

EXHIBIT #17

R.F. EMISSION COMPLIANCE STATEMENT

Vermont Public Radio
BNPFT20030317HKH
Channel 258 - 0.25 kW H & V
Montpelier, Vermont
March 2013

The proposed 1-bay, circularly polarized antenna will be energized such that it produces 0.25 kW of effective radiated power from a center of radiation 13 meters above ground level. The antenna will be located on a pole mounted to the gable end, and extending approximately 1.5 meters above the roof ridge-line of a building on the campus of Vermont College of Fine Arts. Predictions were calculated using the formulas expressed in the **OET Bulletin, No. 65, August 1997, "Evaluating Compliance with F.C.C. Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields"**, published by the Federal Communication Commission's Office of Science and Engineering, and then by applying a combination of the element and array pattern as defined in **E.P.A. study PB85-245868 ("Engineering Assessment of the Potential Impact of the Federal Radiation Protection Guidance on the AM, FM and TV Broadcast Services)**. According to OET #65, Section 2: Prediction Methods, RF power density (S) is calculated by the equation: $S = \text{EIRP} / 4\pi R^2$, where EIRP = equivalent isotropically radiated power (or ERP x 1.64) and R = antenna height above head (AG 2 meters). This methodology was implemented by using the FCC's program FMModel (EPA) program which considers the type of antenna and the published vertical field elevation patterns. The predicted level of RF non-ionization emissions at a position of 2 meters above ground (head-height) at the base of the building for the proposed 1-bay Shively 6812 (Type #6) antenna is 29.04 microwatts per square centimeter, at a location 11.4 meters from the base of the building, or 14.5 percent of the permissible maximum for an uncontrolled area.

For the purpose of this study, we will also account for one other RF source located on the same pole mount as the proposed transmitter. W231BQ is an FM translator which was originally licensed for a location 35 meters away, for operation at 0.250Kw ERP at 22 meters above ground, and for which Vermont Public Radio has filed a CP for a minor change to move to that same location.

The current proposed facility will ultimately have both translators collocated at the location specified in this application, and therefore we will also consider that configuration for the current environmental study as a 'worst case' scenario. *[At W231BQ's licensed ERP and location 33 meters away, the predicted RFR anywhere on the ground at 2 meters AGL (head level) was shown to be 8.9 microwatts per centimeter squared, or less than 5% of the standard for uncontrolled areas, and would not otherwise be considered in this current study]*

There is a second circumstance to be calculated – the emitter is proposed to be mounted on a pole which extends above the steep pitched roof of the building which has a ridge line 12 meters above the ground. Located on the mounting pole at the gable end, and extending at least 1.5 meters above the roof line, the minimum center of radiation of the emitter would be at least 7.6 meters above the floor of a locked, restricted access attic space below the roof. There is no storage or other normal activity in the attic and, it is only used for access to mechanical equipment related to the building HVAC system, and the transmitter is to be located on a wooden platform on the floor of the attic near the antenna mount.

The calculated RFR in the attic space would be a worst case maximum of 113.5 microwatts per centimeter squared, 11.35% of the maximum controlled access, Occupational Access RFR standard, and 56.75% of the uncontrolled public access standard at a location 5.8 meters horizontally from the base of the mounting pole on the attic floor.

For the publicly accessible offices and classrooms, located 2.7 meters below the floor of the attic (10.3 meters from the antenna COR), the RFR level from the proposed facility is calculated to be a maximum of 51.7 microwatts per centimeter squared at a point 8.57 meters from the gable end wall, or 25.85% of the Public Access standard for uncontrolled areas.

The next closest publicly accessible offices and classrooms (first floor below the second floor classrooms and offices) are at ground level, and would have the same RFR level, as calculated above, of 29.04 microwatts per centimeter squared at a point 11.36 meters from the gable end wall at the base of the building, or 14.52% of the standard for uncontrolled public access.

For this present case, we would also like to plan ahead for the very likely circumstance of W231BQ being moved across the street to the same location as the presently proposed facility. We would thus calculate that for a worst case AGL of 13 meters, a single bay 6812 (type #6) antenna, with an ERP of 0.250kW, the RFR from that facility would also be 29.04 microwatts per square centimeter, or 10.5% of the maximum standard for uncontrolled areas at a location 13.5 meters from the base of the building on the ground at head height (2 m AGL).

