

Bonneville Power Administration
Grand Coulee-Bell 500-kV Transmission Line Project
Record of Decision

Decision

The Bonneville Power Administration (BPA) has decided to construct the proposed Grand Coulee-Bell 500-kV Transmission Line Project in Douglas, Grant, Lincoln, and Spokane Counties, Washington. BPA has decided to implement the proposed action identified in the Grand Coulee-Bell 500-kV Transmission Line Project Final Environmental Impact Statement (DOE/EIS-0344, December 2002). The proposed action consists of constructing a new 500-kilovolt (kV) transmission line between the Bureau of Reclamation's (BOR) Grand Coulee 500-kV Switchyard near Grand Coulee, Washington, and BPA's Bell Substation near Spokane, a distance of 84 miles. The proposed action involves removing an existing 115-kV transmission line and replacing it with a 500-kV line on existing right-of-way for most of its length. The line will be constructed using a single-circuit design, with the exception of 2 short distances of slightly less than one mile where double-circuit towers will be used because the right-of-way is constrained. As part of the proposed action, BPA has decided to expand the existing fenced yard at Bell Substation by about 11.7 acres; slightly expand the fenced area at Grand Coulee Switchyard to accommodate new line termination facilities and other equipment; install one group of series capacitors on an expanded site at BPA's Dworshak 500-kV Substation in Clearwater County, Idaho; and replace existing series capacitors within the current boundary of BPA's Garrison 500-kV Substation in Powell County, Montana.

Background

Construction of the Grand Coulee-Bell transmission line is needed to ensure that BPA can continue to meet its statutory and contractual obligations to deliver power to where it is needed.

BPA has a statutory obligation to ensure that there is sufficient capacity in its transmission system to serve its customers, and to ensure that the system is safe and reliable. Among many other requirements, the Federal Columbia River Transmission Act directs BPA to construct additional transmission lines that are necessary to integrate and transmit electric power from Federal and non-federal generating sources [16 U.S.C. §838b(a)]; and to construct additional transmission lines necessary for maintaining the electrical stability and reliability of the transmission system [§ 838b(d)]. Reliability standards are developed by the industry to minimize risks to public safety and to equipment. In addition, the Act directs BPA to construct transmission system additions required to provide interregional transmission facilities [§838b(c)].

As part of its transmission system, BPA owns and operates several transmission lines in eastern Washington that transmit electricity from generation sources in Montana such as Libby and Hungry Horse dams to load centers to the west (e.g., Seattle, Washington and Portland, Oregon). The system also transmits power from generation sources in northern Idaho and northeastern Washington. The portion of the system west of Spokane, Washington, that transfers power from

east to west, called the “West of Hatwai” transmission path, has a total capacity of 2,800 megawatts (MW). Of this capacity 2200 MW is allocated to BPA and 600 MW to Avista, an electric utility with facilities in eastern Washington and northern Idaho. The full capacity of this path historically has been used to transport firm power from east to west. BPA has the ability to use Avista’s share of 600 MW only if it is available, and the additional 600 MW would not be firm transmission because BPA would not be able to guarantee that the capacity would be always available.

Since the mid-1990s, the West of Hatwai transmission path has grown increasingly constrained. To date, BPA has been able to manage operation of the path through all available operating practices, including short-term remedial actions. As a result, generation was not severely curtailed and customer needs have been met while maintaining the reliability of the path. However, in early 2001, the problem was made worse when two of BPA’s large DSI customers located east of the transmission path closed their facilities. These customers were aluminum smelters with a combined load of approximately 800 MW that was served by generation sources in Montana. The closure of these smelters meant that this 800 MW now flows west across the West of Hatwai transmission path instead of serving the two DSIs. The need to transmit this additional energy adds to the congestion on the path. Under these conditions, the system is at risk of overloads and violation of industry safety and reliability standards.

Recently, the Columbia Falls aluminum smelter has resumed operation. However, the long-term prospects for operation are uncertain. The Spokane smelter remains closed.

