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OIR-19-01 Be careful when choosing a radio receiver

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Be careful in choosing the radio receiver, there is an increasing number of legal sources of radio interference.

Radio frequency interference may cause demand response systems to fail. Part 15 transmitters receive no regulatory protection from interference. See

https://transition.fcc.gov/Bureaus/Engineering_Technology/Documents/bulletins/oet63/oet63rev.pdf

<http://www.arrl.org/part-15-radio-frequency-devices>

When transmitters and receivers operate in very close proximity at a shared antenna site, severe forms of interference can result, including transmitter and receiver intermodulation, receiver overload, and receiver desensitization. Because each site is different in terms of, for example, the transmitter/receiver bands and frequencies employed, the physical spacing between antennas utilized by different systems, and the types of signals involved, the solutions for resolving interference issues tend to be site specific and they may include the deployment of special filters (e.g., high performance cavity filters) and other devices to allow the different systems to successfully coexist. Interference issues at shared antenna sites are typically resolved on a voluntary basis among the different parties, often with the help of the site owner, consulting engineers with specialized technical expertise, the frequency coordinators for the services/bands involved, or, potentially, in extreme cases involving public safety services, the FCC.

Overload: energy outside the victim's assigned frequencies that its receiver cannot ignore, due to imperfect filtering in the receiver. This mode (also known as out-of-band interference, blocking, or desensitization) involves several possible undesired responses of the receiver to the fundamental emissions in the transmitter's tuned channel; in other words, cases where signals outside of the nominal receiver bandwidth cause the victim receiver to experience an increased noise level or produce non-linear responses. See

<https://transition.fcc.gov/bureaus/oet/tac/tacdocs/WhitePaperTACInterferenceLimitsv1.0.pdf>

As lighting systems are converted to LED devices (unintentional radiators

https://en.wikipedia.org/wiki/Unintentional_radiator), the number of switching power supplies that may cause interference increases. Unintentional radiators do have 15.109 Radiated emission limits. These limits don't ensure no interference within 10 meters of the device.

<https://www.govinfo.gov/content/pkg/CFR-2010-title47-vol1/pdf/CFR-2010-title47-vol1-sec15-109.pdf>

The condition spoke of in the attached video is most likely caused by overload from one or more switching power supplies (unintentional radiators).

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Additional submitted attachment is included below.

AUDIO ONLY

Sacramento
Municipal
Utility District

**Policy Committee
Meeting**

April 13, 2010

