quality with the use of frequency inversion or band-splitting.
L.....Sound of commercial quality with separate frequency-modulated signals to control the level of demodulated signal.
M.....Monochrome.
N.....Colour.
W.....Combination of the above.
X.....Cases not otherwise covered.

OPTIONAL FIFTH SYMBOL - designates the nature of multiplexing:

Symbol — Type of Emission

N.....None.
C.....Code-division multiplex.
F.....Frequency-division multiplex. (3)
T.....Time-division multiplex.
W.....Combination of frequency-division multiplex and time-division multiplex.
X.....Other types of multiplexing.

CURRENT SYMBOL	NEW SYMBOL	CURRENT SYMBOL	NEW SYMBOL
A0	NON	A1	A1A
A2	A2A	A2	A2D
A2A	R2B	A2B	B2B
A2H	H2B	A2J	J2B
A3	A3E	A3A	R3E
A3B	B83	A3H	H3E
A3J	J3E	A4	A3C
A4A	R3C	A4J	J3C
A5	A3F	A5C	C3F
A6	A7B	A7	A7B
A7B	B7B	A7J	J7B
F0	NON	F1	F1B
F2	F2A	F2	F2D
F3	F1E	F3	F3E
F4	F3C	F5	F3F
F9	G7W	PO	PON
POE	PON	POG	MIDET
P1	P1B	P1D	K1A
P2	P2D	P2E	L2A
P2F	M2A	P3	KE3
P3D	K3E	P3	K3E
P6	P7B		

FIGURE 1. Table of Emission Symbol Conversions

3. This includes bandwidth expansion techniques.

Appendix B

INFORMATION SHEET
REQUEST FOR HYDROLOGIC RADIO FREQUENCY ASSIGNMENTS (ER 1125-2-308)

If additional space is required, use blank sheets and attach

1. NAME, TYPE, AND LOCATION OF STATION

STATION NAME *a*	FREQUENCY MHZ *b*	TYPE OF STATION *c*	TYPE OF DATA *d*	STATION LOCATION	
				e - LAT (N)	*f* - LONG (W)

2. ANTENNA CHARACTERISTICS

STATION NAME *a*	NAME (GENERIC) *b*	GAIN (dB) *c*	AZIMUTH (DMS) *d*	HEIGHT (FT) *e*	ELEVATION (AMSL FT) *f*

FOR ILLUSTRATION PURPOSES ONLY
(Local reproduction authorized - blank masters available from local FMO)