Although the capacity and reliability problems of this path exist year round, the problem is particularly acute in the spring and summer months because of the large amount of power generated by dams east of the path. During these months, spring runoff increases water flows, and reservoirs behind the dams reach high levels. While some of this water is spilled to aid migrating fish in their downstream journey, large amounts of water cannot be spilled due to potential adverse effects on those fish. This means that more water must flow through turbines at the dams, which generates more power. The amount of power that needs to move through this area during these months at times could exceed the carrying capacity of the existing transmission lines. The resulting congestion can be likened to that caused by all the interstate traffic from a six-lane freeway being funneled for 84 miles onto a narrow, two-lane state route.

Operations in summer 2001 showed that using all available operating practices to mitigate the capacity limitations of the West of Hatwai transmission path is insufficient as a long-term solution to ensure the flow of power while maintaining system reliability. The problems that occurred in 2001 showed that the risk for future generation curtailments is already too high, and that the problem must be solved on a long-term basis as soon as possible. Because of the time required for completing the environmental review and for design and construction of potential facilities, 2004 likely is the earliest possible date that a long-term solution could be implemented.

If additional capacity is not added, BPA will run a significant risk that it will not be able to continue to meet its contractual obligations to deliver power and still maintain reliability standards that minimize risks to public safety and to equipment. Action thus is needed to allow BPA to continue to fulfill its contractual obligations, as well as to comply with BPA’s

Congressional mandates to provide necessary interregional transmission facilities and adequate transmission capacity, and to maintain electrical system stability and reliability. Cost of the project will be about \$152 million.

Rationale for Decision

BPA has analyzed the environmental impacts of the proposed action, the alternative action, and the no-action alternative, and has considered public comments received on the Draft EIS. In making its decision, BPA considered how well the various alternatives would meet the following project purposes (i.e., objectives) identified for this project in the Final EIS:

- Maintain transmission system reliability to industry standards;
- Comply with BPA's statutory obligations;
- Continue to meet BPA's contractual obligations;
- Minimize environmental impacts;
- Minimize costs; and
- Allow BPA to solve its transmission capacity problem by no later than fall 2004.

BPA believes that the implementation of the proposed action would best meet these objectives.

The proposed action, as compared to the no action alternative, provides needed capacity on the system to move power from generation sources in Montana to load centers to the west, accommodate the increased energy flow because of changes in aluminum smelter operations, and move power during peak generation periods in the spring and summer, even if one transmission line is out of service, thus meeting industry reliability standards.

The proposed action allows BPA to meet its statutory obligations under the Federal Columbia River Transmission Act to construct additional transmission lines necessary for transmitting electric power to serve its customers, and maintaining electrical stability and reliability. The no action alternative does not meet this objective.

The proposed action, in comparison to the no action alternative, provides adequate transmission capacity to enable BPA to continue to meet its contractual obligations to deliver power for its customers by alleviating the existing corridor congestion and avoiding potential curtailment of generation.

The proposed action allows BPA to minimize environmental impacts. By replacing an existing line in an already developed corridor, the proposed action minimizes environmental impacts compared to the clearing and disturbance required to construct a new line and access roads in an undisturbed area. BPA worked to lessen potential environmental impacts through the design of the project and the development of mitigation measures. Cultural resources that were discovered along the line will be avoided, protected, or further evaluated as necessary. Wetlands that occur along the line will be avoided through location of structures, new roads, and staging areas outside of wetlands and wetland buffer areas. Activities affecting wetlands that cannot be avoided will be permitted through the U.S. Army Corps of Engineers. Fish impacts will be minimal by using vegetative buffers and sediment barriers to prevent sediment from moving into

