## Question 7: Purpose of Experiment

San Diego Gas & Electric Company (SDG&E) is an electric utility located in Southern California with headquarters located in San Diego, California. SDG&E hereby requests an experimental license to test, evaluate and demonstrate broadband over power line ("BPL") technology for potential utility applications in the SDG&E service territory. In accordance with Question 7 (Exhibit Information) of Form 442, SDG&E provides the following information in support of its Application:

**A) The complete program of research and experimentation proposed:**

SDG&E has installed several BPL pilots using equipment from different manufacturers for the purpose of investigating the technology for potential utility applications. Under current FCC Rules, all BPL equipment installed on or after July 7, 2006 must be certified by the FCC. (47 CFR § 15.37(m)) To date, no manufacturer offers BPL equipment or systems that have been certified by the FCC. SDG&E would like to have the flexibility to continue with testing of equipment from multiple manufacturers, including the ability to test new equipment and construction configurations which may differ from those that have been submitted for certification by the manufacturers. Each pilot will generally include up to 20 overhead and 20 underground control/communication devices. Each control/communication device is typically comprised of 1 or 2 medium voltage cards and 1 or 2 low voltage cards. The medium voltage cards will be used to inject and repeat the BPL signal on the medium voltage lines, while the low voltage card is used to inject the BPL signal onto the low voltage line, bypassing the transformer. Depending on the number of medium voltage cards, 1 or 2 medium voltage couplers will be used to inject the signal onto the medium voltage distribution line. A low voltage coupler will be used to in conjunction with the low voltage card to inject the signal onto the service wire. If necessary, a repeater will be deployed on the secondary wire for the purpose of repeating the BPL signal to increase the propagation distance on the secondary service. The pilot will operate in the 1.7 to 80 MHz. range. SDG&E will observe notching requirements contained in Part 15 (*See*, 47 CFR §§ 16.611 and 15.615)

**B) The specific objectives sought to be accomplished:**

Through these pilots, SDG&E will collaborate with manufacturers to test multiple aspects of the equipment, including its performance, capacity, signal quality, data rates, spectrum interference potential and to develop construction standards compatible with utility practices. Because of applicable state regulations governing the configuration of utility electric systems, SDG&E may test construction configurations which may differ from those submitted for certification by the manufacturers for other parts of the United States.

**C) How the program of experimentation has a reasonable promise of contribution to the development, extension, expansion or utilization of the radio art, or is along the line not already investigated:**

Grant of the experimental license is in the public interest because it will provide a testing program for equipment from different manufacturers to verify performance claims and will permit further exploration of possible deployment by SDG&E. This will help to promote the further development of this new technology, and in particular will facilitate deployment of the technology in California.

**D) Details of Proposed Operation**

**Time Period**
Two years: August 2006 – August 2008
**Location(s)/ Geographic Area**
SDG&E service territory, in a 100 mile radius from the following center coordinates: 32°49'22" N, 117°8'34" W
**Equipment**
Various manufacturers
**Frequency Range**
1.7 to 80 MHz. SDG&E will observe notching requirements contained in Part 15 (*See*, 47 CFR §§ 16.611 and 15.615)
**Maximum ERP or EIRP, if applicable**
Tests will comply with Part 15 emissions limits.

**E) Certifications**
SDG&E certifies as follows regarding the proposed operations:
(i) It will not market, sell or lease equipment to end users;
(ii) It will not charge fees for use of equipment;
(iii) It understands that operation of unapproved devices must not cause harmful interference and will take steps to resolve any interference, including discontinuance of operation;
(v) It will advise users that use is pursuant to experimental license, is strictly temporary, and may be canceled at any time; and

**F). Contact Information**
Inquiries regarding this application should be directed to the following:

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