

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

GB Energy Park, LLC

Project No. 13642-003

ORDER ISSUING ORIGINAL LICENSE

(Issued December 14, 2016)

INTRODUCTION

1. On October 1, 2015, GB Energy Park, LLC (GB Energy) filed, pursuant to Part 1 of the Federal Power Act (FPA),¹ an application for an original license to construct and operate the Gordon Butte Pumped Storage Project No. 13642 (Gordon Butte Project or project). The project will draw water from Cottonwood Creek² and will be located in Meagher County, Montana, approximately three miles west of the town of Martinsdale. The project will not occupy federal land.
2. As discussed below, this order issues an original license for the Gordon Butte Project. The project's authorized capacity being licensed is 400 megawatts (MW).

BACKGROUND

3. On November 16, 2015, the Commission issued a public notice in the *Federal Register* accepting the application for filing and setting January 15, 2016, as the deadline

¹ 16 U.S.C. §§ 791(a) – 825(r) (2012).

² Cottonwood Creek is a tributary of the South Fork of the Musselshell River, which, after joining the main stem of the Musselshell River, flows northeasterly before emptying into the Missouri River, a navigable waterway of the United States. Tributaries of navigable waterways are Commerce Clause streams within the meaning of section 23(b)(1) of the FPA. Because the project will draw water from a stream over which Congress has jurisdiction under the Commerce Clause, affects interstate commerce through its connection to an interstate power grid, and will be constructed after 1935, it is required to be licensed pursuant to section 23(b)(1) of the FPA. *See* 16 U.S.C. § 817(1) (2012).

for filing motions to intervene and protests.³ No motions to intervene or protests were filed.

4. On February 4, 2016, the Commission issued a public notice that was published in the *Federal Register* indicating the application was ready for environmental analysis, and setting April 4, 2016, as the deadline for filing comments, recommendations, terms and conditions, and prescriptions.⁴ The U.S. Department of the Interior (Interior) filed comments and recommendations. K.G.H Nicholes and Rod Gwaltney filed comments.

5. On September 27, 2016, Commission staff issued an Environmental Assessment (EA) analyzing the impacts of the proposed project and alternatives. GB Energy filed comments on the EA clarifying certain aspects of its proposal.

6. The comments and recommendations have been fully considered in determining whether, and under what conditions, to issue this license.

PROJECT DESCRIPTION AND OPERATION

A. Project Area

7. The Gordon Butte Project will be constructed on private land owned by 71 Ranch LP (71 Ranch). The upper reservoir will be located on Gordon Butte, a prominent landform that rises about 1,025 feet above the Musselshell River valley. The lower reservoir will be located at the northern base of Gordon Butte. From its headwater streams south of Gordon Butte, Cottonwood Creek flows north for approximately 13 miles to its confluence with the South Fork Musselshell River (South Fork), about 5.2 miles downstream of an existing 71 Ranch irrigation diversion. The South Fork then converges with the North Fork Musselshell River (North Fork) near Martinsdale to form the mainstem Musselshell River. Cottonwood Creek, the South Fork, and North Fork are highly regulated and heavily used for irrigation. Lands adjacent to the project are currently used for irrigated hay production and as pasture for livestock. An existing wind farm consisting of six wind turbines, also owned and operated by 71 Ranch, is located on the eastern edge of Gordon Butte, near the proposed upper reservoir.

B. Existing Facilities to be utilized by the Project

8. GB Energy proposes to use 71 Ranch's existing irrigation infrastructure to fill the project reservoirs. 71 Ranch's irrigation system consists of an existing diversion structure on Cottonwood Creek, located approximately 5.2 miles upstream of

³ 80 Fed. Reg. 72,961 (2015).

⁴ 81 Fed. Reg. 7090 (2016).

Cottonwood Creek's confluence with the South Fork, and a 5.5-mile-long, 4-foot-wide, 4-foot-deep earthen irrigation canal. 71 Ranch also operates a Parshall flume⁵ located in the existing irrigation canal to monitor diversion flows. GB Energy also proposes to use 71 Ranch's existing 3.89-mile-long access road from Montana Highway 294 to the top of Gordon Butte to access the upper reservoir.

C. Proposed Project Facilities

9. The project will include the following new facilities: an upper and lower reservoir, three dams, an underground vertical shaft tunnel and penstock tunnel to convey water between the upper and lower reservoir, a powerhouse with generating/pumping facilities, a transmission line, two substations, and an access road to the lower reservoir.

