

Flagler County Public School District Site Name – Palm Coast High Site Compliance **Measurements** Report

5500 E. Highway 100 Palm Coast, FL 32164

Site visit date: December 20, 2023

Site visit time: 10:00 AM Site survey by: Oliver Smith

Latitude: N29-28-44.51 Longitude: W81-12-29.88 Structure Type: Monopole

Report generated date: December 27, 2023

Report by: Kevin Smith

Customer Contact: Dave Freeman

All field measurements performed in publicly accessible areas in proximity to the site are compliant with the FCC Rules and Regulations.

© 2023 Sitesafe, LLC. Vienna, VA



sealed 27dec2023 mike@h2dc.com H2DC PLLC FL CoA#: 32201



Flagler County Public School District Palm Coast High Radio Frequency (RF) Site Compliance Report



5500 E. Highway 100, Palm Coast, FL 32164



Table of Contents

1	EXECUTIVE SUMMARY		
2	REC	GULATORY BASIS	2
	2.1 2.2	FCC Rules and Regulations	
3	SITE	COMPLIANCE	4
	3.1 3.2	SITE COMPLIANCE STATEMENT	
4	SAF	ETY PLAN AND PROCEDURES	5
5	AN	ALYSIS	6
	5.1	SITE MEASUREMENTS	6
6	SITE	AUDIT	9
	6.1 6.3	SITE ACCESS PROCEDURES	
7	FIEL	D TECHNICIAN CERTIFICATION	21
8	ENG	GINEER CERTIFICATION	22
Α	PPEND	DIX A - STATEMENT OF LIMITING CONDITIONS	23
Α	PPEND	DIX B – DEFINITIONS	24
Α	PPEND	DIX C – RULES & REGULATIONS	27
		nation of Applicable Rules and Regulations	
Α	PPEND	DIX D - GENERAL SAFETY RECOMMENDATIONS	28
	Additi	onal Information	29



1 Executive Summary

Flagler County Public School District has contracted with Sitesafe, LLC. (Sitesafe), an independent Radio Frequency (RF) regulatory and engineering consulting firm, to determine whether the communications site, Palm Coast High, located at 5500 E. Highway 100, Palm Coast, FL, is in compliance with the Federal Communication Commission (FCC) Rules and Regulations for RF emissions.

Sitesafe's field personnel visited Palm Coast High on December 20, 2023. This report contains a detailed summary of the RF environment at the site including:

- Site compliance determination;
- Photographs of the site;
- Diagram of the site;
- Record of any Maximum Permissible Exposure ("MPE") measurements taken on the site, as applicable

This report addresses exposure to radio frequency electromagnetic fields in accordance with the FCC Rules and Regulations for all individuals, classified in two groups, "Occupational or Controlled" and "General Public or Uncontrolled."

All field measurements performed in publicly accessible areas in proximity to the site are compliant with the FCC Rules and Regulations, as described in OET Bulletin 65.

During our field visit, Sitesafe documented the presence and location of signs and barriers. This document specifically addresses compliance of Crown Castle's existing tower identified as "BU 810072" and physical measurements from the collocated transmitting facilities, which together constitute the RF environment at the site.

If you have any questions regarding RF safety and regulatory compliance, please do not hesitate to contact Sitesafe's Customer Support Department at (703) 276-1100.



2 Regulatory Basis

2.1 FCC Rules and Regulations

In 1996, the Federal Communications Commission (FCC) adopted regulations for the evaluating of the effects of RF emissions in 47 CFR § 1.1307 and 1.1310. The guideline from the FCC Office of Engineering and Technology is Bulletin 65 ("OET Bulletin 65"), Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields, Edition 97-01, published August 1997. Since 1996 the FCC periodically reviews these rules and regulations as per their congressional mandate. Most recently, the FCC has reviewed these rules and regulations beginning in 2019 and have finalized their review in May 2021 with the US Court of Appeals.

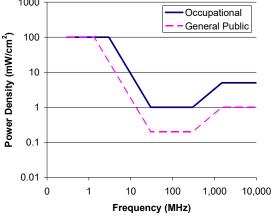
FCC regulations define two separate tiers of exposure limits: Occupational or "Controlled environment" and General Public or "Uncontrolled environment". The General Public limits are generally five times more conservative or restrictive than the Occupational limit. These limits apply to *accessible* areas where workers or the general public may be exposed to Radio Frequency (RF) electromagnetic fields.