water bodies. Wildlife impacts will be lessened by marking the ground wire at the span crossing the Spokane River, so that birds will be less likely to fly into the wire, and limiting the removal of trees to only those that could interfere with transmission lines. Vegetation and habitat impacts will be mitigated through reseeded disturbed areas, maximizing the use of existing roads, and implementing measures to lessen the spread or introduction of noxious plants during and following construction. Public health and safety impacts will be minimized by providing notice to the public of construction activities, and securing the site to protect equipment and the general public at the end of each workday. After construction, BPA will respond to any complaints, and if necessary, provide assistance to install or repair grounding to mitigate nuisance shocks. Noise impacts during construction will be minimized by limiting construction activities to daytime hours; no noise-generating construction activity within 1,000 feet of a residence will occur between the hours of 10:00 p.m. to 7:00 a.m. There will be additional incremental visual impacts associated with replacing an existing wood pole line with a larger, lattice steel line in an existing corridor that currently holds two 115-kV wood pole lines, and two 230-kV lattice steel lines. BPA has attempted to minimize this impact by placing the towers for the proposed project in line with the adjacent 230-kV towers, and using tower steel and conductors that reduce reflectivity. The proposed action will also minimize the greater visual impacts associated with the alternative action by using shorter, single-circuit towers for all but about 1 mile of the 84 miles of line. BPA will continue to work with landowners in efforts to lessen impacts as much as possible to croplands and farming activities, and limit erosion and the spread of noxious weeds. BPA will work with the City of Grand Coulee to lessen impacts at North Dam Park, and with Riverside State Park officials to minimize disturbance to vegetation within the park. Short-term impacts of construction on socioeconomics, air quality, floodplains, soils and geology, and water quality will be lessened through the use of mitigation measures. A complete list of mitigation measures adopted for the project is attached.

Implementation of the proposed action allows BPA to minimize costs since most of the line will be constructed on existing BPA right-of-way, thus saving the cost of purchasing new right-of-way in a different location. The proposed action would cost about \$152 million. These are reasonable costs for the construction of 84 miles of 500-kV line and associated substation work. Implementation of the proposed action at this time would most likely allow BPA to solve its transmission capacity problem by no later than fall of 2004, because the new line would be expected to be in service in November of 2004.

Alternatives

BPA considered the Proposed Action, an Alternative Action, and the No Action Alternative.

Proposed Action

The Proposed Action involves constructing a 500-kilovolt (kV) transmission line between the Grand Coulee 500-kV Switchyard near Grand Coulee, Washington, and Bell Substation near Spokane, a distance of 84 miles. The proposed action includes removing an existing 115-kV transmission line (Grand Coulee – Bell No. 1 line) and replacing it with a single-circuit 500-kV transmission line over most of the route. A double-circuit transmission line will be constructed for short distances where the corridor is constrained between corridor mile 73/1 (mile 73, structure 1) and corridor mile 73/4, and between corridor mile 83/1 and corridor mile 83/6 just

northwest of Hawthorne Road in the north Spokane area. Combined, the two double-circuit segments amount to slightly less than one mile of transmission line.

The new transmission line will be located primarily in an existing BPA corridor. The existing corridor, over most of its length, has five transmission lines on four sets of structures. To make room for the new transmission line, BPA will remove its Grand Coulee-Bell No. 1 115-kV wood pole transmission line and replace it with the 500-kV line on lattice steel towers.

About five structures per mile will be used to match the spans of the existing 230-kV lattice steel towers in the right-of-way. About 420 towers will be needed. Construction will include the upgrade of about 17 miles of existing access roads, the construction of about 5 miles of new access roads, and the construction of about 4 miles of short spur roads from an existing access road to a new tower.

At Bell Substation, BPA will expand the existing fenced yard by about 11.7 acres on BPA property to make room for new line termination facilities and other equipment. The Grand Coulee Switchyard will also be expanded, but only slightly, because there is insufficient space within the existing yard. To accommodate a new bay with two circuit breakers, a shunt reactor and breaker, and associated equipment, the fence will be extended out approximately 10 feet across the existing service road on the east and south sides.

Outside of the project area, one new group of series capacitors will be installed on an expanded site at BPA's Dworshak 500-kV Substation, and existing series capacitors will be replaced with ones of higher amperage rating within the current boundary of BPA's Garrison 500-kV Substation.

Additional features of the proposed action include line reconfiguration and electrical changes for the remaining 115-kV system at tap points and substations along the corridor. Work will occur at Grand Coulee 115-kV Substation, Wagner Lake Substation, Creston Substation, Larene Substation, Springhill Substation, and Bell 115-kV Substation.