10. The 3,000-foot-long by 1,000-foot-wide upper reservoir⁶ will be impounded by a 90-foot-high, 7,500-foot-long concrete faced rockfill dam constructed on Gordon Butte. The upper reservoir will have a normal maximum pool elevation of 6,027 feet mean sea level, an active storage capacity of 4,070 acre-feet, and a surface area of approximately 63 acres. A reinforced concrete combination intake/outlet structure located in the upper reservoir will connect to the powerhouse through a 738-foot-long underground vertical shaft tunnel and a 3,000-foot-long underground concrete and steel-lined penstock tunnel.⁷ A partially-buried, 338-foot-long, 109-foot-wide, 74-foot-high reinforced concrete and steel powerhouse will be constructed adjacent to the lower reservoir and contain four ternary pump-turbine units⁸ rated at 100 MW each for a total of 400 MW. Each turbine

⁵ A Parshall flume is a fixed hydraulic structure developed to measure surface water flows. The flume contains an hourglass shape throat that creates a bottleneck and accelerates the flow as it enters before decelerating the flow as it exits the narrow throat. Based on the known configuration and dimensions of the flume, an operator can take a single depth reading in the flume inlet upstream of the throat to determine the flow rate through the flume.

⁶ The upper reservoir will include a 250-foot-long emergency overflow spillway with a crest elevation of 6,029 feet mean sea level and a maximum hydraulic capacity of 5,200 cubic feet per second (cfs). The spillway will discharge water exceeding the reservoir's capacity into a concrete stilling basin and riprap lined channel that will tie into existing natural drainage on the western side of Gordon Butte.

⁷ Both the penstock tunnel and the vertical shaft will be constructed in bedrock.

⁸ Ternary units consist of three parts: a motor-generator, a separate turbine, and a pump. GB Energy's ternary unit arrangement will allow for pumping and generation to occur at the same time during project operation.

will discharge into the lower reservoir through 16-foot-wide, 11.54-foot-high closure gates. The 2,300-foot-long by 1,900-foot-wide lower reservoir will be created by a combination of excavation and two 60-foot-high, 500- and 750-foot-long concrete faced rockfill dams. The lower reservoir will have a normal maximum pool elevation of 5,057 feet mean sea level, an active storage capacity of 4,070 acre-feet, and a surface area of approximately 88 acres. GB Energy will construct a new 0.3-mile-long access road from Montana Highway 294 to the lower reservoir.

11. Water to initially fill the reservoirs (4,685 acre-feet) and makeup for evaporative losses (approximately 500 acre-feet per year) will be supplied from Cottonwood Creek via 71-Ranch's existing irrigation system. GB Energy will install a trashrack and 4-foot-wide by 4-foot-high flow control slide gate at the terminus of the irrigation canal. The gate will connect to a 150-foot-long, 4-foot-diameter pipe that will discharge flows to the lower reservoir.

12. Power generated by the project will be transmitted from the powerhouse substation through a new overhead 5.7-mile-long, 230-kilovolt (kV) transmission line to a new 1,200-foot-wide, 1,450-foot-long substation, where power will be stepped up to 500 kV, and interconnected with adjacent existing non-project twin 500-kV transmission lines.

D. Proposed Project Operation

13. GB Energy proposes to operate the project as a closed-loop pumped storage system. Once the project reservoirs are filled, water will only be withdrawn from Cottonwood Creek to make up water lost to evaporation.

14. During project operation, the project will pump water from the lower reservoir to the upper reservoir when energy is in excess or in low demand. When energy is needed, water will be released from the upper reservoir through the power tunnel to the powerhouse. This will occur based on on-peak/off-peak power considerations, the need to augment the production of local renewable wind power generation, or to provide ancillary power services.⁹

15. The 4,000 acre-feet of water to be cycled back and forth between the reservoirs will allow for an estimated 8.5 hours of energy generation at continuous maximum

⁹ Ancillary services help balance the transmission system as electricity is moved from generating sources to ultimate consumers, and are necessary for proper grid operation. Ancillary services include: load following, reactive power-voltage regulation, system protective services, loss-compensation service, system control, load-dispatch services, and energy imbalance services.

discharge. During normal operation, the lower reservoir will maintain a minimum pool volume of 442 acre-feet during pumping while the upper reservoir will maintain a minimum pool volume of 243 acre-feet during generation. Therefore, at least 4,685 acre-feet of water will be needed for GB Energy to generate at maximum capacity under normal operation.

16. The project, as licensed herein, will be capable of generating an average of 1,300,000 megawatt-hours (MWh) annually.

