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**VIA HAND DELIVERY**

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Ms. Magalie R. Salas  
Secretary  
Federal Communications Commission  
Portals II, Filing Counter, TW-A325  
445 12th Street, S.W.  
Washington, D.C. 20554

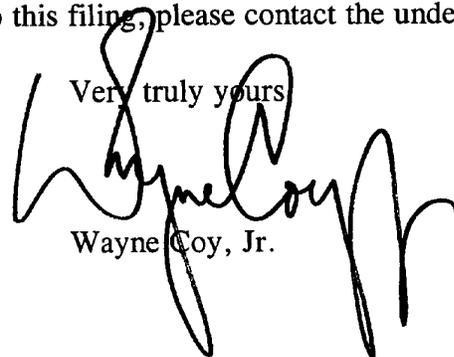
**Re: Comments and Opposition  
Petition for Rule Making  
RM-9664**

Dear Ms. Salas

Transmitted herewith, on behalf of Oklahoma Educational Television Authority, an agency of The State of Oklahoma, and licensee of noncommercial educational broadcast station KETA-TV, Channel 13, Oklahoma City, Oklahoma, are the original and five (5) copies of its Comments and Opposition in the above-referenced proceeding.

Should you have any questions with respect to this filing, please contact the undersigned.

Very truly yours



Wayne Coy, Jr.

Enclosure

DS1/54094-1

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BEFORE THE  
**Federal Communications Commission**

In the Matter of )  
Request for the Amendment )  
of the Commission's Rules concerning )  
Automated Maritime Telecommunications )  
Systems Stations )  
Section 80 of the Rules )

RM-9664

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FEDERAL COMMUNICATIONS COMMISSION  
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To: The Commission

**COMMENTS AND OPPOSITION**

Oklahoma Educational Television Authority, and agency of The State of Oklahoma, and the licensee of noncommercial educational broadcast station KETA-TV, Channel 13, Oklahoma City, Oklahoma, by and through its attorney files these Comments in Opposition to the Petition for Rule Making filed by RegioNet Wireless License, LLC, a subsidiary of Orion Telecom ("RegioNet"), requesting reduction in the regulatory burdens placed on applicants for Automated Maritime Telecommunications ("AMST") stations.

For the reasons set forth in the attached Engineering Statement prepared by the Consulting Engineering firm of Cohen, Dippell, and Everist, P.C., Oklahoma Educational Television Authority vigorously opposes the Rule Making. As the licensee of a Channel 13 station, OETA feels that the potential for harmful interference from any changes in these Rules would have a deleterious effect on the operation of any Broadcast station, either NCST or analog, on Channel 13. The Hull test referred to in the Petition utilized 53 test receivers, 42 of which received their

signal via a cable system, and only 11 over the air. That's just the beginning. The rest of the "test" is infected with inappropriate conclusions drawn from the basic test design.

OETA urges that the Petition be rejected and the Proposed Rule Making be dismissed.

Respectfully submitted



Wayne Coy, Jr.  
Counsel for Oklahoma Educational  
Television Authority

July 16, 1999

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FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY

ENGINEERING STATEMENT  
ON BEHALF OF  
OKLAHOMA EDUCATIONAL TELEVISION AUTHORITY  
CONCERNING REGIONET'S  
PETITION FOR RULE MAKING

JULY 1999

COHEN, DIPPELL AND EVERIST, P.C.  
CONSULTING ENGINEERS  
RADIO AND TELEVISION  
WASHINGTON, D.C.

COHEN, DIPPELL AND EVERIST, P. C.

City of Washington )  
 ) ss  
District of Columbia )

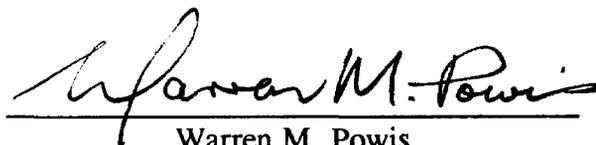
Warren M. Powis, being duly sworn upon his oath, deposes and states that:

He is a graduate electrical engineer of the University of Canterbury, New Zealand, a Registered Professional Engineer in the District of Columbia, the State of Virginia, the State of South Carolina, and Vice President of Cohen, Dippell and Everist, P.C., Consulting Engineers, Radio - Television, with offices at 1300 L Street, N.W., Suite 1100, Washington, D.C. 20005; previously employed for 15 years with the New Zealand Broadcasting Corporation; a member of the Institution of Professional Engineers New Zealand (IPENZ), the Association of Federal Communications Consulting Engineers (AFCCE), and the National Society of Professional Engineers (NSPE).

That his qualifications are a matter of record in the Federal Communications Commission;

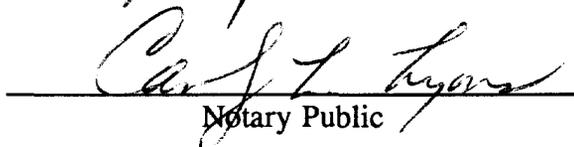
That the attached engineering report was prepared by him or under his supervision and direction and,

That the facts stated herein are true of his own knowledge, except such facts as are stated to be on information and belief, and as to such facts he believes them to be true.



Warren M. Powis  
District of Columbia  
Professional Engineer  
Registration No. 8339

Subscribed and sworn to before me this 15<sup>th</sup> day of July, 1999.



Notary Public

My Commission Expires: 2/28/2003

This engineering statement has been prepared on behalf of Oklahoma Educational Television Authority in support of its comment on a Petition for Rule Making ("Petition") filed by RegioNet Wireless License, LLC, a subsidiary of Orion Telecom ("RegioNet") which requested that the Commission reduce the regulatory burdens placed on applicants for Automated Maritime Telecommunications System ("AMTS") stations.