Alternative Action

BPA considered a second construction alternative. It would have included all the components of the Proposed Action except a double-circuit line would have been constructed in the Spokane area between a point about 2 miles west of the Spokane River and Bell Substation, a distance of about 9 miles. The purpose of this alternative was to anticipate and provide for potential unknown future transmission needs without needing to find a new route out of the Bell Substation for another 500-kV line at a later date if the need should arise. Both sides of the towers would be strung with conductors and connected to operate as a single-circuit line; it would have been available for a second circuit at some unknown future date.

This alternative was BPA's initial proposed action during public scoping of the project in January/February of 2002. Comments received from the public and Whitworth College in the areas adjacent to the proposed double-circuit alternative caused BPA to add an alternative of constructing a single-circuit line through this area for evaluation in the Draft EIS.

No Action

The No Action Alternative assumes that no transmission line is built. BPA considers the No Action Alternative to be the environmentally preferred alternative. The No Action Alternative would not cause impacts to the environment (land uses, vegetation, cultural resources, visual, noise, public health/safety, wetlands, wildlife) that the construction and operation of the transmission line will have.

Mitigation

All the mitigation measures described in the Draft EIS and updated in the Final EIS have been adopted. A complete list of these measures is attached. A Mitigation Action Plan will be prepared to be included in the construction specifications to ensure mitigation measures are implemented.

Issued in Portland, Oregon.

/s/ Stephen J. Wright
Stephen J. Wright
Administrator and
Chief Executive Officer

January 10, 2003
Date

Attachment:
Mitigation Measures

**Mitigation Measures Adopted
for the
Grand Coulee-Bell 500-kV Transmission Line Project**

<p>Land Use</p> <ul style="list-style-type: none"> ▪ Provide schedule of construction activities to all landowners along the corridor that could be affected by construction. ▪ Coordinate with the City of Grand Coulee to site towers within North Dam Park. ▪ Place gravel on existing roads within North Dam Park to reduce the spread of noxious weeds. ▪ Pre-treat areas of high weed concentrations in North Dam Park during plant emergence to reduce weed spread. ▪ Use Best Management Practices to limit erosion and the spread of noxious weeds. ▪ Plan and schedule construction activities, when practical, to minimize temporary disturbance, displacement of crops, and interference with farming activities. Restore compacted soil in cropland. ▪ Compensate farmers for crop damage. ▪ Place new towers parallel to existing towers, where practical, to enhance maneuverability of farm equipment. ▪ Revegetate disturbed areas with native species. ▪ Coordinate with Riverside State Park officials to locate access roads to minimize disturbance to vegetation.
<p>Noise</p> <ul style="list-style-type: none"> ▪ Provide sound-control devices no less effective than those provided on original equipment. ▪ Provide muffled exhaust on all construction equipment and vehicles. ▪ Limit construction activities to daytime hours. ▪ No noise-generating construction activity will be conducted within 1,000 feet of a residence between 10:00 p.m. and 7:00 a.m. ▪ Notify landowners directly impacted along the corridor prior to construction activities. ▪ Restore radio or television reception to a quality as good or better than before if interference occurs.
<p>Public Health/Safety</p> <ul style="list-style-type: none"> ▪ Prepare and maintain a safety plan in compliance with Washington state requirements. ▪ Hold crew safety meetings at the start of each workday. ▪ Secure the site to protect equipment and the general public at the end of each workday. ▪ Provide employee training in tower climbing, first aid, rescue techniques, and safety equipment inspection. ▪ Assure contractor complies with State regulations regarding on-site fire equipment. ▪ Fuel all highway-authorized vehicles off-site. ▪ When transporting project components, establish helicopter flight paths that avoid populated areas and schools. ▪ Provide notice to public of construction activities, including blasting. ▪ Take appropriate safety measures for use and storage of explosives in compliance with state and local codes and regulations. Remove all explosives from the work site at the end of the workday.

