



	<p align="center"><b>MARCS IT Policy</b>          MARCS Co-location          Technical Requirements</p>	<b>No: MPP-17.0</b>
		<b>Effective: 10/24/2004</b> <b>Revised: 3/9/08</b>
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**1.0 Purpose**

To formalize the technical requirements applying to agencies, both public and private, seeking use of the Multi-Agency Radio Communications System (MARCS) tower sites. This document relates to frequencies, equipment, cables, antennas and/or any other such related items placed in the shelter, on the tower, and/or on grounds owned, leased or otherwise legally controlled by MARCS.

No public or private entity shall co-locate any equipment on MARCS property without meeting all requirements of his policy and policy MPP-19.0, and without the express written consent of MARCS.

**2.0 Scope**

This policy applies to all potential co-locates on all MARCS controlled property/shelters.

**3.0 Background**

MARCS manages numerous tower sites statewide, providing radio coverage throughout the state. By nature of the locations of the towers, and the height provided, many entities are potential users of the excess capacity afforded by these towers. Examples include other public safety/public service agencies, private cellular and other wireless providers, and private enterprises with wireless radio needs.

This document is to identify the technical requirements for co-location within the shelter, on the tower, and/or on grounds owned, leased or otherwise legally controlled by MARCS.

**4.0 Shelter Equipment**

- a) Equipment shall be installed in 7’x19” equipment racks unless otherwise specified.
- b) Equipment shall be grounded to the interior halo ring per Motorola R56 standard.
- c) Equipment shall be on a dedicated AC breaker using the non-UPS breaker panel.
- d) AC power connections shall be installed using the ceiling electrical raceway.
- e) No equipment shall use the existing shelter wall outlets or connect to the MARCS UPS breaker panel.
- d) Equipment shall be installed in a manner consistent with the installation of the MARCS equipment.
- e) New equipment BTU loading shall be provided to MARCS to determine if the existing HVAC size is satisfactory.
- f) New equipment power loading shall be provided to MARCS to determine if the existing generator size is satisfactory.

**5.0 Antenna and Transmission Lines**

- a) Antennas shall be mounted using a Pirod side arm or its approved equivalent.
- b) Installation shall be completed as directed by manufacturer's specifications.
- c) Transmission lines shall be grounded at the transmission line port following manufacturer's specifications.
- d) Additional grounding shall be completed at the following locations:
  - 1.) On the tower's bottom ground buss bar
  - 2.) Every 200' from the bottom ground buss bar
  - 3.) At the antenna base
- e) A Polyphaser coaxial protector or its approved equivalent shall be installed on each transmission line according to manufacturer's specifications.
- f) Transmission lines shall be supported on the tower and transmission line bridge consistent with the method currently in place by MARCS.
- g) Only one transmission line per port shall be allowed unless otherwise specified. If needed, additional ports shall be added at co-locator's expense.

**6.0 Tower Analysis and Intermodulation Study**

- a) MARCS requires a minimum of a structural engineer stamped letter indicating the tower shall hold the current loads, MARCS-design future loads, and the additional requested loads, unless otherwise specified.
- b) An intermodulation study is required unless otherwise specified. This study shall be subject to approval and acceptance by MARCS.
- c) Potential customers must meet all requirements for tower co-location found in MPP-19 – "Use of MARCS Communication Towers, Shelters and Grounds".
- d) Fees for co-location are specified in MPP -19, Section 5 – "Fees for Co-location Services".
- e) Copies of all studies, drawings and analysis shall be provided to MARCS

**7.0 Site Entry**

- a) A personnel list detailing potential site visitors shall be provided by the party co-locating. This list shall include full name, date of birth and social security number for each potential site visitor. Each potential visitor submitted on the list shall be subject to an electronic record check, and/or a ten-print fingerprint check, conducted by the Ohio State Highway Patrol. This list shall be updated annually or as changes occur.
- b) Sites are alarmed. All personnel shall call the MARCS Network Operations Center (NOC) at 1-866-646-2727, before entering the gate and immediately before departure of the compound.
- c) Anyone entering the site shall provide their name, company and reason for entry.

**7.1 Shelter Entry**

- a) Shelters are alarmed. All personnel shall call the MARCS Network Operations Center (NOC) at 1-866-646-2727, before entering the gate and immediately before departure of the compound.
- b) Anyone entering the shelter shall provide their name, company and reason for entry.
- c) Shelter entry keys are available at the nearest OSHP Post with verification of identity through valid government issued photo ID.
- d) All shelter keys **must** be returned to the same OSHP Post **upon leaving the site**.

**8.0 Administrative**

- a) Copies of all documentation regarding site co-location shall be provided to MARCS by the collocating party.
- b) All work shall be completed by a MARCS approved contractor.
- c) Any and all costs associated with a co-location are the sole responsibility of the party collocating, unless otherwise specified in the MARCS License Agreement.
- d) No equipment shall become operational until all requirements contained herein have been met, and an inspection of the site has been completed and approved by a MARCS site engineer.
- e) Equipment tampering by any party collocating, or their designee, shall be subject to criminal investigation and prosecution to the full extent of the law. Any equipment tampering shall be grounds for immediate eviction from the site.
- f) These requirements for co-location are in addition to any other terms and conditions of the MARCS License Agreement with the party collocating.
- g) All parties collocating must additionally follow the co-location requirements found in MPP-19 – “Use of MARCS Communication Towers, Shelters and Grounds” and terms and conditions set forth in the MARCS License Agreement.
- h) Changes to initial installation to shelter/site shall be approved by MARCS technical staff prior to changes. Changes shall not be made prior to MARCS approval.
- i) Violators of this policy shall be subject to disconnection of service and removal of equipment.
- j) All equipment installed inside the MARCS shelter shall be labeled with the following information:

COMPANY NAME \_\_\_\_\_  
EMERGENCY CONTACT NAME \_\_\_\_\_  
EMERGENCY CONTACT PHONE \_\_\_\_\_

- k) A current copy of co-locators FCC license shall be submitted to MARCS prior to installation of any equipment
- l) **Applicants must complete attached “Form A” and return to MARCS to begin process.**