

**Exhibit 1: Description of Plumas Sierra Rural Electric Cooperative
Program of Research and Experimentation**

Plumas Sierra Rural Electric Cooperative (PSREC) respectfully requests the issuance of an experimental license using the equipment and operating parameters set forth in its application for an experimental license (FCC File No. 0078-EX-PL-2010) (the "Application"). Grant of this license will enable PSREC to conduct research and experimentation using vacant spectrum in the television broadcast bands (the "TV white spaces") for the testing of fixed white spaces devices.¹

PSREC is working jointly with Spectrum Bridge in investigating the usefulness and utility of 'smart grid' applications that utilize available white space (UHF/VHF) spectrum. PSREC is also investigating the feasibility of providing rural broadband access. Spectrum Bridge will serve as a white space data base provider and assist in insuring compliance with the FCCs proposed white space rules.

As noted in the Application, PSREC seeks experimental authorization to operate in rural Plumas County California, along the 70 corridor between East Quincy and Beckwourth. Other fixed devices will be located within the area of operation specified in the Application. Spectrum Bridge will provide the necessary hardware and software to conduct these experiments. The intent is to utilize and apply TV White Spaces to the problem of enabling smart grid technologies for utilities and providing broadband Internet access to underserved areas.

The proposed field study will operate fixed stations from the licensed center points using an outdoor antenna structure and the following parameters:

Lower and upper frequencies and frequency units	168 MHz-216 MHz (channel size 6 MHz)
Power and power units	2 watts
ERP and ERP units	2 watts
Mean/peak	2 watts
Frequency tolerance	< 1 ppm
Station class (i.e., fixed or mobile).	fixed

The equipment to be used for these experiments is manufactured by Spectrum Bridge. The solution incorporates a fixed "base station" connected to the internet via a dedicated T-1 connection. The base station provides broadband connections (approx 3 mbits/sec (using an OFDM modulation and FSK)) to a number of fixed client devices that serve electrical substations and residences with broadband access where none exists today. One goal is to show how the lower frequency operation, combined with 6 MHz channels

¹ See *Unlicensed Operations in the TV Broadcast Bands; Additional Spectrum for Unlicensed Devices, Below 900 MHz and the 3 GHz Band*, Second Report and Order and Memorandum Opinion and Order, 23 FCC Rcd 16807 (2008).

of TV white space provides a practical solution to providing rural broadband. The client devices are capable of Ethernet bridging so, to the user, they look like a cable or DSL modem. The devices are all fixed in location and monitored/managed remotely. It is the intention of PSREC to upgrade the radios to commercial FCC-certified white space radios, when the rules and certification process is complete, to maintain the service to the local community.

PSREC's experiments will use White Space radios controlled by a white spaces database managed by Spectrum Bridge. These experiments are expected to facilitate fixed operations in the white spaces without causing harmful interference to incumbent television stations. The experimental authorization will allow PSREC to conduct research to demonstrate the potential of white spaces-based fixed networks to enable new wireless applications and services. PSREC will not transmit on any channel or in a manner that impacts an incumbent television licensee entitled to interference protection.

PSREC's experiments will have a reasonable promise of contribution to the development of the radio art. The Commission has indicated that it expects the availability of white space spectrum will promote the development and deployment of innovative new services. PSREC and Spectrum Bridge believe that this research effort will further these goals by facilitating techniques to test the extent of over-the-air television contours and to promote interference-free operations in white spaces.

PSREC fully anticipates that its experiments will further the development of innovative white spaces applications, and respectfully requests expedited processing of the Application.