Occupational or Controlled limits apply in situations in which persons are exposed as a consequence of their employment and where those persons exposed have been made fully aware of the potential for exposure and can exercise control over their exposure.

An area is considered a Controlled environment when access is limited to these aware personnel. Typical criteria are restricted access (i.e. locked or alarmed doors, barriers, etc.) to the areas where antennas are located coupled with proper RF warning signage. A site with Controlled environments is evaluated with Occupational limits.

All other areas are considered Uncontrolled environments. If a site has no access controls or no RF warning signage it is evaluated with General Public limits.







Limits for Occupational/Controlled Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm²)	Averaging Time E ² , H ² or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f ²)*	6
30-300	61.4	0.163	1.0	6
300-1500			f/300	6
1500-			5	6
100,000				

Limits for General Population/Uncontrolled Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm²)	Averaging Time E ² , H ² or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f ²)*	30
30-300	27.5	0.073	0.2	30
300-1500			f/1500	30
1500-			1.0	30
100,000				

f = frequency in MHz

2.2 OSHA Statement

The General Duty clause of the OSHA Act (Section 5) outlines the occupational safety and health responsibilities of the employer and employee. The General Duty clause in Section 5 states:

- (a) Each employer -
 - (1) shall furnish to each of his employees' employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees;
 - (2) shall comply with occupational safety and health standards promulgated under this Act.
- (b) Each employee shall comply with occupational safety and health standards and all rules, regulations, and orders issued pursuant to this Act which are applicable to his own actions and conduct.

OSHA has defined Radiofrequency and Microwave Radiation safety standards for workers who may enter hazardous RF areas. Regulation Standards 29 CFR § 1910.147 identify a generic Lock Out Tag Out procedure aimed to control the unexpected energization or start up of machines when maintenance or service is bng performed.

^{*}Plane-wave equivalent power density



3 Site Compliance

3.1 Site Compliance Statement

Upon evaluation of measured RF emission levels from all operators at this site, and a thorough review of site access procedures, RF hazard signage and visible antenna locations, Sitesafe has determined that:

All field measurements performed in publicly accessible areas in proximity to the site are compliant with the FCC Rules and Regulations, as described in OET Bulletin 65.

The compliance determination is based on actual physical measurements.

3.2 Actions for Site Compliance

Based on common industry practice and our understanding of FCC and OSHA requirements, this section provides a statement of recommendations for site compliance. No additional RF alert signage recommendations have been proposed based on existing measurements of MPE levels.

All field measurements performed in publicly accessible areas in proximity to the site are compliant with the FCC Rules and Regulations.

Electromagnetic field measurements were performed with a calibrated instrument at ground level around the base of the monopole (including the adjacent sports field(s)), on the adjacent elevated bleachers, and within the nearby school building(s). All field measurements performed at the above referenced locations were less than 1% of the FCC Occupational MPE limit (or less than 5% of the FCC General Public MPE limit) and well within the FCC standards for electromagnetic field safety.

Note: Ensure all existing signage (NOC Information & Notice signage posted on the compound access gate) documented in this report still exists on site.

Note: For overall compliance, access to the site (i.e., access road, gate, climbing point(s), etc.) must remain locked/restricted.



4 Safety Plan and Procedures

The following items are general safety recommendations that should be administered on a site by site basis as needed by the carrier.

<u>General Maintenance Work</u>: Any maintenance personnel required to work immediately in front of antennas and / or in areas indicated as above 100% of the Occupational MPE limits should coordinate with the wireless operators to disable transmitters during their work activities.

<u>Iraining and Qualification Verification:</u> All personnel accessing areas indicated as exceeding the General Population MPE limits should have a basic understanding of EME awareness and RF Safety procedures when working around transmitting antennas. Awareness training increases a workers understanding to potential RF exposure scenarios. Awareness can be achieved in a number of ways (e.g. videos, formal classroom lecture or internet based courses).

