

## EXHIBIT D

### DEPARTMENT OF NATURAL RESOURCES

#### MINIMUM COMMUNICATIONS SITE STANDARDS

1. State retains the right to inspect Lessee's equipment with 21 calendar days advance written notice to ensure compliance with site standards presently in effect or as may be amended. This clause shall not be construed as a duty to inspect.
2. Each transmitter at the site will be identified with the DNR document number, name of a person or service agency responsible for repairs, their telephone number, equipment receive frequency, and equipment transmit/receive tone frequencies.
3. All communications fixed transmitter installations shall employ isolators or alternative techniques meeting the same criteria, to minimize spurious radiation and intermodulation products. Additional filtering may be required according to frequency and interconnect devices as listed below. As the industry progresses, superior devices may be available and installed only with the written approval of State.
  - a. Transmitters in the 29.8 to 54 MHZ range shall have a low pass filter, band pass filter or cavity providing a minimum of 30 dB of attenuation removed 1.0 MHZ from the operating frequency.
  - b. Transmitters in the 66 to 88 MHZ range shall have at least 25 dB of isolation followed by a band pass cavity providing at least 20 dB of attenuation 1.0 MHZ removed from the operating frequency.
  - c. Transmitters in the 88 to 108 MHZ range operating at a power level of 350 watts or less shall have at least 25 dB of isolation followed by a band pass cavity providing at least 35 dB of attenuation 1.0 MHZ from the operating frequency.
  - d. Transmitters in the 88 to 108 MHZ range operating at a power level above 350 watts shall have a band pass cavity providing at least 25 dB of attenuation 1.4 MHZ from the operating frequency.
  - e. Transmitters in the 130 to 225 MHZ range shall have at least 50 dB of isolation followed by a low pass filter and a band pass cavity with a minimum of 15 dB of attenuation 1.0 MHZ removed from the operating frequency.
  - f. Transmitters in the 400 to 470 MHZ range shall have at least 50 dB of isolation followed by a low pass filter and a band pass cavity with a minimum of

15 dB of attenuation 2.0 MHZ removed from the operating frequency.

g. Transmitters in the 806 to 990 MHZ range shall have at least 50 dB of isolation followed by a low pass filter or a band pass filter with a minimum of 15 dB of attenuation 10 MHZ removed from the operating frequency and 40 dB of attenuation at 20 MHZ. Where mixed services share a common site, series cavities need be incorporated.

4. Lessee shall comply with General Engineering Standards, including but not limited to the following:

a. A band pass cavity/filter or crystal filter is recommended at the input of all receivers. Its purpose is to protect against RF energy "off frequency" from mixing in a non-linear device such the first RF amplifier in a receiver, which can re-radiate causing interference.

b. The band reject duplexer (cross notch duplexer) may not be used without the use of cavities or isolators.

c. Single braid coax cable is prohibited. Double shielded cable must have over 98.5% shield coverage. Single braid cable with resistive terminations is acceptable ONLY as a fixed method for relative signal strength measurements.

d. Jacketed coaxial cable is required. Unjacketed transmission line of any type is prohibited.

e. Use of N, TNC, DIN or other types of constant impedance connector is preferred over a non-constant impedance type. Effort should be made to prevent the use of coax adaptors.

f. All equipment is to be grounded. Grounding is to be done with low impedance conductor to the station ground grid, preferably with flat copper or heavy braid. The "green wire" of the AC power plug is not an acceptable grounding point. All cables are to be grounded to the tower at the point where the cables leave the tower for the building entry.

g. Transmitting systems must be checked periodically, which includes the isolator, VSWR on the load port of the isolator and overall system insertion loss.

h. Bare metallic ties are prohibited for securing transmission lines to towers. In the case of large lines, use of stainless steel or galvanized hangers is permitted. Hardware capable of rusting and dissimilar metals is prohibited. Transmission

lines are to be insulated from metallic structures and objects. It is the duty of the installation personnel to prevent "diode junctions" from taking place.

- i. All loose wire or metal objects are to be removed from the tower and site. Metal fencing should be vinyl coated.
- j. All equipment shall be licensed by FCC, or have a Radio Frequency Authorization from NTIA, (if required by the regulating agency) and be operated in full accordance with all applicable rules and regulations of the regulating agency. There shall be no modifications that violate "FCC Type Acceptance."
- k. Every effort should be made to protect the equipment from lightning damage. Feed-through lightning protectors shall be used on all coaxial cable connections to equipment enclosures. Gas, gap and MOV and Silicone Avalanche Diode (SAO) protectors shall be used in control, audio, telephone and power connections.
- l. Radios, equipment and batteries installed shall use support equipment that is braced, anchored and/or secured in a manner that prevents or reduces possible damage due to an earthquake.
- m. Installation personnel shall provide and install a water tight cable boot at the cable entry port when installing cables from the tower into the building.

5. Interference Policy Statement:

- a. In the event radio interference (RI) or physical interference occurs, all users of the site are required to participate in solving the problem by providing technical personnel and test equipment to locate the source of the specific problem. All equipment must be maintained in good working order and meet original manufacturers and FCC specification for reduction of transmitter spurious radiation. In the event radio interference (RI) occurs, and these standards are complied with, additional isolators, filters, cavities, etc., may be required to correct specific problems.
- b. Involved systems not in full compliance with these standards shall be required to comply immediately at their own expense.
- c. State has the right to require the offending transmitter owner/operator to finance the required corrections or equipment necessary to correct the problem. State at

its option may allow the affected receiver owner/operator to provide the necessary equipment (if one so chooses) for installation by the offender without surrendering ownership of the equipment and expect its use to be uninterrupted, i.e., not taken out of service without notifying the owner.

- d. The 2.0 GHZ band is being developed. It is unknown at this time what interference may be expected or caused and what products will be available for interference mitigation. Policies and standards will be developed as needed.
6. These are minimum standards of good engineering practice in the operation and maintenance of communication sites. These standards will be revised as deemed necessary by State.
  7. These Communication Site Facility Standards are developed in conjunction with the Western Washington Cooperative Interference Committee (WWCIC) and the Department of Natural Resources, Radio Program.
  8. For equipment using unlicensed frequencies:
    - a. All equipment shall be compliant with all FCC rules and regulations.
    - b. State has the right to require Lessee to provide additional interference protection devices for existing and new site users to reduce interference and accommodate site growth.
    - c. State has the right to require Lessee to reposition antennas on towers, add equipment shielding and reduce effective radiated power to reduce interference and accommodate site growth.
  9. Electrical Standards in State Facilities:
    - a. Only assigned electrical outlets shall be used.
    - b. Additions or modifications shall not be made to any electrical distribution system without first securing State's written permission.
    - c. Access to the panelboard is provided for the circuit breaker to the user's assigned outlets.
    - d. Equipment and units shall have internal fusing to protect the supply circuit.

- e. Cord connections for equipment and units shall have a ground wire and the attachment plugs shall have a "U" slot ground to provide a continuous ground from equipment to distribution panel.
- f. Equipment and units shall have their own surge protection.