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May 14, 1992

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MAIL BRANCH

Ms. Donna R. Searcy
Secretary
Federal Communications Commission
1919 M Street, N.W., Room 222
Washington, D.C. 20554

Dear Ms. Searcy:

RE: ET Docket No. 92-9

Arizona Public Service hereby submits comments regarding the Federal Communication Commission's response to the spectrum reserve NPRM in ET Docket No. 92-9.

Arizona Public Service is a $6.5 billion electric utility serving the state of Arizona. Our power grid interconnects to all the utilities in the state and to utilities in California, Nevada, Utah and New Mexico. We are the operating agent and part owner of the largest western hemisphere nuclear generating station and numerous coal/gas generating stations and serve over 600,000 residential and commercial customers.

An extremely reliable communication system is necessary to protect and control our power grid and generating stations. Arizona Public Service has installed 166 microwave terminals throughout Arizona providing this communication system. Our microwave system also interconnects to other utilities to regulate control and protect the power grid. For example, Arizona Public Service receives a trip signal from Bonneville Power in Washington during certain power system conditions. If this trip signal is not received, a chain of events begins which, numerous times in the past, has caused collapse of the power grid in the western half of the United States and hundreds of thousands of customers were without power for hours. We receive a similar trip signal from Pacific Gas and Electric with similar results. Arizona Public Service depends heavily on its microwave communications and any disruptions or interference could cause serious consequences to the western United States power grid.

Eighty percent of the microwave terminals use 1850-2200 MHz frequency (2 GHz). We have 18 transmitters whose path exceeds 70 miles and two transmitters who path exceeds 118 miles. Two GHz was selected on these paths for its long distance capability and relative immunity to fade from rain when compared to other frequencies. This system is extremely critical to our operations.

We object to moving off the 2 GHz spectrum as defined in the NPRM. We do not believe we will have adequate reliability with alternate media or higher microwave spectrum. Alternate media such as satellite and common carrier are unusable for power system protection because of transmission delay time and poor reliability. Fiber optics has to be installed on the same towers of the power line we would be trying to protect and the loss of a tower would fail the fiber optics at the time it is needed the most. If there is a need for utilities to move off of the reliable 1.85 to 2.20 GHz spectrum, then the 1.71 to 1.85 GHz spectrum should be made available to us when it is released by the government. This would provide reliable spectrum and reduce transition cost to the utilities.

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We also must obtain adequate compensation for moving from the 2 GHz spectrum. We ask that our customers not have to subsidize emerging technologies by having to pay to change our communication media. The NPRM does not provide us adequate leverage to acquire compensation for moving off of the spectrum. The cost to relocate referred to in the FCC Office of Engineering and Technology study is over two billion dollars, and is estimated at more than four billion dollars by the UTC. In addition, I seriously doubt there is enough trained engineers and construction forces available to replace all of the 2 GHz systems in 3-10 years. Our limited human resources at Arizona Public Service would require that we contract most of the spectrum relocate work and I have not seen significant contract talent available to meet an industry demand of this magnitude. I also doubt there is enough manufacturing capability to build all the microwave terminals and antennas needed to accomplish this feat. We have estimated the capital cost to relocate Arizona Public Service from the 2 GHz spectrum at $90 million. Additional operations and maintenance expenses of the systems we would move to are not included in this cost.

We are opposed to the licensing of additions or major modifications to existing 2 GHz systems on a secondary basis and are opposed to automatically becoming a secondary user at the end of 10 or 15 years. Any interference would then be ours to correct rather than who caused the interference or we would have to cease operation. The reliability and availability of a microwave system on a secondary license would not be acceptable to the utility industry. Also, it is doubtful that manufacturers would see much future in making equipment for a secondary market and would discontinue manufacturing the equipment. To continue operating on a secondary license in the rural areas would also be unacceptable because of potential interference from emerging technologies resulting in improper operation of our power system protection.

We are not opposed to the concept of providing spectrum for emerging technologies, but ***we are opposed to relocating incumbent core businesses***, such as utilities to new spectrum for the benefit of a speculative new business (PCN) that does not even provide for the basic needs of the general public. However, should the Federal Communications Commission decide that relocation is necessary, then existing users should not be forced to relocate from the 1850-2200 MHz band until the following has been satisfied:

1) There is adequate replacement spectrum made available in close proximity to the 1850-2200 MHz band. (If adjacent spectrum is available, why not put PCN on it?)

2) Adequate time is allowed to construct replacement facilities.

3) Existing systems not be shut down and frequencies released to PCN until the new systems are in place and working reliably.

4) The cost for any relocation to new microwave spectrum or new fiber optic technology, at equal or better reliability, be paid for by the PCN licensee and not by our customers or shareholders. Any compensation for relocation of existing users should be arrived at through negotiations between the existing users and the PCN licensee, with compensation in advance of engineering and construction.

5) Utilities continue as a primary user of the frequencies until there is demand for the frequency and a negotiated agreement between the utility and the PCN completed; that is, no 10-15 year limit to primary user status for utilities.

Yours truly,

Don O. Tellis, Manager
Communication Systems

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