

well as cultural resources that may exist in portions of the project area identified by the tribes through consultation.

In the event that undiscovered archaeological sites are inadvertently disturbed during construction, construction work would be halted at the site until an archaeologist or cultural resource specialist can assess the site and appropriate mitigation measures be completed.

4.10.6 BPA No Action Alternative

Under the BPA No Action Alternative, no historic or cultural resources would be affected.

4.10.7 Cumulative Impacts

Cultural resources in the project area have been and are being affected because of past and current development activities. Potential adverse effects on cultural resources include disturbance of cultural sites, increased likelihood of vandalism, reduction of the cultural integrity of certain sites, and increased encroachment on cultural sites. Future development could impact cultural resources if developments are not designed to avoid the resources. Cultural resource surveys and coordination with affected Tribes, as required under the National Historic Preservation Act and other environmental laws, would identify the locations of these resources so they could be avoided to the extent possible. While impacts to cultural resources from the identified cumulative projects could result in a net cumulative loss of cultural resource values in the region, implementation of mitigation programs would help reduce cumulative impacts to the extent possible.

Development of the proposed projects would contribute incrementally to these cumulative effects on cultural resources in the analysis area. No known archaeological or historic resources would be directly affected by any of the proposed projects. Visual impacts to historic resources, particularly the Oregon Trail, could occur. Cumulative impacts as they relate to visual resources are described in Section 4.8.8.

4.11 Noise, Public Health and Safety

4.11.1 Noise Levels

4.11.1.1 Construction Noise

Construction of the BPA action alternatives and the wind projects would cause localized, short-duration noise. Such temporarily increased noise levels would result from normal construction activities. Noise levels from construction activities can be expected to range from ambient to 100 dBA at a distance of 50 feet from the activities. OAR 340-035-0035(5)(g) specifically exempts construction activity from regulation. Impacts would be temporary.

4.11.1.2 Transmission Line

Corona-generated audible noise levels were calculated for average conductor heights for fair and foul weather conditions. The predicted levels of audible noise for the proposed transmission line operated at a voltage of 237-kV are given in Table 4-7 and plotted in Figure 3. (See Appendix C for more detail.)

The calculated median level (L₅₀) during foul weather at the edge of the ROW, of the proposed 230-kV transmission line ROW (62.5 feet from centerline) is 42 dBA, the calculated maximum level (L₅) during foul weather at the edge of the ROW is 45 dBA. During fair weather conditions, which occur about 94 percent of the time in the Wasco area, audible noise levels at the edge of the ROW would be about 20 dBA if corona were present. These lower levels could be masked by ambient noise on and off the ROW.

The calculated foul-weather corona noise levels for the proposed transmission line would be comparable to, or less than, those from the existing 230-kV lines in Oregon. During fair weather, noise from conductors might be perceivable on the edge of the ROW; however, beyond the ROW, it would very likely be masked or so low as to not be perceived. During foul weather, when ambient noise is higher, it is also likely that corona-generated noise off the ROW would be masked to some extent as well.

Figure 3 Predicted Foul-weather Audible Noise Levels for the 230-kV Transmission Line.