Thus the worst case total for the 2 combined emitters, at ground level, is calculated to be 58.08 microwatts per square centimeter or 29.04 percent of the maximum permitted for an uncontrolled area, at head height (2 m AGL).

As noted above, the attic is a Controlled Area and access to the space is restricted by a locked door.

Using the previous methodology to calculate RFR levels in a worst case scenario of both emitters at a COR of 7.6 meters above the attic floor, it is calculated that the RFR emission maximum for both emitters combined, in the controlled attic area at head height (2 m AGL) would be 227.02 microwatts per centimeter squared, at a location 5.76 meters away from the gable end or 22.7 % of the permitted levels for controlled access Occupational Area Standards.

For areas in the attic 8.5 meters away from the base of the pole, or within 4 meters of the base of the pole, well within the area where the transmitter(s) are expected to be located, the maximum RFR levels are 200 microwatts per centimeter squared or below, just at or below the maximum public access standard for uncontrolled areas.

Other than the proposed transmission equipment which would be in an area below the public exposure maximum, there is no other equipment which would require access by maintenance staff, and management of personal exposure would be relatively straight-forward, including reducing power or turning off the transmitters if work was being performed in the areas which exceeded 200 microwatts per centimeter squared.

For the publicly accessible areas in the upper level classrooms and offices below the attic, which are 10.3 meters from the emitters, it is calculated that each emitter will have worst case RFR emission levels of 51.67 microwatts per centimeter squared. For both emitters, the total combined maximum RFR level would be 103.34 microwatts per centimeter squared, at a point 8.57 meters from the gable end of the building, or 51.67% of the permitted maximum level permitted for continuous RFR exposure in uncontrolled areas.

For the last case to be considered, there is a building across the street from the proposed emitters which has unoccupied and occupied areas which exceed the AGL height of the FM emitters, and for which there is a section with publicly accessible areas which are approximately level with the proposed emitters. This building is located across the street, at a distance of 35 meters from the proposed antenna location.

For this location (i.e. in the 'main beam' of the emitters) it is not possible to use FMModel, but rather we must turn to the formulas provided in OET 65 for this type of calculation.

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Using OET calculation (formula 9) for RFR 'in the main beam' of the emitters of:

$$S = \frac{33.4 \times \text{ERP (H+V)}}{D^2}$$

and where:

S = microwatts per centimeters squared

ERP is expressed in Watts and

D = Distance in meters

Using this formula, we find that for a combined ERP (H+V) of 500 Watts per emitter, at a distance of 35 meters in a straight line from the emitters (to the building across the street), the worst case total power density (S) for the main beam is equal to 13.63 microwatts per centimeter squared, or 6.8% of the maximum permitted RFR Public Exposure levels for uncontrolled areas, from each emitter.

For the case of both emitters combined at the proposed site, we calculate a combined total of 27.26 microwatts per centimeter squared, or 13.63% of the maximum for uncontrolled public areas.

From the previous RFR exhibit for nearby W231BQ (for its location at the top of that building) there were two other emitters considered (public safety and STL) which together contributed less than 0.15% of the maximum uncontrolled public standard, and are thus not considered for this proposal.

Thus, even if W231BQ were to remain at its licensed location (where it was calculated to contribute to RFR levels of 72% of the maximum level for uncontrolled areas at the level of the offices adjacent to the proposed facility across the street) the addition of a single new emitter at the proposed location across the street would still only raise the RFR levels at that building location to a total of 80% of the maximum permitted for uncontrolled areas.

The applicant will protect workers who must climb above floor level in the restricted attic space of the main building nearest to the FM antennas to work on ancillary equipment either by reducing power or terminating transmission as required to ensure worker safety.

Consequently, it appears that the proposed FM station will be in full compliance with the Commission's human exposure to radiofrequency electromagnetic field rules and regulations; and at some point in the future, if the second station were to be co-located at this proposed site, the combined emission levels would continue to meet the required RFR Public Exposure Limits for Uncontrolled areas.