<u>Physical Access Control</u>: Access restrictions to transmitting antennas locations is the primary element in a site safety plan. Examples of access restrictions are as follows:

- Locked door or gate
- Alarmed door
- Locked ladder access
- Restrictive Barrier at antenna (e.g. Chain link with posted RF Sign)

<u>RF Signage:</u> Everyone should obey all posted signs at all times. RF signs play an important role in properly warning a worker prior to entering into a potential RF Exposure area.

Assume all antennas are active: Due to the nature of telecommunications transmissions, an antenna transmits intermittently. Always assume an antenna is transmitting. Never stop in front of an antenna. If you have to pass by an antenna, move through as quickly and safely as possible thereby reducing any exposure to a minimum.

<u>Maintain a 3 foot clearance from all antennas:</u> There is a direct correlation between the strength of an EME field and the distance from the transmitting antenna. The further away from an antenna, the lower the corresponding EME field is.



5 Analysis

5.1 Site Measurements

This section provides a summary of the measurements collected at the site. Actual measurements locations at which these data points were collected are included in the Measurements Diagram shown below. Two types of measurements were collected at each measurement location: maximum and spatial average. The spatial average measurement consists of a collection of ten (10) measurements within a ten (10) second time interval taken from zero (0) to six (6) feet in height. The purpose of this measurement technique is to identify the average power density over the dimensions of a typical human body.

Table 1 below contains all the measurements collected from accessible areas located at the site at the time of Sitesafe's visit. Whenever possible, measurements are taken in front of the antenna in the transmitting direction. However, because of the antenna configuration at this site, specific emissions could not be discerned from nearby facilities, and no attempt was made to determine power density levels from a specific transmitting antenna.

Abbreviations used in the Measurements Diagram:

PH=##'	Penthouse at ## feet above main roof
M##	Measurement ## taken during a site visit

Highest Measured Occupational Level: <1%

This value is equal to:

Highest General Public Level: <5%

Table 1: Spatial Average and Maximum Occupational Measurements					
Measurements	Spatial	Maximum	Measurements	Spatial	Maximum
Points	Average		Points	Average	
M1	<1 %	<1 %	M9	<1 %	<1 %
M2	<1 %	<1 %	M10	<1 %	<1 %
M3	<1 %	<1 %	M11	<1 %	<1 %
M4	<1 %	<1 %	M12 (In-Building)	<1 %	<1 %
M5	<1 %	<1 %	M13	<1 %	<1 %
M6	<1 %	<1 %	M14 (In-Building)	<1 %	<1 %
M7	<1 %	<1 %	M15 (In-Building)	<1 %	<1 %
M8	<1 %	<1 %			

RF meters and probes have been calibrated and used according to the manufacturer's specifications. Measurements provide a view of the MPE percentage levels at the site at the time of Sitesafe's site visit.

All measurement locations are identified in the Measurement Diagram below. The locations of measurements in the diagram can be cross referenced with Table 1 (above) to determine the actual spatial average and maximum measurement value per location.



Palm Coast High Measurement Locations – Detailed View





6 Site Audit

6.1 Site Access Procedures

A site visit was conducted on December 20, 2023 at approximately 10:00 AM. The weather conditions were Sunny with a temperature of 60 degrees. At that time, a diagram of the site was verified, obtained or produced containing the location of the tower, RF signs and access points on site. These antennas photographed.

The following information was gathered regarding site access at the facility.

Site access was locked or restricted at the time of the site visit. The compound gate was physically restricted and bolted closed.

For site access, contact Dave Freeman a week in advance to schedule an appointment. Dave Freeman "Chief of Operational Services" with School District of Flagler County at Phone: 386-437-7526 Ext 1180, or Email: freemand@flaglerschools.com.

RF Advisory signage was posted at the tower compound gate.