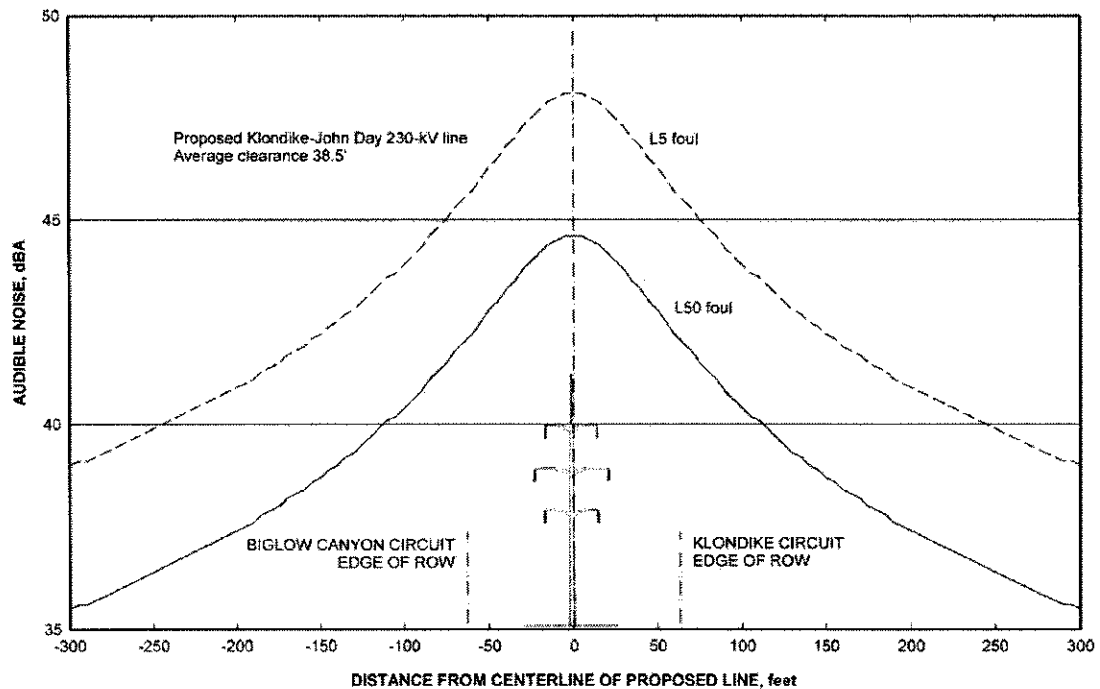


Table 4-7 Predicted Audible Noise Levels at Edge of 230-kV Line ROW

Edge of 230-kV Line Right-of-Way Audible Noise		
Descriptor	L₅₀, dBA	L₅, dBA
Foul weather	42	<u>45</u>
Fair weather	17	<u>20</u>

Note: AN levels expressed in decibels on the A-weighted scale (dBA). L₅₀ and L₅ denote the levels exceeded 50 and 5 percent of the time, respectively.

On and off the ROW, the levels of audible noise from the proposed transmission line during foul weather would be well below the 55-dBA level that could interfere with speech outdoors. The distance to the nearest residence to the proposed line is about 0.25 miles. At this distance, the AN from the line would be about 30 dBA during foul weather, and probable not be perceived above background noise. During such periods, ambient noise levels could be increased due to wind and rain hitting foliage or buildings.

The computed annual L_{dn} level for transmission lines operating in areas with about 6 percent foul weather is about L_{dn} = L₅₀ – 3 dBA (Bracken, 1987); therefore, assuming such conditions in the area of the proposed 230-kV line, the estimated L_{dn} at the edge of the ROW would be about 39 dBA, which is well below the EPA L_{dn} guideline of 55 dBA.

Along the proposed transmission line routes there could be increases in the perceived noise above ambient levels during foul weather at the edges of the proposed 230-kV ROW. The corona-generated noise during foul weather would be masked to some extent by naturally occurring sounds such as wind and rain on foliage. During fair weather, the noise levels off the ROW from the proposed transmission line would probably not be detectable above ambient levels. The noise levels from the proposed transmission line would be below levels identified as causing interference with speech or sleep. The audible noise from the transmission line would be below EPA guidelines levels and would meet the BPA design criteria that comply with state noise regulations. Similarly the new substation would be designed and constructed to meet all federal, state and local regulations.

4.11.1.3 Substation

The proposed transformers and other equipment installed at the new John Day 230-kV Substation would be specified so that BPA noise level criterion of 50 dBA for new

substations would be met at the edge of the property (USDOE, 2006). This will ensure that all applicable federal, state and local regulations are met.

However, the new equipment would be placed in an environment with noise from existing transmission lines, and existing equipment in the John Day 500-kV Substation. The combined noise level from the existing and new facilities could exceed 50 dBA design levels at points on the perimeter of the expanded substation; however, the levels would be controlled to meet all applicable regulations at the edge of the property.

4.11.1.4 Wind Projects

The project vicinity is rural and existing noise levels are low with infrequent noise from agricultural activities. DEQ regulations at OAR 340-035-0035 establish noise standards at sensitive receptors. At the proposed project sites, residences are the only noise sensitive properties identified. New noise sources on sites that have not previously been used for commercial or industrial purposes have a limit on the allowable increase over existing ambient noise levels. Generally, sources on new sites may not increase the noise levels by more than 10 dBA.

Both the Klondike III Wind Project and the Biglow Canyon Wind Farm may increase the noise levels by more than 10 dBA. Oregon law allows owners of sensitive receptors to execute a noise easement with the industrial facility to legally exceed this standard, provided some benefit accrues to the property owner. Both wind projects have obtained noise easements from owners of property that might experience noise over the 10 dBA standard.

4.11.2 Electric and Magnetic Field Effects

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 transmission line at minimum design clearance would be comparable to those from existing 230-kV lines in Oregon, and elsewhere. The expected magnetic-field levels from the proposed transmission line would be comparable to those from other 230-kV lines in Oregon and elsewhere. See Appendix D for more information about research regarding effects of EMF.

4.11.2.1 Transmission Line Calculated Values for Electric Fields

The peak electric field expected under the proposed transmission line would be 2.5 kV/m; the maximum value at the edge of the ROW would be about 0.3 kV/m. Clearances at road crossings would be increased to reduce the peak electric field to 0.5 kV/m or less. The electric field from the proposed line would meet regulatory limits for public exposure in Oregon and all other states that have limits and would meet the regulatory limits or guidelines for peak fields established by national and international guidelines setting organizations.