AMTS stations which operate on 217 to 218 MHz (base stations) and 219-220 MHz (mobile stations) have the potential to interfere with the off-air reception of television receivers tuned to 210-216 MHz TV Channel 13 (adjacent-channel interference) and to 192-198 MHz TV Channel 10 (half I.F. beat effects). The methods of evaluating the potential for interference were developed by R. Eckert of the FCC's Office of Science and Technology in OST Technical Memorandum FCC/OST TM82-5, July 1982.

Table I of TM82-5 specified the interference protection ratios to TV Channels 13 and 10 for the poorest observed TV receive performance among its samples of five different receiver types. Table I, therefore, provided a reasonable basis for protecting all TV receivers.

#### RegioNet 1999 Tests

RegioNet attached Exhibit I to its Petition which detailed recent interference tests to TV Channel 13 reception from a single 1 KHz-FM-modulated AMTS signal, conducted by Professor A. E. Hull of California State Polytechnic University, Department of Electrical and Computer Engineering. The Hull report indicated that observations were made on 53 television receivers tuned to Channel 13 with the single AMTS signal operated in 0.5 MHz steps between 216-220 MHz to determine the AMTS signal level that would produce "just perceptible interference".

By Hull's definition, University staff considered "just perceptible" interference to occur when the visual signal of Channel 13 appeared minimally degraded from a normal viewing distance of 10-12 feet. The screen sizes of the TV receivers under test varied from 9 inches to 51 inches.

Hull's tests on 53 receivers were performed while receiving the Channel 13 programming of KCOP, Los Angeles, California. Only 11 of those 53 receivers were tested with an off-air signal. The remaining 42 receivers tested received the KCOP programming via cable television systems.

Hull's test setup imported the Channel 13 signal (cable TV-or-antenna) attenuated and combined with single AMTS interferer via a matching pad to an A-B switch. The A-B switch fed either the Sadelco signal meter or the television receiver under test. It is noted that the Sadelco meter was configured to measure the average voltage in a 4 MHz band of Channel 13 (210-216 MHz).

Hull noted on Page 6 that the cable TV power received in some homes in the Placentia, Fullerton, Arcadia, and Irvine areas ranged from -68 to -78 dBm.

#### Comments on RegioNet's Report

1. The Commission in TM82-5 chose to use the poorest observed TV receiver performance out of 5 receiver types as a basis for proper protection of Channel 10 and Channel 13 reception against AMTS interference.

RegioNet use of "average" 1999 data is, therefore, inappropriate.

RegioNet's own measurement data demonstrates that its poorest receiver is actually 2 dB to 4 dB worse than the poorest receiver type documented by the FCC in its 1975 tests at the AMTS frequencies 217.0 and 217.5 MHz. RegioNet claim of a 25 to 38 dB improvement in performance is, therefore, invalid.

2. RegioNet's recent measurements were taken with a single interferer. Actual AMTS operations consist of multiple carriers which extend from 217.0 to 217.5 and 217.5 to 218.0 MHz. The impact of cross modulation effects from multiple carriers on TV reception has not been addressed.

3. RegioNet utilized a "normal" viewing distance of 10 to 12 feet for a wide range of screen sizes of 9 to 51 inches for its determination of minimal degradation. Since the acuity of the normal eye is 1/60 of a degree, it will be unable to resolve the full picture content of small television screens at this distance.

For the NTSC 4:3 screen ratio, the optimum viewing distances for various screen diameters are as follows:

<u>TV Screen Diameter</u> inches	<u>Optimum Viewing Distance</u> feet
9	3.2
13	4.7
19	6.8
27	9.7
31	11.0
51	18.0

Accordingly, RegioNet's conclusions based on its test methodology are highly suspect. The human eye can resolve less than 50% of the vertical and 50% of the horizontal resolution (25% of the viewing area) of the 9, 11, and 13 inch receivers; over one-third of the receivers documented by RegioNet. Further, only 9 of 47 receivers documented (27 inch diameter or greater) are properly viewable at 10 feet viewing distance.

4. Since the FCC has mandated the transition to digital television (DTV), tests on NTSC reception and DTV reception using the new generation of digital television receivers should also be undertaken. Appropriate cooperative tests could be undertaken at a site such as the Advanced Television Test Center ("ATTC") in Alexandria, Virginia, using expert viewers. Potential interference, color beat, and other effects can be researched and tested using ATTC's existing test-bed setup conducted at optimum viewing distances for existing NTSC and DTV receivers.

5. RegioNet claims that the Eckert report is 18 dB conservative on the difference between the polarization of TV and AMTS antennas. Depolarization of signal sources in urban and heavily treed areas results in reduced ability to reject unwanted interfering signals. Furthermore, TV Channel 13 stations can operate with circular polarization resulting in no cross-polarization advantages.
6. AMTS transmitter sites should be located away from urban areas. RegioNet's example of Orion's AMTS Santiago Peak, California, site is a good example; rurally located and well removed from any significant population.
7. AMTS transmitter sites can also be collocated with TV Channel 13 stations including low power television ("LPTV") stations. If LPTV stations utilize directional antennas, an associated directional AMTS station should be workable at an appropriate AMTS power level with a workable ratio to the LPTV power level.
8. There are no means for TV viewers to identify or recognize the source of AMTS interference to Channel 13 reception. Viewers simply "live with it" or tune to another channel. A suggested revision of the household notification procedure for AMTS stations is as follows.

0 to 5 miles	All Households
5 to 7 miles	50% of all households
7 to 10 miles	25% of all households