Public Health/Safety (continued)

- Install implosion fittings used to connect the conductors in such a way as to minimize potential health and safety risks.
- Require operation and maintenance vehicles to carry fire suppression equipment.
- Stay on established access roads during routine operation and maintenance activities.
- Keep vegetation cleared according to BPA standards to avoid contact with transmission lines.
- Submit final tower locations and heights to the Federal Aviation Administration for review and potential marking and lighting requirements.
- Construct and operate the new transmission line to meet or exceed the National Electrical Safety Code.
- After construction, BPA would respond to any complaints and, if necessary, provide assistance to install or repair grounding to mitigate nuisance shocks.

Visual Resources

- Use tower steel that has been treated to reduce reflectivity.
- Use non-specular conductors.
- Use non-luminous insulators (i.e., non-ceramic insulators or porcelain).
- Plant vegetative screens, do selective clearing/tree topping at Riverside State Park and other selected sites.
- Use existing topography and vegetation when ever possible to limit views of lines and structures.
- Locate construction staging areas out of site of potential viewers as much as possible.
- Require contractors to maintain a clean construction site.
- Maintain permanent access roads.
- Consult Colville Tribe on impacts to archaeological site near Grand Coulee.

Air Quality

- Use water trucks to control dust during construction
- Use commercially available low sulfur fuel for on-road diesel vehicles
- Lop and scatter, pile, mulch or chip, or take woody debris and other vegetation off-site.

Cultural Resources

- Avoid archaeological sites where practical including spanning them or positioning towers to separate them from cultural resources.
- Site new access roads to avoid cultural resources.
- Limit road improvements to the existing roadbed near cultural resource sites. Avoid cultural resource sites when dismantling the portion of the 115-kV line in the Grand Coulee area.
- Mitigate impacts for sites that are eligible for NRHP listing and cannot be avoided.
- Halt work if resources are discovered during construction activities and engage cultural resource specialists to evaluate the discoveries.

Socioeconomics

- Compensate landowners at fair market value for any new land rights required for easements for new right-of-way or for access roads.
- Compensate farmers for crop damage. Correct soil compaction or compensate landowners.
- Site towers to maintain efficient crop patterns and minimize adverse impacts to farming activities.

Soils and Geology

- Install runoff and erosion controls.
- Use environmental specialist to decide which mitigation approaches are best suited to reduce erosion and runoff, and to stabilize disturbed areas.
- Deposit excavated material in upland areas and stabilize.
- Promptly seed disturbed sites with an herbaceous seed mixture suited to the site.
- Use vegetative buffers and sediment barriers to prevent sediment from moving off site and into water bodies.
- Provide assistance to farmers and ranchers for subsoiling where agricultural and rangeland soils are compacted.
- Conduct follow-up inspections and maintain erosion and runoff controls and revegetation.

Water Quality

- Avoid construction on steep, unstable slopes if possible.
- Use best management practices to divert flows from exposed soils, store flows, or otherwise limit runoff and erosion on the site.
- Use properly sized culverts.
- Start stabilization measures soon after construction activities have ceased.
- Place devices at all discharge locations and along the length of any outfall channel to slow velocity of water and avoid any significant change in the hydrology of waters downstream.
- Restrict discharges of solid materials into waters of the United States.
- Deposit excavated material not reused in an upland area and stabilize.
- Schedule construction, when practical, during periods when precipitation and runoff possibilities are at a minimum.
- Set back towers near water crossings from stream banks.

Wetlands

- Use standard best management practices to avoid or reduce indirect impacts to wetlands.
- Stockpile soil and replace or loosen compacted soils; revegetate disturbed areas adjacent to wetlands with native species.
- Avoid construction within flagged wetland and wetlands buffers and on steep unstable slopes.
- Locate structures, new roads, and staging areas so as to avoid waters of the U.S., including wetlands.
- Avoid mechanized land clearing within wetlands and riparian areas.
- Regularly inspect and maintain project facilities.
- Avoid refueling and/or mixing hazardous materials near wetlands.
- Use existing road systems.

Wetlands (continued)

- All excavated material not reused would be deposited in an upland area and stabilized.
- Where feasible, top trees instead of removing trees so roots and soil remain intact.

