

*Exhibit 1*

*1 of 2*

**United States of America  
FEDERAL COMMUNICATIONS COMMISSION  
EXPERIMENTAL  
RADIO STATION CONSTRUCTION PERMIT  
AND LICENSE**

*202-418-2432*

EXPERIMENTAL  
(Nature of Service)

KA2XIK  
(Call Sign)

XR FX  
(Class of Station)

6105-EX-ML-1998  
(File Number)

NAME VIRGINIA TECH SEISMOLOGICAL OBSERVATORY

Subject to the provisions of the Communications Act of 1934, subsequent acts, and treaties, and all regulations heretofore or hereafter made by this Commission, and further subject to the conditions and requirements set forth in this license, the licensee hereof is hereby authorized to use and operate the radio transmitting facilities hereinafter described for radio communications in accordance with the program of experimentation described by the licensee in its application for license.

Operation: In accordance with Sec. 5.202(c) of the Commission's Rules

Station Locations

- (1) Butt Mountain, VA - NL 37-22-30; WL 80-37-30
- (2) Butt Mountain, VA - NL 37-22-30; WL 80-37-30
- (3) Butt Mountain, VA - NL 37-22-30; WL 80-37-30
- (4) Butt Mountain, VA - NL 37-22-30; WL 80-37-30
- (5) Walker Mountain, VA - NL 37-06-31; WL 80-58-14
- (6) Princeton, VA - NL 37-20-06; WL 81-02-55
- (7) Forest Hill, VA - NL 37-34-00; WL 80-47-30
- (8) Prospectdale, VA - NL 37-17-30; WL 80-40-30
- (9) Blacksburg, VA - NL 37-22-30; WL 80-25-30

Frequency Information

Butt Mountain, VA - NL 37-22-30; WL 80-37-30

| Frequency | Station Class | Emission Designator | Authorized Power watts | Tolerance (+/-) |
|-----------|---------------|---------------------|------------------------|-----------------|
| 216.3 MHz | FX            | 5K00F2D             | 24 (ERP)               |                 |

Butt Mountain, VA - NL 37-22-30; WL 80-37-30

| Frequency | Station Class | Emission Designator | Authorized Power watts | Tolerance (+/-) |
|-----------|---------------|---------------------|------------------------|-----------------|
| 216.5 MHz | FX            | 5K00F2D             | 24 (ERP)               |                 |

Butt Mountain, VA - NL 37-22-30; WL 80-37-30

| Frequency | Station Class | Emission Designator | Authorized Power watts | Tolerance (+/-) |
|-----------|---------------|---------------------|------------------------|-----------------|
| 216.9 MHz | FX            | 5K00F2D             | 24 (ERP)               |                 |

This authorization effective MAY 20, 1998 and will expire 3:00 A.M. EST NOV 01, 1999

**FEDERAL COMMUNICATIONS COMMISSION**



*Exhibit 1 cont 2/7/2*

Frequency Information

Butt Mountain, VA - NL 37-22-30; WL 80-37-30

| Frequency | Station Class | Emission Designator | Authorized Power watts | Tolerance (+/-) |
|-----------|---------------|---------------------|------------------------|-----------------|
| 217.3 MHz | FX            | 5K00F2D             | 24 (ERP)               |                 |

Walker Mountain, VA - NL 37-06-31; WL 80-58-14

| Frequency | Station Class | Emission Designator | Authorized Power watts | Tolerance (+/-) |
|-----------|---------------|---------------------|------------------------|-----------------|
| 217.7 MHz | FX            | 5K00F2D             | 24 (ERP)               |                 |

Princeton, VA - NL 37-20-06; WL 81-02-55

| Frequency  | Station Class | Emission Designator | Authorized Power watts | Tolerance (+/-) |
|------------|---------------|---------------------|------------------------|-----------------|
| 218.95 MHz | FX            | 5K00F2D             | 24 (ERP)               |                 |

Forest Hill, VA - NL 37-34-00; WL 80-47-30

| Frequency  | Station Class | Emission Designator | Authorized Power watts | Tolerance (+/-) |
|------------|---------------|---------------------|------------------------|-----------------|
| 219.25 MHz | FX            | 5K00F2D             | 24 (ERP)               |                 |

Prospectdale, VA - NL 37-17-30; WL 80-40-30

| Frequency  | Station Class | Emission Designator | Authorized Power watts | Tolerance (+/-) |
|------------|---------------|---------------------|------------------------|-----------------|
| 219.55 MHz | FX            | 5K00F2D             | 24 (ERP)               |                 |

Blacksburg, VA - NL 37-22-30; WL 80-25-30

| Frequency  | Station Class | Emission Designator | Authorized Power watts | Tolerance (+/-) |
|------------|---------------|---------------------|------------------------|-----------------|
| 219.85 MHz | FX            | 5K00F2D             | 24 (ERP)               |                 |

Special Conditions:

- (1) The station identification requirements of Section 5.152 of the Commission's Rules are waived.

## Exhibit 2

The authorization is to be used for fulfilling U.S. Geological Survey Contract Number 99HQAG0172, to operate a seismic monitoring network. The Contracting Officer is Francine Harris, (703)648-7386. U.S. Geological Survey, Mail Stop 205K, Reston, Va, 20192.

### Exhibit 3

The research involves operation of remote digitizers that record ground motion. The radio equipment is absolutely necessary in order to telemeter the digital ground motion data from the remote recording sites to the central recording facility in Blacksburg. There exists no other option for accomplishing this telemetry. The purpose of this application is simply to renew the FCC experimental licence.