

# RISK COMMUNIQUÉ

## ***Remote Communications Sites Security and Climate Control***

*Modern emergency communications systems rely on remote tower sites, equipment shelters, microwave links and transmit/receive sites to provide reliable, redundant contact with emergency responders and the public.*

*These remote site locations, by definition, are usually placed in areas that are most beneficial to achieve optimal signal strength or maximum penetration of radio signal. They can also be found in places that are less desirable and, more often than not, great distances from other occupied buildings.*

*The reliability and an increased risk of failure arise when this critical equipment becomes forgotten. Typically, this class of electronics is designed to very high standards that include a long operational life. However, extreme conditions and deliberate interference can shorten the life span or render it inoperable without warning. Properly monitored and maintained, these sites can provide the reliability that is needed to deliver quality communications and help protect the public and emergency service personnel. This risk bulletin addresses two key areas of concern: security and climate control.*

### **Security**

Theft, vandalism, threats of violence, acts of terrorism, man-made and natural disasters consume our headlines daily and remote sites are not immune from these exposures. Treat security at these sites the same as the primary 911 communications center because it is just as important to the operation. From a planning and operational standpoint, general precautions and standard operating guidelines can help provide protection of the facility that encompasses several of the risk factors mentioned above.

Consider a site specific evaluation of these remote areas to determine what preventive measures are needed as these needs may vary greatly. Included below are general guidelines for remote site security as recommended by NFPA 1221.<sup>1</sup>

- Entry to remote communications facilities shall be restricted to authorized personnel only. Authorized personnel that are not identified as mission critical for the Public Safety Answering Point (PSAP) should be escorted by an employee with the proper authorization.
- Install open door or entry alarms on all equipment shelters or buildings.
- Install fortified entry doors and tamper proof locks on all equipment shelters or buildings.
- Security fencing, barriers or barricades should be installed to prevent unauthorized vehicle from approaching the area housing critical equipment for a distance of 85 feet.
- Provide proper and sufficient lighting to illuminate the immediate area and the surrounding site as allowed.
- Protect components not included in the secure compound area (such as guide wires and commercial utility sources needed to continue operations).
- Design equipment shelters/buildings to national standards as referenced in NFPA 1221.

<sup>1</sup> NFPA 1221: <http://www.nfpa.org>

*This is a sample guideline furnished to you by VFIS. Your organization should review this guideline and make the necessary modifications to meet your organization's needs. The intent of this guideline is to assist you in reducing exposure to the risk of injury, harm, or damage to personnel, property, and the general public. For additional information on this topic, contact your VFIS Risk Control Representative at (800) 233-1957.*

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Updating existing facilities to current standards may be cost prohibitive, however, an evaluation of the site can provide a priority checklist for budgetary consideration and implementation. These general guidelines can also be used for planning a new facility.

## ***Climate control***

Failure of equipment from an operational standpoint may interrupt critical communications. Also, modern equipment is typically server- or computer-based and once it is damaged, repair can be costly. To help protect this critical equipment, it is normally housed inside equipment shelters/buildings where an acceptable constant temperature may be maintained. While many nationally recognized communication vendors, manufacturers, associations and publications agree that the equipment can be maintained at 72 degrees Fahrenheit<sup>2</sup>, the safest temperature is the one recommended by the manufacturer of the critical equipment at your location. Maintaining the constant temperature is a high priority as well as a constant challenge. In addition to the absorbed temperature and humidity from ambient conditions, the equipment dissipates heat during its operation.

Conventional HVAC equipment may not be the best solution for these communication sites because specific humidity levels need to be achieved and redundancy in the form of alternating units and or backup units are required. Additionally, as equipment is added or removed, the system needs to be adjusted or replaced depending on the current heat load. The selection of a qualified HVAC vendor and establishing a contractual agreement for routine maintenance and 24-hour emergency service requirements are important.

When evaluating a remote site or equipment operational area, consider:

- Constant monitoring of temperature, humidity and operational status.
- Having independent HVAC systems serving only the remote site.
- Locating fresh air intakes so that may be maintained free of debris that interferes with its intended function.
- Providing an uninterrupted power supply for the HVAC units.
- Having back up or redundant units that will come online automatically.

## ***Summary***

Remote communication sites are often necessary for emergency service organizations to perform effectively and efficiently. Inoperable communications equipment can be a disaster to the jurisdiction. Regular monitoring, routine maintenance and protection of critical equipment are important to keep the equipment operating properly.

## **References:**

1. National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169  
NFPA 1221-Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems, 2013 edition.
- American Society of Heating, Refrigerating and Air-Conditioning Engineers, 1791 Tullie Circle, N.E., Atlanta, GA 30329, ASHRAE Technical Committee 9.9 (2005) Datacom Equipment Power Trends and Cooling Applications, White paper number 2, ASHRAE 3 Copyright.

<sup>2</sup> American Society of Heating, Refrigeration and Air-Conditioning Engineers, Inc. ASHRAE Vol. 3 No.4

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