Vegetation

- Maximize use of the existing corridor and roads for construction activities.
- Restrict vegetation clearing to the minimum needed to maintain safety and operational standards.
- Reseed or revegetate disturbed areas following construction.
- Implement measures to lessen the spread or introduction of noxious plants during and following construction.
- Locate staging areas and conductor tensioning sites outside of good quality native habitat areas, where possible.
- Restrict travel to one area where spur roads would traverse lithosols to prevent damage to sensitive plant communities.
- A Biological Assessment, as required under the Endangered Species Act, has been prepared that provides detailed actions to reduce or eliminate impacts on listed species. BPA would implement any reasonable measures recommended by the U.S. Fish and Wildlife Service to reduce or avoid impacts.
- The Spalding's silene population adjacent to the project area will be staked prior to any construction activity within the project area to protect it from unforeseen casual impact. The stakes will include a buffer area and will indicate the presence of a sensitive area. Because the transmission line corridor passes through several miles of high potential habitat for Spalding's silene, periodic surveys will be conducted as necessary in the future to determine the presence or absence of the plants.
- BPA will limit construction activities in the high quality plant communities between corridor miles 32 and 36 to the times of year that cause the least amount of damage, whenever practicable. This would be during winter when the ground is frozen or late fall when the plants are senescent and the ground is dry.
- The potential population of the state sensitive species Nuttall's pussy-toes in Riverside State Park will be verified during a follow-up survey in May or June 2003. If present, protective measures such as protective flagging would be initiated.
- Information on rare plant occurrences will be given to BPA maintenance personnel to be considered during the planning and implementation of future maintenance activities.
- The location of rare plant occurrences will be placed on BPA maps and documents so that maintenance personnel are aware of their location. A written description of restrictions, precautions or special procedures within rare plant habitat will be attached to maps and documents for that area.
- Within the buffer area for rare plant populations, the procedures used to control weeds will be restricted to those that minimize harm to rare plant species, such as hand-pulling weeds. Specific control methods to protect rare plant populations will be included in vegetation management planning for the corridor.

Fish

- Implement WDFW recommendations for culvert replacements.
- Install silt fences and straw bales to separate construction activities from watercourses and drainages.
- Deposit excavated material not reused in an upland area and stabilize. Restrict deposition from environmentally sensitive areas such as streams, riparian areas, wetlands, or floodplains.
- Promptly seed disturbed sites with an herbaceous seed mixture suited to the site.
- Use vegetative buffers and sediment barriers to prevent sediment from moving off site and into water bodies.
- Avoid construction activities near fish-bearing streams during the April-June period of trout egg incubation to the extent possible.

Fish (continued)

- Minimize vegetation cutting within riparian zones to protect stream banks and maintain water temperature.
- Avoid mechanized land clearing within riparian areas.
- Avoid refueling and/or mixing hazardous materials where accidental spills could enter surface or groundwater.

Wildlife

- Mark or remove the ground wire at the span crossing the Spokane River and wetlands.
- Limit the removal of forest habitat to only those trees that could interfere with transmission lines.
- Retain or create snags within the corridor at a density of at least 2 snags per 1 acre of merchantable timber.
- Avoid construction activities within high-use native habitats during the breeding season (March 1 to August 15), when possible.
- Gate and lock access to the corridor, when practical, especially where the corridor crosses habitats heavily used by wildlife.
- Limit vehicular travel to access roads through sensitive habitat such as shrub/steppe.
- The BA has been prepared that provides detailed actions to reduce or eliminate impacts on listed species. BPA would implement any reasonable measures recommended by the U.S. Fish and Wildlife Service to reduce or avoid impacts.

Floodplains

- Use erosion control measures.
- Leave vegetative buffers next to all water bodies where possible.
- Span floodplains wherever possible.
- Place fill used for temporary access road widening on fabric and remove it to an upland site after construction.
- Design the project to locate roads and structures to avoid floodplains or to minimize the potential for creating obstructions to floodwaters.
- Near floodplain areas, deposit all excavated material not reused in an upland area and stabilize it.