NARRATIVE STATEMENT
TO SUPPORT
APPLICATION FOR EXPERIMENTAL STA

Pursuant to Section 5.61 of the Commission's Rules, Puget Sound Energy, Inc. ("PSE") hereby requests a Special Temporary Authorization ("STA") in the Experimental Radio Service to support PSE's efforts to design and implement a wide-area private land mobile radio ("PLMR") communications system on frequencies that are allocated under FCC Rule Part 80 for Automated Maritime Telecommunications Systems ("AMTS"). PSE currently holds geographic licenses under FCC Rule Part 80 to use certain AMTS frequencies in its PLMR system but now needs to make certain system modifications that will improve system performance and to develop the data that PSE will need in order to request modification of its existing Part 80 licenses.[1] STA is requested so that PSE can better analyze and promptly correct coverage deficiencies in the current system that have raised safety-related concerns among employees and contractors using the system for communications at a remote wind farm operated by PSE.

PSE is Washington State's oldest and largest energy utility, serving approximately 1 million electric customers and nearly 750,000 natural gas customers in a 6,000 square mile service territory in the Puget Sound area of western Washington. PSE is currently implementing a wide-area PLMR system for communications to support its electric operations using frequencies it has licensed under FCC Rule Parts 80 and 90.

A. Purpose of Operation and Need for STA

PSE respectfully requests STA for a period of up to six months so that PSE can conduct field tests intended to determine whether coverage can be improved in a discrete portion of PSE's operating area and if so, to compile the data that PSE will need for the engineering studies that must accompany its applications for modification of license.

One of the first phases in the build-out of PSE's new PLMR system was intended to provide mobile communications service to PSE's employees and contractors at the Hopkins Ridge Wind Facility and the Lower Snake River Wind Project, both of which are located in southeast Washington state. The Hopkins Ridge facility covers 11,000 acres of land in Columbia County, and comprises 87 wind turbines capable of generating 156 MW of electricity. The Lower Snake River project, just completed in 2012, comprises 149 wind turbines generating 343 MW of power.

[1] Call Signs WQMZ553 and WQMZ554.

Although PSE has exclusive use of the AMTS frequencies in the area of these wind farms, PSE was required by Section 80.215(h) of the FCC's Rules to conduct engineering studies as to the potential impact of its operations on the reception of television broadcast signals on TV Channels 10 and 13 at households in the vicinity of its PLMR transmit sites. PSE applied for modification of its geographic AMTS licenses in October 2011 proposing the minimum transmit power PSE reasonably thought would be needed to adequately serve the wind farms from four transmitter sites (8 watts ERP or less). PSE also determined that fewer than 100 households were potentially affected by operations at each of the transmit sites, thereby meeting one of the conditions in Section 80.215(h)(3) for authorization and operation of these four PLMR stations.

Just recently, following some emergency preparedness testing at the Lower Snake River project, it was determined that (1) coverage from PSE's stations in this area must be improved to ensure more reliable use of portable (hand-held) radios throughout the wind farm for safety-related and operational reasons, (2) PSE may be able to avoid construction of an additional transmit site to provide coverage to the city of Dayton, WA, where both PSE and its contractor have offices and need to communicate with field personnel; and (3) empirical evidence suggests that the PLMR system in this area is unbalanced.

PSE is hereby requesting Experimental STA so that PSE can promptly determine the optimal set of operating parameters at each transmit site that will ensure reliable PLMR service to the wind farm while minimizing potential impact on reception of broadcast signals. PSE is seeking authority to increase the transmit power at three of the stations (Ridpath, Linville Ridge, and Fields Gulch) and to make other adjustments such as antenna azimuth and type, antenna gain, and the possibility of combining signals from multiple transmitters into one antenna at each tower. Once PSE determines the optimal set of operating parameters for each station, PSE will have its consulting engineers prepare and file the studies that are required by Section 80.215 of the FCC's Rules on the potential impact to broadcast reception and, if more than 100 households are potentially affected, to prepare the more detailed studies required by Section 80.215(h)(3) of the FCC's Rules, in conjunction with applications for modification of the licenses for WQMZ553 and WQMZ554.

It should be noted that in the 18 months since PSE activated these stations it has received no complaints of interference to broadcast reception or to any other radio service from these operations, and PSE does not anticipate that harmful interference will result from any of the system adjustments PSE intends to make. In any event, PSE acknowledges and agrees that operations under the Experimental STA will be on a strictly non-interference basis as required by Section 5.111 of the FCC's Rules, and that if harmful interference to another established radio service develops, PSE will cease transmissions with the modified facilities until PSE is certain that harmful interference will not be caused.

B. Frequencies

STA is requested for the frequency range 217.5 – 217.7 MHz, which is within the broader frequency range of 217.5 – 218.0 MHz authorized to PSE under its geographic AMTS licenses WQMZ553 and WQMZ554.

C. Locations

Site Name	City	Lat (D-M-S)	Long (D-M-S)	Structure Type	Ground Elevation (m AMSL)	Structure Height (m AGL)	Antenna height to tip (m AGL)
Ridpath	LaCrosse, WA	46-36-27.3 N	117-53-40.2 W	Lattice Tower	490.4	45.7	37.7
Linville Ridge	Pomeroy, WA	46-20-56.6 N	117-36-6.5 W	Lattice Tower	1162.2	45.7	37.7
Fields Gulch	Waitsburg, WA	46-24-44.0 N	118-10-9.0 W	Lattice Tower	681.7	45.7	37.7

D. Directional Antennas

PSE intends to investigate the use of directional antennas at each of the locations. PSE anticipates testing directional antennas with the following parameters:

Site Name	Width of Beam at Half-Power Point (deg.)	Orientation in Horizontal Plane (deg.)	Orientation in Vertical Plane (deg.)
Ridpath	200 or 67	0	160
Linville Ridge	200	0	0
Fields Gulch	200 or 67	0	45

E. Transmitter Output Power and Effective Radiated Power (ERP)

PSE is requesting authority to operate with up to 60 watts transmitter output power at each site. However, the actual power selected for each transmitter will be based on a number of variables in the component losses (*e.g.*, for the combiner and transmission line) and in the antenna type and gain. PSE anticipates that these tests will show that it can achieve reliable coverage with output power of between 44 and 56 watts, depending on the type of antenna used at each site. For example, PSE's preliminary calculations indicate that when using a directional antenna with a 200 degree beamwidth the transmitter output power will be about 44 watts and the resulting ERP will be about 22.5 watts. Similarly, PSE estimates that when using an antenna with a 67 degree beamwidth the transmitter output power will be about 56 watts and the resulting ERP will be about 45 watts.

F. Antenna Structures

All of the antennas to be used in these experiments are on structures that have already been reviewed and approved by the Federal Aviation Administration ("FAA") or that do not require notice to or approval from the FAA due to height and/or distance from the nearest public use runway as determined with the FCC's TOWAIR program and the FAA's Notice Criteria Tool.

G. Contact Information

Questions regarding this application should be directed to:

Mr. Jiri Sykora
Sr. Telecom Engineer
Puget Sound Energy, Inc.
9515 Willows Rd. NE
Redmond, WA 98052
Tel: 425-867-7335
Email: jiri.sykora@pse.com

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