Document Section	**Preventative Maintenance**	**Status**: Subcommittee
State Standard Number	**4.5.0**	**Approval Date:** 5/24/2022
Standard Title	Preventative Maintenance	
11/29/2021	11/29/2021	**SIEC Approval**:
Replaces Document Dated	11/29/2021	5/24/2022
Date Revised/Reviewed	5/24/2022	

1. Purpose or Objective

The purpose of this standard is to define standards for SIRN system and subsystem preventative maintenance to safeguard performance levels and to protect the overall functionality and integrity of the system for all users.

2. Technical Background

- **Capabilities**

Routine and proactive preventative maintenance protects the integrity of the system, prolongs its operational lifecycle and better aids in anticipating and addressing network issues prior to failure. In addition, preventative maintenance protects the warranties of SIRN hardware and software.

Uniform maintenance standards also help ensure consistent levels of functionality and reliability across all network elements and subsystems statewide regardless of the subsystem owner or maintenance provider.

- **Constraints**

Improper maintenance or lapses in routine maintenance pose a risk to the operations of the SIRN system and subsystems; may affect equipment warranties; and can lead to users having inconsistent levels of experience and functionality across the State.

3. Operational Context

All SIRN subsystems are subject to preventative maintenance as described in this Standard and in accordance to industry and manufacturer standards applicable to the subsystem. It is the responsibility of the Statewide System Administrator, individual Subsystem Administrators and PSAP Managers to perform the described preventative maintenance.

4. Minimum Protocol/ Standard

Preventative maintenance refers to proactive, periodic, and routine maintenance activities including diagnostics, inspections, testing, advance repairs and patches designed to deter system issues and maximize system longevity.

Preventative maintenance activities must be performed on all subsystems including:

- SIRN core network hardware and applications
- Site RF equipment
- Physical infrastructure (e.g., towers, shelters, fire suppression systems, site grounds)
- Primary and backup power systems
- Backhaul links and interfaces
- Dispatch center equipment

Each SIRN subsystem shall have a comprehensive preventative maintenance plan detailing the maintenance activities, performance objectives and frequency.

Preventative maintenance plans must be based on the SIRN vendor contract, original manufacturer recommendations and industry best practices.

See Appendix A for a *sample* RF site preventative maintenance checklist. The SIRN Systemwide Administrator maintains a complete and up-to-date *SIRN Preventative Maintenance Check List* which can be made available upon request.

Related Standards

Several other SIRN standards address policy and procedure pertaining to system maintenance and shall be referenced in designing and performing preventative maintenance.

2.8.0. Operational Management: covers overall obligations and individual responsibilities of the Statewide and Subsystem Administrators as it pertains to system operations and maintenance.

2.9.0 Change Control: cover the process for requesting, performing and documenting changes to SIRN including those changes that occur as a result of preventative maintenance activities.

2.15.0 Dispatch Console Hardware_Profile Change Management: covers specific operational, maintenance and management responsibilities of PSAP Managers at it applies to dispatch subsystems.

2.17.0 SIRN Technical Staff and Maintenance Providers Training and Qualifications: covers the minimum required training and qualifications of maintenance and technical staff.

2.20 Routine System Updates: covers planned server and network level patches and software updates which are considered a component of preventative maintenance.

4.3.0 Notification for System Changes and Outages for details regarding issue response and notification responsibilities of all Administrators: Systemwide, Subsystem and Local User. Notifications during system affecting Preventative Maintenance must follow this Standard.

5. **Recommended Procedure**

As a centrally managed and operated system, the bulk of SIRN preventative maintenance will be performed per the SIRN vendor contract and under the oversight of SIRN Statewide System Administrator. Nonetheless, all individual SIRN Administrators including Statewide Administrator, Subsystem Administrators, and Local Administrators MUST perform preventative maintenance on self-maintained SIRN subsystems activities in accordance with this Standard.

6. **Management**

The Statewide System Administrator is responsible for overseeing and enforcing the preventative maintenance program for SIRN including all centrally-managed and self-maintained subsystems.

Appendix A: Sample Preventative Maintenance Checklist

PREVENTIVE MAINTENANCE CHECKLIST

Agency Location:

	Due Date	Completed Date	Completed By (Name & Agency)
Compound			
Driveway-Gate-Fence			
Function of locks			
Function of gate			
Driveway accessibility			
Signage intact			
Inspect fence-line: holes, loose barb wire			
Site			
Snow cleared			
Grass mowed and weeds chopped, treated and controlled			
Trash cleaned up			
Tower (visual inspection)			
Guy wires			
Antennas intact			
General appearance			
Feedlines Secure			
Tower lights functioning			
Paint Condition			
Fuel Tank (LPG or Diesel)			
Visual Inspection			
Fuel Line Condition / Regulator(s) operational			
Fuel Level			
Building			
Vandalism			
Building Condition			
Foundation Inspection (Building, Tower, Pads)			

Outside light working- intact			
Grounding wires intact			
Signage intact			
Clean intake air vents			
Intake vents – Louvers Adjusted / Operating Properly			
Entry doors and locks functioning			
Generator (Outside)			
Oil Level			
Coolant Level / Test			
Battery Fluid Level			
Battery Voltage			
Block Heater operational			
General Appearance – check for leaks			
Maintenance Comments current			
Inside Building			
Generator (Inside)			
Oil Level			
Coolant Level / Test			
Battery Fluid Level			
Battery Voltage			
Block Heater operational			
General Appearance – check for leaks			
Maintenance Comments current			
Automatic Transfer Switch			
General appearance of Transfer Switch (open door inspection)			
Generator Test (Load/No Load) {Close ATS Door First!}			
Fill out Log sheet			
Transmitter Area			
Temperature			
Smell – electrical / burnt			
Feedline Entry Panel Inspection			

Pressure gauge for antenna lines			
Update site log			
Battery rack for corrosion			
AC surge protectors green or black			
HVAC filters			
HVAC – Operational Test - Cooling			
HVAC – Operational Test - Heating			
Alarm system test			
Power Supplies / Batteries			
UPS Operational / Test			
Clean / Dust Building & Equipment			
Site Log Files			
Tech Data Sheets			
FCC Licenses Current			
FAA Logs Current			
RF Equip Logs Current			
Annual Maintenance			
Tightness of coax jumpers			
Sweep antenna lines			
Grounding system – conductance test			
EME Log Verification			
Fire Extinguisher			
Eye Wash Stations			
Safety Supplies Restocking			