E. Proposed Project Boundary

17. GB Energy's proposed project boundary encloses all of the new project facilities listed above but does not include the diversion structure on Cottonwood Creek, the irrigation canal, the Parshall flume, or the 3.89-mile-long access road from Montana Highway 294 to the upper reservoir site. However, as discussed below, this license requires that these facilities be designated project works and enclosed within the project boundary. The project, as licensed herein, will occupy an estimated 442 acres of non-federal lands owned by 71 Ranch.¹⁰

F. Proposed Environmental Measures

Construction-Related Measures and Plans

18. To control erosion and protect water quality from storm water runoff during and after project construction, GB Energy proposes to file a Construction Erosion and Sediment Control Plan that includes site-specific best management practices with the Commission prior to commencing construction.¹¹

19. To control windborne dust generated during construction, GB Energy proposes to file a Construction Dust Control Plan,¹² based on the final design of the project that

¹⁰ This total includes the 380 acres of private land included within GB Energy's proposed project boundary and the additional 62 acres of private land occupied by the diversion structure, irrigation canal, Parshall flume, and upper reservoir access road that are required by this license to be enclosed within the project boundary. Commission staff estimated the additional acreages and assumed a 15-foot buffer to either side of the canal centerline and access road centerline.

¹¹ GB Energy filed a Preliminary Construction Erosion and Sediment Control Plan in its January 19, 2016 Response to FERC Acceptance Letter and Request for Further Information, at Appendix D-1.

¹² *Id.* at Appendix E-7.

includes site-specific dust control best management practices, prior to commencing construction.¹³

20. To protect aquatic resources from any fuel or other hazardous substance spills during and after project construction, GB Energy proposes to develop, and file for Commission approval, a hazardous materials containment and fuel storage plan and develop a spill prevention, control, and containment plan.

21. To protect the town of Martinsdale's water supply¹⁴ during and after construction, GB Energy proposes to implement its Box Car Spring Monitoring Program Plan¹⁵ that includes monitoring flow rate, pressure, and water quality from Box Car Spring and consulting with the Meagher County Commission to identify appropriate mitigation measures, if warranted.

22. To control and prevent the spread of noxious weeds during and after construction, GB Energy proposes to file, for Commission review and approval, a Noxious Weed Control Plan,¹⁶ based on the final design of the project, to include site-specific measures, prior to commencing construction.

23. To minimize project effects on vegetation and wildlife habitat, GB Energy proposes to develop, and file for Commission approval, a vegetation management plan that defines best management practices to minimize disturbance to existing vegetation and wetlands and to revegetate disturbed areas.

¹³ GB Energy filed a Preliminary Construction Dust Control Plan in its January 19, 2016, filing, at Appendix D-2.

¹⁴ Gordon Butte receives more precipitation than the surrounding lower elevation plains, resulting in recharge to groundwater beneath the butte. A portion of this recharge eventually supplies the groundwater that emerges at springs that are utilized as public water supply sources for the town of Martinsdale. The closest of the three springs serving the town is Box Car Spring, which is located at least one mile to the northeast of the proposed powerhouse and tunnel sites. *See* EA at 38-42, 68-69.

¹⁵ Filed as GB Energy January 19, 2016 Response to FERC's Acceptance Letter and Request for Additional Information at Appendix E-5.

¹⁶ *See* GB Energy filed a preliminary Noxious Weed Control Plan in its February 29, 2016 Response to FERC's Acceptance Letter and Request for Additional Information at Appendix 1.

24. To protect nesting migratory birds, GB Energy proposes to avoid grassland vegetation removal from April 15 through July 15 during construction. GB Energy also proposes to minimize construction effects on bald eagles and other raptors by: (1) maintaining a 0.5-mile buffer between transmission-line construction activities and any active bald eagle nest during the February 1 to August 15 nesting period; and (2) conduct a pre-construction survey of the transmission-line corridor to determine if eagle or other raptor nests are active and whether the juveniles have fledged, and if the surveys indicate that nests are active, then delay construction or implement additional protection measures.
25. To protect six cultural resource sites during construction, GB Energy proposes to install fences around the sites.
26. To protect any previously-unidentified cultural resources that may be encountered, GB Energy proposes to have an archaeologist onsite to monitor construction activities and implement procedures to protect any cultural resources that are discovered during construction.
27. To minimize visual impacts during construction, GB Energy proposes to avoid disturbing Gordon Butte's outermost ridgeline, utilize existing roads and disturbed areas to the extent possible, locate construction staging areas and crane pads outside of publicly accessible vantage points and visually sensitive areas, restore disturbed surfaces as closely as possible to their original contour, revegetate disturbed areas so they blend into the natural terrain, and use colors and materials to blend project facilities with the surrounding landscape.
28. To minimize noise during construction, GB Energy proposes to file, for Commission review and approval, a Construction Noise Mitigation Plan¹⁷ that includes specific measures for limiting noise during construction, prior to commencing construction.
29. To minimize construction effects on local infrastructure and services, GB Energy proposes to develop, and file for Commission approval, a construction workforce management plan that includes provisions for: (1) developing a traffic management plan for Montana Highway 294; (2) providing bus service for project personnel; (3) staggering work shifts to ensure all of the crew buses and personnel vehicles are off of the roads prior to morning and afternoon school bus traffic; (4) restricting delivery times to limit truck traffic during school bus traffic times; (5) implementing alcohol and drug testing for project personnel; and (6) providing on-site security.