Figure 1: Compound Gate Access



6.3 Site Pictures



Figure 2: Site Photo - South facing North



Figure 3: Site Photo - East facing West





Figure 4: Site Photo – School Overview



Figure 5: Site Photo - School Close-up





Figure 6: Site Photo - Equipment Compound Northeast facing Southwest



Figure 7: Site Photo - Equipment Compound East facing West





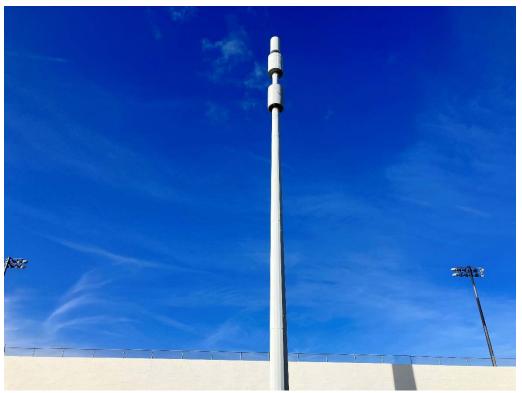


Figure 9: Tower Shrouded Antennas





Figure 10: Tower Shrouded Antennas



Figure 11: Tower Shrouded Antennas





Figure 12: Site Photo – Building 7



Figure 13: Site Photo – Building 7 Overview





Figure 14: Site Photo – Building 12



Figure 15: Site Photo - Building 12 Overview





Figure 16: Site Photo - West facing East



Figure 17: Site Photo - Southwest facing Northeast





Figure 18: Site Photo - Photo from Bleachers facing Northwest







Figure 20: Site Photo - Photo from Bleachers facing Southwest



Figure 21: Site Photo - Photo from Bleachers facing South





Figure 22: Site Photo - Gardens Located East of the Tower



Figure 23: Site Photo - Shotput Field Located North of the Tower

7 Field Technician Certification

I, Oliver Smith, state:

That I am an employee of Sitesafe, LLC., in Vienna, Virginia, which provides RF

compliance services to clients in the wireless communications industry; and

That I have successfully completed RF Safety Awareness training, am aware of the

hazards and, therefore, can be exposed to RF fields classified for "Occupational"

exposure;

That I am familiar with the Rules and Regulations of the Federal Communications

Commission (FCC) as well as the regulations of the Occupational Safety and Health

Administration (OSHA), both in general and specifically as they apply to the FCC

Guidelines for Human Exposure to Radio-frequency Radiation; and

That I have been trained in the proper use of measurement equipment, and have

successfully completed Sitesafe training in policy, procedure and proper site

measurement; and

That I performed survey measurements of the RF environment at the site identified as

Palm Coast High on December 20, 2023 at 10:00 AM in order to determine where there

might be electromagnetic energy that is in excess of both the Controlled Environment

and Uncontrolled Environment levels; and

That the survey measurements were performed with measurement equipment, model

WaveControl SMP2 field intensity meter (serial number 22SN1860) and model

WaveControl WPF60S field intensity probe, (serial number 22WP220019) calibrated on

2/28/2022; and

That I have prepared this Site Compliance Report and believe it to be true and

accurate to the best of my knowledge and based on data gathered.

By: Oliver Smith

8618 Westwood Center Drive • Suite 315 • Vienna, VA 22182 703.276.1100 • info@sitesafe.com

SiteSafe

8 Engineer Certification

The professional engineer whose seal appears on the cover of this document hereby certifies

and affirms:

That I am registered as a Professional Engineer in the jurisdiction indicated in the

professional engineering stamp on the cover of this document; and

That I, Michael A. McGuire, P.E., am currently and actively licensed to provide (in this

state/jurisdiction as indicated within the professional electrical engineering seal on

the cover of this document) professional electrical engineering services, as an

employee of Hurricane Hill Development Company, PLLC, a duly authorized/

registered engineering firm (in this state, as applicable) on behalf of Site Safe, LLC;

and

That I am thoroughly familiar with the Rules and Regulations of the Federal

Communications Commission (FCC) as well as the regulations of the

Occupational Safety and Health Administration (OSHA), both in general and

specifically as they apply to the FCC Guidelines for Human Exposure to Radio-

frequency Radiation; and

That survey measurements of the site environment of the site identified as Palm

Coast High have been performed in order to determine where there

might be electromagnetic energy that is in excess of both the Controlled

Environment and Uncontrolled Environment levels; and

That I have thoroughly reviewed this Site Compliance Report and believe it to be true

and accurate to the best of my knowledge as assembled by and attested to by

Kevin Smith.

December 27, 2023

8618 Westwood Center Drive • Suite 315 • Vienna, VA 22182 703.276.1100 • info@sitesafe.com

22



Appendix A - Statement of Limiting Conditions

Sitesafe field personnel visited the site and collected data with regard to the RF environment. Sitesafe will not be responsible for matters of a legal nature that affect the site or property. The property was visited under the premise that it is under responsible ownership and management and our client has the legal right to conduct business at this facility.

