transmission line differ by action alternative, as do the sites for interconnection with the electric utility grid.

2.3 Alternative 1—No Action Alternative

Under the No Action Alternative, none of the features proposed in the action alternatives would be constructed. Existing dam releases would continue under current conditions without energy generation and the purposes of the proposed project would remain unmet. Finally, any anticipated environmental impacts of the action alternatives would not occur.

2.4 Project Features Common to All Action Alternatives

2.4.1 Powerhouse

The design of the powerhouse facility is the same under all action alternatives (Alternatives 2, 3, and 4). The powerhouse and penstock would be located a sufficient distance away from the toe of the dam so that the stability of the dam is not affected by the excavation for the powerhouse or the penstock.

The proposed powerhouse would be a reinforced concrete structure located partially within the rock berm at the toe of the dam, west of the existing outlet works. The penstock would be constructed from the 72-inch-diameter connection in the outlet conduit and then routed to the proposed powerhouse where it would bifurcate into two 66-inch-diameter pipes feeding the turbines. Penstock diameter would be 72 or 84 inches, depending upon final hydraulic analysis and equipment bids.

The floor of the powerhouse would be set at an elevation above the high tail-water elevation. This elevation would allow maintenance to be performed on the turbines without the need to de-water the tailrace. The turbines, generators, and all mechanical equipment would be located at this level. The turbines would discharge into a tailrace channel below the turbine floor. The final elevation of the turbines and tailrace channel would be determined when the turbines are selected.

The plan dimensions of the turbine floor are determined by the equipment size and the space required to maintain, disassemble, remove, or replace the equipment, and for other maintenance activities. The major equipment located on the turbine floor would include two turbine/generator units; turbine controllers; turbine inlet valves located on the penstock to each turbine; a hydraulic power unit for each unit and valve; and sump pumps.

The proposed powerhouse arrangement would include a control room area. A control room is required to house the control panels, switchgear, motor control center, panel boards, batteries, and battery chargers. The control room would be isolated from the turbine floor and sound-proofed to provide a quiet space for the operator. It would be located above the turbine floor to protect the equipment from potential flooding, and it would be located near the plant substation to minimize conduit and cable runs.

Powerhouse and area lighting will be provided for security, safety, and maintenance purposes. Offsite lighting will be minimized through use of cut-off luminaires. The District will take into account directional lighting, wherever possible.