

3.3.12 Noise

The discussion of noise is broken into four sections. First, the affected environment is discussed in Section 3.3.12.1. Second, the environmental effects are addressed in Section 3.3.12.2. Third, cumulative effects are listed in Section 3.3.12.3. Finally, proposed environmental conditions are addressed in Section 3.3.12.4.

Existing, relevant and reasonably available information is sufficient to determine the potential effects of the projects on noise. FERC's Study Determination, as amended, did not require YCWA to perform any studies related to noise.

3.3.12.1 Affected Environment

This section describes the existing regulatory context related to noise.

3.3.12.1.1 Regulatory Context

Noise is defined as unwanted sound. It is emitted from many sources including airplanes, factories, railroads, power generation plants and highway vehicles. The magnitude of noise is described by its sound pressure. Because the range of sound pressure varies greatly, a logarithmic scale is used to relate sound pressures to a common reference level, the decibel. Sound pressures described in decibels are called sound pressure levels.

Sound levels, measured using an "A-weighted decibel scale", are expressed as decibels (dBA). This scale is frequency adjusted to represent the way the human ear responds to sounds. Throughout this analysis, all noise levels are expressed in dBA. The degree of disturbance or annoyance of unwanted sound depends essentially on three things:

- The amount and nature of the intruding noise
- The relationship between the background noise and the intruding noise
- The type of activity occurring where the noise is heard

In considering the first of these factors, it is important to note that individuals have different sensitivity to noise. Loud noises bother some people more than others. In addition, people react differently to various patterns of noise, often depending on whether such noise is viewed as uncomfortable or offensive.

With regard to the second factor, individuals tend to judge the annoyance of an unwanted noise in terms of its relationship to noise from other sources (i.e., background noise). The blowing of a car horn at night when background noise levels are approximately 45 dBA generally would be more objectionable than the blowing of a car horn in the afternoon when background noises might be 55 dBA.

The third factor is related to the interference of noise with activities of individuals. In a 60-dBA environment, normal work activities requiring high levels of concentration may be interrupted by

loud noises, while activities requiring manual effort may not be interrupted to the same degree. Time-averaged descriptors are utilized to provide a better assessment of time-varying sound levels. The three most common noise descriptors used in community noise surveys are the equivalent sound level (Leq), percentile distributions of sound levels (L%), and the day-night average sound level (Ldn). The Leq is an energy-averaged sound level that includes both steady background sounds and transient short-term sounds. The Leq is equivalent in energy to the fluctuating sound level over the measurement period. The Leq is commonly used to describe traffic noise levels, which tend to be characterized by fluctuating sound levels.

The L% indicates the sound level exceeded for a percentage of the measurement period. For example, the L₉₀ is the sound level exceeded for 90 percent of the measurement period and is commonly used to represent background sound levels. The L₁₀ is the sound level exceeded for 10 percent of the measurement period and represents the peak sound levels present in the environment.

The Ldn is another descriptor used to evaluate community noise levels. The Ldn is a 24-hour average sound level, which includes a 10 dBA penalty added to nighttime sound levels (i.e., 10:00 PM to 7:00 AM) because people tend to be more sensitive to noise during the nighttime. The Ldn sound level is commonly used to describe aircraft and train noise levels.

For the State of California, noise intensity is also discussed in terms of Community Noise Equivalent Level, which presents a weighted average noise level that increases the relative significance of evening and nighttime noise. The Community Noise Equivalent Level descriptor is used to evaluate community noise levels, which includes a 5 and 10 dBA penalty added to evening (i.e., 7:00 PM to 10:00 PM) and nighttime sound levels, respectively, in consideration of people’s increased sensitivity to noise during the evening and nighttime periods.

County noise standards are generally established based on land use and zoning designations. This is done to ensure that acceptable noise levels are consistent with community development goals and policies. As such, there can be variability between various counties’ noise standards, as is the case with Sierra, Yuba and Nevada counties, the counties in which the Project is located, due to their individual development patterns. Table 3.3.12-1 summarizes the Sierra, Yuba and Nevada counties’ noise standards.

Table 3.3.12-1. Sierra, Yuba and Nevada counties’ noise standards.

On-site Sound Level Descriptor	Day (7 AM - 7 PM)	Evening (7 PM - 10 PM)	Night (10 PM - 7 AM)	Day (7 AM - 10 PM)	Night (10 PM - 7 AM)
SIERRA COUNTY¹					
Hourly Leq (dBA)	--	--	--	50	50
Maximum	--	--	--	60	60
YUBA COUNTY²					
Hourly Leq (dBA)	--	--	--	55	50
Maximum	--	--	--	65	60
NEVADA COUNTY³					
Hourly Leq (dBA)	55	50	40	--	--
Maximum	75	65	55	--	--

¹ Sierra County General Plan 2012 (Sierra County 1996)

² Yuba County Ordinance Code (Yuba County 2010b)

³ Nevada County General Plan, Chapter 9 (Nevada County 1996)

3.3.12.2 Environmental Effects

YCWA's Project would have a less than significant effect on noise. The vast majority of the Project is located in remote areas. Generally, noise from the Project powerhouses, which are the only main sources of ongoing Project noise, occur at very low levels and are mostly underground in relatively remote areas; no residences or commercial properties are near the powerhouses. The proposed Project includes the addition of the New Bullards Bar Dam New Low-level Outlet and various recreation facilities. These are very minor, short-term construction projects, and YCWA will consult with local agencies to obtain all necessary permits and approvals prior to initiating construction.

3.3.12.3 Proposed Environmental Conditions

3.3.12.3.1 Conditions Recommended by YCWA

The proposed Project would have a less than significant affect on noise resources; therefore, YCWA does not propose any conditions.

3.3.12.3.2 Proposed Measures Recommended by Agencies or Other Relicensing Participants That Were Not Adopted by YCWA

None of the comments that were filed on YCWA's DLA included proposed measures or additional studies regarding noise.

3.3.12.4 Unavoidable Adverse Effects

Construction of YCWA's proposed New Bullards Bar Dam new Flood Control Outlet, New Colgate Powerhouse TDS, and recreation facilities will result in short-term increases in noise levels. However, the impacts given the remote location of the facilities, brief period of work and type of activity will be minor. In addition, when working on NFS land, YCWA will adhere to all applicable Limited Operating Procedures (LOPs). YCWA's proposed Project would not create any other short-term or any long-term adverse impacts related to noise.

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