Due to the complexity of some wireless sites, Sitesafe performed this visit and created this report utilizing best industry practices and due diligence. Sitesafe cannot be held accountable or responsible for anomalies or discrepancies due to actual site conditions (i.e., mislabeling of antennas or equipment, inaccessible cable runs, inaccessible antennas or equipment, etc.) or information or data supplied by Flagler County Public School District, the site manager, or their affiliates, subcontractors or assigns.

Sitesafe may note in the Site Compliance Report any adverse physical conditions, such as needed repairs, observed during the survey of the subject property or that Sitesafe became aware of during the normal research involved in performing this survey. Sitesafe will not be responsible for any such conditions that do exist or for any engineering or testing that might be required to discover whether such conditions exist. Because Sitesafe is not an expert in the field of mechanical engineering or building maintenance, the Site Compliance Report must not be considered a structural or physical engineering report.

Sitesafe obtained information used in this Site Compliance Report from sources that Sitesafe considers reliable and believes them to be true and correct. Sitesafe does not assume any responsibility for the accuracy of such items that were furnished by other parties. When conflicts in information occur between data provided by a second party and physical data collected by Sitesafe, the physical data will be used.



Appendix B - Definitions

Compliance – The determination of whether a site is safe or not with regards to Human Exposure to Radio Frequency Radiation from transmitting antennas.

Decibel (dB) – A unit for measuring power or strength of a signal.

Duty Cycle – The percent of pulse duration to the pulse period of a periodic pulse train. Also, may be a measure of the temporal transmission characteristic of an intermittently transmitting RF source such as a paging antenna by dividing average transmission duration by the average period for transmission. A duty cycle of 100% corresponds to continuous operation.

Gain (of an antenna) – The ratio of the maximum intensity in a given direction to the maximum radiation in the same direction from an isotropic radiator. Gain is a measure of the relative efficiency of a directional antennas as compared to an omni directional antenna.

General Population/Uncontrolled Environment – Defined by the FCC, as an area where RFR exposure may occur to persons who are unaware of the potential for exposure and who have no control of their exposure. General Population is also referenced as General Public.

Generic Antenna – For the purposes of this report, the use of "Generic" as an antenna model means the antenna information was not provided and could not be obtained while on site.

Isotropic Antenna – An antenna that is completely non-directional. In other words, an antenna that radiates energy equally in all directions.

Maximum Measurement – This measurement represents the single largest measurement recorded when performing a spatial average measurement.

Maximum Permissible Exposure (MPE) – The RMS and peak electric and magnetic field strength, their squares, or the plane-wave equivalent power densities associated with these fields to which a person may be exposed without harmful effect and with acceptable safety factor.

Occupational/Controlled Environment – Defined by the FCC, as an area where Radio Frequency Radiation (RFR) exposure may occur to persons who are aware of the potential for exposure as a condition of employment or specific activity and can exercise control over their exposure.

OET Bulletin 65 – Technical guideline developed by the FCC's Office of Engineering and Technology to determine the impact of Radio Frequency radiation on Humans. The guideline was published in August 1997.

OSHA (Occupational Safety and Health Administration) – Under the Occupational Safety and Health Act of 1970, employers are responsible for providing a safe and healthy workplace for their employees. OSHA's role is to promote the safety and health of America's working men and women by setting and enforcing standards; providing training, outreach and education; establishing partnerships; and



encouraging continual process improvement in workplace safety and health. For more information, visit www.osha.gov.

Radio Frequency Radiation – Electromagnetic waves that are propagated from antennas through space.

Spatial Average Measurement – A technique used to average a minimum of ten (10) measurements taken in a ten (10) second interval from zero (0) to six (6) feet. This measurement is intended to model the average energy an average sized human body will absorb while present in an electromagnetic field of energy.



Appendix C - Rules & Regulations

Explanation of Applicable Rules and Regulations

The FCC has set forth guidelines in OET Bulletin 65 for human exposure to radio frequency electromagnetic fields. Specific regulations regarding this topic are listed in Part 1, Subpart I, of Title 47 in the Code of Federal Regulations. Currently, there are two different levels of MPE - General Public MPE and Occupational MPE. An individual classified as Occupational can be defined as an individual who has received appropriate RF training and meets the conditions outlined below. General Public is defined as anyone who does not meet the conditions of being Occupational. FCC and OSHA Rules and Regulations define compliance in terms of total exposure to total RF energy, regardless of location of or proximity to the sources of energy.

