Exhibit 01: Particulars on the Modification Application.

We need to change our frequencies for the following reasons. The initial frequencies we requested resulted in some interference, and we wish to voluntarily comply with a band plan proposed by the American Radio Relay League in the frequency band that both government and amateur services share. Additionally, we see the need for fewer frequencies and believe that the reorganization of radio frequencies will allow us to fulfill our objective with the minimum interference to others.

We need to change the allowed power for our point to point links. Our equipment needs a -70dBm to -80 dBm signal level at the receiver, and we need to increase the maximum effective radiated power to 24W (3W transmitter into a 9dB antenna) for our equipment to work.

Everything else in our original application is unchanged. Without these changes, we will not be able to meet our research objectives.

Exhibit 02: Frequency Assignments [Item 4A]

A comprehensive search on radio activity in western Virginia and West Virginia was made in 1993, and we have continued to monitor the activity in the 216-220 government band. I propose to modify the tentative frequencies from 1993 to comply with band plans that have been developed since 1993 and to minimize any interference problems we have had between our transmitters.

State	County	City	Location	Current Frequency	Proposed Frequency
VA	Montgomery	Blacksburg	Derring Hall	219.500 MHz	219.850 MHz
VA	Giles	none	Butt Mountain	218.800 MHz	216.300 MHz
VA	Giles	none	Butt Mountain	217.800 MHz	216.500 MHz
VA	Giles	none	Butt Mountain	218.100 MHz	216.900 MHz
VA	Giles	none	Butt Mountain	218.400 MHz	217.300 MHz
VA	Giles	Prospectdale	Junction of Hwy 100 and Rt 665	216.300 MHz	219.550 MHz
VA	Bland	none	Walker Mountain	217.300 MHz	217.700 MHz
VA	Craig	none	Pous Mountain	216.450 MHz	None
WV	Mercer	Princeton	2.4 Mile Greasy Ridge Rd	216.600 MHz	218.950 MHz
WV	Summers	Forest Hill	Junction of Hwy 12 and Seminole Rd	216.900 MHz	219.250 MHz

Exhibit 03: Proposed Location of Transmitters [Items 5b, 5c, 6a, 6b and 6c]

Transmitters with vertical polarization (V) have:

a. Width of beam in degrees at the half power point: 60°
b. Orientation in horizontal plane: 90°
c. Orientation in vertical plane: 0°

Transmitters with a horizontal polarization (H) have:

a. Width of beam in degrees at the hold power point: 60°
b. Orientation in horizontal plane: 0°
c. Orientation in vertical plane: 90°

State	County	City	Location	Lat °(N)	Long °(W)	Polarization
VA	Montgomery	Blacksburg	Derring Hall	37 22'30"	80 25'30"	H
VA	Giles	none	Butt Mountain	37 22'30"	80 37'30"	V
VA	Giles	none	Butt Mountain	37 22'30"	80 37'30"	V
VA	Giles	none	Butt Mountain	37 22'30"	80 37'30"	V
VA	Giles	none	Butt Mountain	37 22'30"	80 37'30"	V
VA	Giles	Prospectdale	Junction of Hwy 100 and Rt 665	37 17'30'	80 40'30"	H
VA	Bland	none	Walker Mountain	37 06'31"	80 58'14"	H
VA	Craig	none	Potts Mountain	37 27'57"	80 23'30"	None
WV	Mercer	Princeton	2.4 Mile Greasy Ridge Rd	37 20'06"	81 02'55"	H
WV	Summers	Forest Hill	Junction of Hwy 12 and Seminole Rd	37 34'00"	80 47'30"	H

Exhibit 04: Narrative Describing the Research Project [Items 9a, 9b and 9c]

9a. The nature of this research project is to continue monitoring the Giles County Seismic Zone. The recording of ground motion in this area provides the basis for research in earthquake activity and hazard assessment in the eastern United States as well as research regarding man-made activity such as mine blasts.

9b. At this time, data for the seismic network is relayed using telephone telemetry which has become too expensive. The Virginia Tech Seismological Observatory (VTSO) is near the end of a grant to upgrade the seismic network and to bring data into a central recording point in a cost effective manner. VTSO plans on continuing to test the data links for the next year when we will be applying for a more permanent frequency authorization.

9c. The telephone circuits that we currently use are prohibitively expensive. If we were constrained to continue using phone line telemetry, we would not be able to monitor the Giles County Seismic Zone.