

**Red Cliffs Rifle and Pistol Range**  
**Description of Cold Range Indicator (CRI) System**  
**March 7, 2018**

**I. The Cold Range Indicator System is composed of the following:**

- a. Six LED flashing lights (Cold Range Indicators, or CRIs) mounted to the steel columns, at the firing line, between the following pairs of shooting benches: 3 & 4, 7 & 8, 11 & 12, 15 & 16, 20 & 24.
- b. A 120-volt AC to 12-volt DC LED transformer, which powers the LED lights. This is located on the overhead beam between shooting benches 13 & 14.
- c. A system controller, in an enclosure, located close to the above transformer. The enclosure contains:
- d. A 120-volt relay, normally open, switch which controls ON/OFF power to the LED transformer. This relay is rated for one million cycles.
- e. A wireless receiver which controls the relay switch. The wireless receiver is paired with a remote, battery powered, two button, handheld transmitter (buttons labeled ON & OFF).
- f. A master system ON/OFF switch mounted on the steel column, at the firing line, between shooting benches 13 & 14.
- g. A manual ON/OFF control switch mounted to the steel column, behind the firing line, between shooting benches 9 & 10. This switch is a manual back-up for the handheld wireless transmitter. See note following II.d. below.

**II. Operation of the system is as follows:**

- a. The master switch should be in the OFF position whenever the range is closed. This removes power to the controller in order to prevent the indicator lights from being turned on when the range is closed and also to extend controller component life.
- b. The master switch is moved to the ON position when the range is open.
- c. In normal operation, the indicator LED lights are turned ON by pushing the ON button of the remote handheld transmitter. The LED lights are turned OFF by pushing the OFF button of remote handheld transmitter.
- d. In the event that the remote wireless control is not operational (failure of the wireless receiver or the remote handheld transmitter), the LED indicator lights can be turned ON/OFF by the manual ON/OFF switch located on the steel column, behind the firing line, between shooting benches 9 & 10.

**Note: The manual ON/OFF switch is a parallel path to the action of the wireless receiver, i.e., if either circuit is closed, the LED lights will be ON. In other words, if the manual ON/OFF switch is in the ON position, pushing the OFF button of the handheld transmitter will have no effect. Conversely, if the indicator lights were turned ON via the remote handheld transmitter, they cannot be switched OFF by the manual ON/OFF switch.**

**III. Troubleshooting:**

- a. If the wireless receiver fails to function, check the in-line fuse (3-amp, 5x20mm, fast blow, glass) to the power supply located inside the controller enclosure.
- b. The handheld transmitter has a red indicator light that flashes whenever either button is pushed. If the indicator light does not flash, replace the battery. (A23 – 12-volt Alarm Battery)
- c. If a single LED indicator light fails, check the in-line fuse (3-amp, 5x20mm, fast blow, glass) located inside the mounting enclosure. The LED light module is attached to the enclosure cover plate. To gain access to the enclosure, remove the 4 screws that retain the cover plate to the enclosure.
- d. As long as 120-VAC power is provided to the controller, the manual ON/OFF switch will be able to control the ON/OFF status of the LED indicator lights, (but see note after II.d. above.)

**NOTE: A blue notebook with the detailed documentation for the CRI System components can be found in the Range office in the cupboard off to the left of the sign-in desk. It also contains spare batteries for the remote, and replacement fuses as required.**