It is the responsibility of all licensees to ensure these guidelines are maintained at all times. It is the ongoing responsibility of all licensees composing the site to maintain ongoing compliance with the FCC Rules and Regulations. Individual licensees that contribute less than 5% MPE to any total area out of compliance are not responsible for corrective actions.

OSHA has adopted and enforces the FCC's exposure guidelines. A building owner or site manager can use this report as part of an overall RF Health and Safety Policy. It is important for building owners/site managers to identify areas in excess of the General Population MPE and ensure that only persons qualified as Occupational are granted access to those areas.

Occupational Environment Explained

The FCC definition of Occupational exposure limits apply to persons who:

- are exposed to RF energy as a consequence of their employment;
- have been made aware of the possibility of exposure; and
- can exercise control over their exposure.

OSHA guidelines go further to state that persons must complete RF Safety Awareness training and must be trained in the use of appropriate personal protective equipment.

In order to consider this site an Occupational Environment, the site must be controlled to prevent access by any individuals classified as the General Public. Compliance is also maintained when any non-occupational individuals (the General Public) are prevented from accessing areas measured above 100% General Public MPE as shown in the attached RF measurements diagram. In addition, a person must be aware of the RF environment into which they are entering. This can be accomplished by an RF Safety Awareness class, and by appropriate written documentation such as this Site Compliance Report.

All Flagler County Public School District employees who require access to this site must complete RF Safety Awareness training and must be trained in the use of appropriate personal protective equipment.



Appendix D - General Safety Recommendations

The following are *general recommendations* appropriate for any site with accessible areas in excess of 100% General Public MPE. These recommendations are not specific to this site. These are safety recommendations appropriate for typical site management, building management, and other tenant operations.

- 1. All individuals needing access to the main site (or the area indicated to be in excess of General Public MPE) should wear a personal RF Exposure monitor, successfully complete proper RF Safety Awareness training, and have and be trained in the use of appropriate personal protective equipment.
- 2. All individuals needing access to the main site should be instructed to read and obey all posted placards and signs.
- 3. The site should be routinely inspected and this or similar report updated with the addition of any antennas or upon any changes to the RF environment including:
- adding new antennas that may have been located on the site
- removing of any existing antennas
- changes in the radiating power or number of RF emitters
- 4. Post the appropriate **NOTICE**, **CAUTION**, or **WARNING** sign at the main site access point(s) and other locations as required. Note: Please refer to Measurement Diagram(s) in Section x, to inform <u>everyone</u> who has access to this site that beyond posted signs there may be levels in excess of the limits prescribed by the FCC. The signs below are examples of signs meeting FCC guidelines.







- 5. Ensure that the site door remains locked (or appropriately controlled) to deny access to the general public if deemed as policy by the building/site owner.
- 6. Signage Recommendations made in report were based off the below assumptions:
- Blue Notice Signs for Occupational MPE measurements above 10%
- Yellow Caution Signs for Occupational MPE measurements above 50%
- Red Warning Signs for Occupational MPE measurements above 250%



7. Use of a Personal Protective Monitor: When working around antennas, Sitesafe strongly recommends the use of a Personal Protective Monitor (PPM). Wearing a PPM will properly forewarn the individual prior to entering an RF exposure area.

8. Use of a Personal Protective Monitor: When working around antennas, Sitesafe strong recommends the use of a Personal Protective Monitor (PPM). Wearing a PPM will properly forewarn the individual prior to entering an RF exposure area.

Keep a copy of this report available for all persons who must access the site. They should read this report and be aware of the potential hazards with regards to RF and MPE limits.

Additional Information

Additional RF information is available at the following sites:

https://www.fcc.gov/general/radio-frequency-safety-0

https://www.fcc.gov/engineering-technology/electromagnetic-compatibility-division/radio-frequency-safety/faq/rf-safety

OSHA has additional information available at: https://www.osha.gov/SLTC/radiofrequencyradiation/index.html