¹⁷ See GB Energy January 19, 2016 Response to FERC's Acceptance Letter and Request for Additional Information at Appendix E-2.

Project Design and Operation-Related Measures and Plans

30. To identify changes in reservoir water quality over the license term, GB Energy proposes to monitor water quality in Cottonwood Creek prior to construction to establish baseline conditions, and in the project reservoirs twice per year during project operation.
31. To protect aquatic and riparian habitat in Cottonwood Creek and maintain existing surface water uses downstream of the diversion, GB Energy proposes to restrict its flow diversions from Cottonwood Creek to 50 cfs or less, only withdraw water for initial fill and evaporation refills between April 15 and June 30 when flows are naturally high, and maintain a minimum flow of 16 cfs at the existing stream staff gage¹⁸ in Cottonwood Creek when filling the reservoirs.
32. To maintain and document compliance with proposed reservoir fill diversion flow restrictions and instream flow requirements, GB Energy proposes to monitor diversion flows during initial fill and annual re-fill using the existing Parshall flume,¹⁹ manually check the stream staff gage in Cottonwood Creek once per day when filling the reservoirs, adjust the headgate to increase flow in Cottonwood Creek or cease diversions if minimum flow levels at the staff gage cannot be met, and maintain daily flow records and report the flow records to the Montana Department of Natural Resources and Conservation (Montana DNRC) by July 30 each year.²⁰
33. To maintain existing surface water uses in the South Fork and mainstem Musselshell River, GB Energy proposes to monitor flows during initial fill and annual re-fill of the project reservoirs and coordinate with water management entities administering diversions downstream of Cottonwood Creek.²¹

¹⁸ The existing staff gage is located approximately 4 miles downstream of the proposed diversions site where Cottonwood Creek passes under the Montana Highway 294 bridge.

¹⁹ All flows diverted at the diversion structure by either 71 Ranch for agricultural purposes or GB Energy for hydroelectric project purposes will pass through the existing Parshall flume.

²⁰ Records will include flow data for both the Parshall flume and Cottonwood Creek compliance gage.

²¹ GB Energy proposes to coordinate with the District Court Musselshell River Distribution Project, Upper Musselshell Water User Association, and Deadman's Basin Water User Association prior to and during project diversions for reservoir filling.

34. To protect bald eagles and other birds from electrocution and collision hazards and disturbance during transmission line maintenance, GB Energy proposes to: (1) design the transmission line to minimize the potential for avian electrocution, (2) install fixed daytime visual markers on the transmission line a half mile east and west of where the line crosses Cottonwood Creek and replace the visual markers twice per year, as necessary; (3) monitor the nesting success of any bald eagles nesting near the transmission line where it crosses Cottonwood Creek for two breeding seasons after completing construction of the transmission line, and report the monitoring results to the U.S. Fish and Wildlife Service (FWS); and (4) maintain a 0.5-mile buffer between any raptor nest and transmission line operation and maintenance activities.

35. To monitor for effects of reservoir operation on birds, GB Energy proposes to monitor waterfowl and other migratory bird use of the project reservoirs during the spring and fall migration periods, document any adverse effects due to project operation, and report the monitoring results to Montana Department of Fish, Wildlife, and Parks (Montana DFWP).

SUMMARY OF LICENSE REQUIREMENTS

36. As summarized below, this license, which authorizes the installation of 400 MW of new energy generation capacity, requires measures to protect aquatic, terrestrial, recreational, aesthetic, socioeconomic, cultural, and air resources affected by the project. The requirements include most of GB Energy's proposed measures summarized above, with some modifications, as well as additional measures to protect aquatic and terrestrial resources and to help facilitate administration of the license.

