8.7 Conclusion

Predicted EMI levels for the proposed 500-kV transmission line are comparable to, or lower, than those that already exist near 500-kV lines; no impacts of corona-generated interference on radio, television, or other reception are anticipated. Furthermore, if interference should occur, there are various methods for correcting it: BPA has a program to respond to legitimate complaints.

9.0 Other Corona Effects

Corona is visible as a bluish glow or as bluish plumes. On the proposed 500-kV line with 3-conductor bundles, corona levels would be very low, so that corona on the conductors would be observable only under the darkest conditions and only with the aid of binoculars, if at all. Without a period of adaptation for the eyes and without intentional looking for the corona, it would probably not be noticeable.

When corona is present, the air surrounding the conductors is ionized and many chemical reactions take place, producing small amounts of ozone and other oxidants. Ozone is approximately 90% of the oxidants, while the remaining 10% is composed principally of nitrogen oxides. The national primary ambient air quality standard for photochemical oxidants, of which ozone is the principal component, is a one-hour average not to exceed 235 micrograms/cubic meter or 120 parts per billion. The maximum incremental ozone levels at ground level produced by corona activity on the proposed transmission line during foul weather would be much less than 1 part per billion. This level is insignificant when compared with natural levels and fluctuations in natural levels.

10.0 Summary

Electric and magnetic fields from the proposed transmission line have been characterized using well-known techniques accepted within the scientific and engineering community. The expected electric-field levels from the proposed line at minimum design clearance would be comparable to those from existing 500-kV lines in Washington, and elsewhere. The expected magnetic-field levels from the proposed line would be comparable to, or less than, those from other 500-kV lines in Washington, and elsewhere.

The peak electric field expected under the proposed line would be less than 9.0 kV/m; the maximum value at the edge of the right-of-way would be about 2.5 kV/m. Clearances at road crossings would be increased to reduce the peak electric-field value to 4.4 kV/m or less. Along the multi-line Grand Coulee – Bell corridor, electric fields at the edges of the right-of-way would remain very comparable with existing levels and would range from 0.1 to 1.4 kV/m.

Under maximum current conditions, the maximum magnetic fields under the proposed line would be 333 mG; at the edge of the right-of-way of the proposed line the maximum magnetic field would be 83 mG. However, along the multi-line Grand Coulee – Bell corridor, the magnetic field at the edges of the right-of-way would be comparable with, or less than, existing levels and would range from 3 to 41 mG.

The electric fields from the proposed line would meet regulatory limits for public exposure in most other states that have limits, but could exceed the regulatory limits or guidelines for peak fields established in one other state and by ICNIRP. The magnetic fields from the proposed line would be within the regulatory limits of the two states that have established them and within guidelines for public exposure