3. PROPOSED POWER OUTPUTS (KW)	4. OPERATION SCHEDULE	5. MODULATION AND EMISSION BANDWIDTH

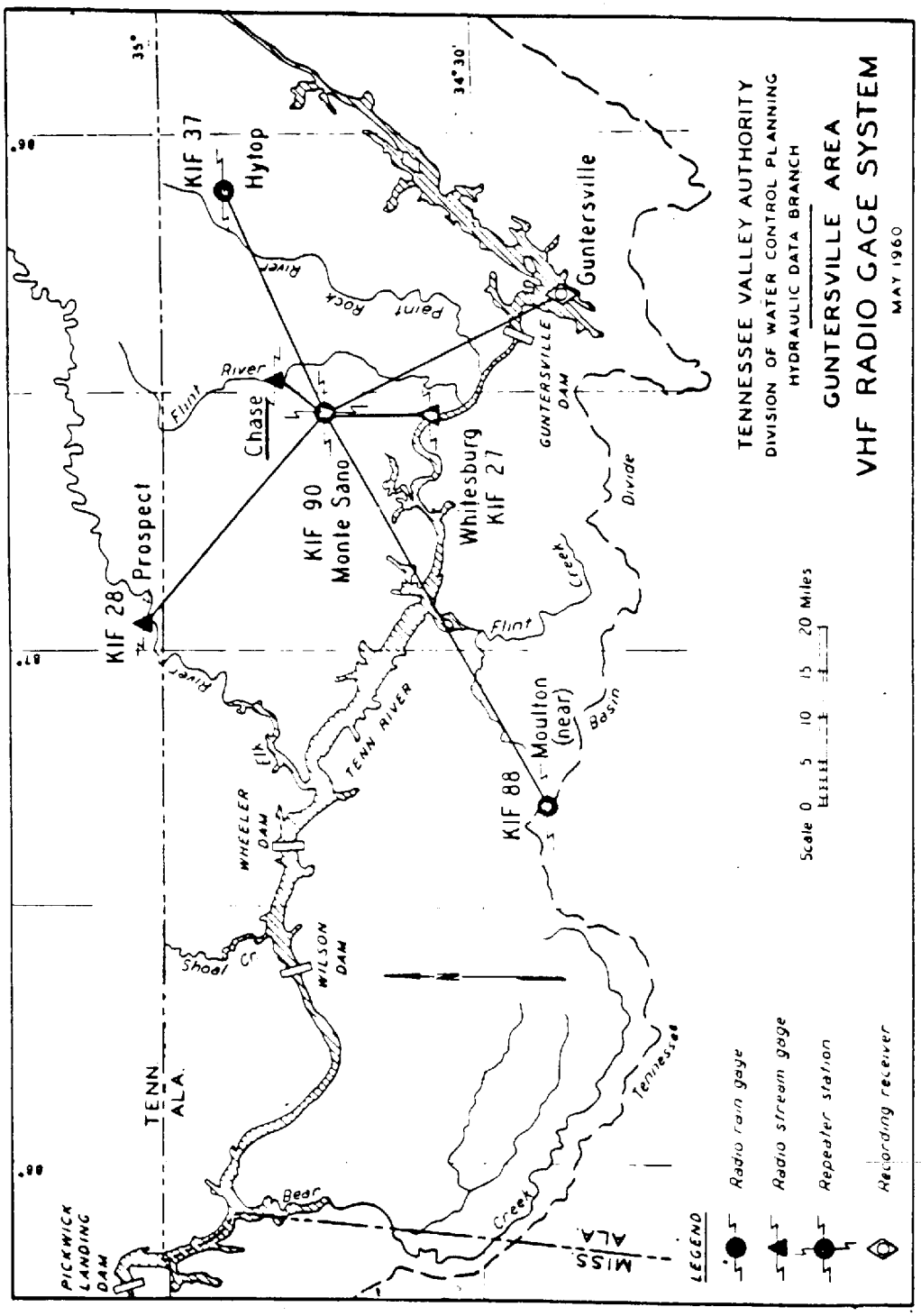
6. LOCATION MAP The map on reverse shows latitude, longitude, elevation, and lines of communications for the proposed facilities.

7. JUSTIFICATION

8. NAME OF PERSON TO CALL FOR ADDITIONAL INFORMATION	9. TELEPHONE NUMBER

10. COOPERATING AGENCIES *(If any)*

ENG FORM 4727-R, MAR 81 (Proponent: WRSC)


TENNESSEE VALLEY AUTHORITY
DIVISION OF WATER CONTROL PLANNING
HYDRAULIC DATA BRANCH
GUNTERSVILLE AREA
VHF RADIO GAGE SYSTEM
MAY 1960
KIF 37 Hytop
KIF 28 Prospect
KIF 90 Monte Sano
Chase
Whitesburg KIF 27
KIF 88 Moulton (near)
Guntersville
GUNTERSVILLE DAM
WHEELER DAM
WILSON DAM
PICKWICK LANDING DAM
TENN RIVER
Flint River
Flint Creek
Point Rock River
Shoal Cr.
Bear Creek
Tennessee
Divide
Basin
TENN
ALA.
MISS
ALA.
Scale 0 5 10 15 20 Miles
LEGEND
Radio rain gage
Radio stream gage
Repeater station
Recording receiver

REQUEST FOR SHIP RADIO AUTHORIZATION (ER 1125-2-308)

☐ NEW
☐ RENEWAL
☐ CHANGE

1. DISTRICT AND DIVISION	2. NAME OR DESIGNATION OF SHIP
3. FORMER NAME OR DESIGNATION OF SHIP	4. ARMY AUTHORITY ☐ OWNED ☐ LEASED ☐ OPERATED ☐ OTHER _____

5. DESCRIPTION OF TRANSMITTING EQUIPMENT

a. Manufacturer	b. Type	c. J-12 Number
d. Frequency Tuning Range	e. Specific Frequency Required	f. Type of Emission
g. Power Output	h. Antenna Type and Gain	6. Number of Radio Equipped Lifeboats

7. TYPE AND MODEL		8. RADAR BAND
a. Auto Alarm	b. Direction Finder	

9. REMARKS

FOR ILLUSTRATION PURPOSES ONLY

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10. NAME OF PERSON TO CALL FOR ADDITIONAL INFORMATION	11. TELEPHONE NUMBER

To be completed by WRSC-C (except for renewal or changes)

12. CALL SIGN	13. SRA NUMBER

ENG FORM 4728-R, MAR 81 (Proponent: WRSC)