37. To prevent erosion and protect botanical resources from the spread of noxious weeds, the license requires GB Energy to develop a spoil disposal plan that includes: (1) a map showing the proposed locations of the specific sites for permanent spoil disposal and (2) a description of the measures to be implemented to stabilize and prevent erosion and the spread of noxious weeds at permanent disposal sites.

38. To monitor compliance with reservoir filling restrictions and instream flow requirements of the license, the license requires GB Energy to develop an operation compliance monitoring plan that includes: (1) a description of all gages or recording devices that will be used to monitor compliance with the operational requirements of the license; (2) the method of calibration for each gage and/or recording device; (3) the frequency of recording for each gage and/or recording device; (4) a provision to maintain a log of diversions for reservoir filling; (5) procedures for recording, maintaining, and reporting the monitoring data to the Commission; and (6) a schedule for reporting deviations from the operational requirements of the license to the Commission.

39. To protect botanical resources and prevent the introduction and spread of noxious weeds, the license requires GB Energy to apply the measures in its proposed vegetation

management plan and Noxious Weed Control Plan to the diversion structure, irrigation canal, and upper reservoir access road and to include additional detail in the plans.

40. To protect small mammals and other wildlife from increased predation pressure from perching raptors, the license requires GB energy to install perch deterrents on the crossarms of any project transmission towers that are sited in grassland and agricultural areas.

41. If a previously unidentified cultural resource is discovered during project construction, operation, or maintenance, the license requires GB Energy to stop all land-clearing and land-disturbing activities and consult with the Montana State Historic Preservation Officer.

42. The license requires GB Energy to supplement its Exhibit A project description as well as revise its Exhibit F and G drawings to include the diversion structure on Cottonwood Creek, irrigation canal leading to the lower reservoir site, Parshall flume in the irrigation canal, and upper reservoir access road as project works and enclose these facilities within the project boundary.

WATER QUALITY CERTIFICATION

43. Under section 401(a)(1) of the Clean Water Act (CWA),²² the Commission may not issue a license authorizing the construction or operation of a hydroelectric project unless the state water quality certifying agency either has issued water quality certification for the project or has waived certification by failing to act on a request for certification within a reasonable period of time, not to exceed one year. Section 401(d) of the CWA provides that the water quality certification shall become a condition of any federal license that authorizes construction or operation of the project.²³

44. In a letter dated October 6, 2014, the Montana Department of Environmental Quality (Montana DEQ) states that a section 401 certification is not necessary for the Gordon Butte Project because the project will not result in any discharge into navigable waters.²⁴

²² 33 U.S.C. § 1341(a)(1) (2012).

²³ *Id.* § 1341(d).

²⁴ Exhibit E, Appendix 2, of GB Energy's license application. A water quality certification is only required for a project "which may result in any discharge into navigable waters...." 33 U.S.C. § 1341(a)(1).

SECTION 18 FISHWAY PRESCRIPTION

45. Section 18 of the FPA²⁵ provides that the Commission shall require the construction, maintenance, and operation by a licensee of such fishways as may be prescribed by the Secretary of Interior or the Secretary of Commerce, as appropriate.

46. Interior, by letter filed on April 1, 2016, requested a reservation of authority to prescribe fishways under section 18 of the FPA. Consistent with Commission policy, Article 407 of this license reserves the Commission's authority to require fishways that may be prescribed by Interior for the Gordon Butte Project.

THREATENED AND ENDANGERED SPECIES

47. Section 7(a)(2) of the Endangered Species Act of 1973 (ESA)²⁶ requires federal agencies to ensure that their actions are not likely to jeopardize the continued existence of federally listed threatened and endangered species, or result in the destruction or adverse modification of their designated critical habitat.

48. According to FWS' Information, Planning, and Conservation System, the only federally listed species that potentially occurs in the project area is the threatened Canada lynx. One proposed threatened species, the North American wolverine, may also occur the project area. There are no proposed or designated critical habitats for either species in the project area.

49. In the EA,²⁷ Commission staff determined that licensing the project will have no effect on the threatened Canada lynx and will not jeopardize the continued existence of the proposed threatened North American wolverine because the project area lacks suitable habitat for these species. Therefore, no further action under the ESA is required.

NATIONAL HISTORIC PRESERVATION ACT

50. Under section 106 of the National Historic Preservation Act (NHPA)²⁸ and its implementing regulations,²⁹ federal agencies must take into account the effect of any

²⁵ 16 U.S.C. § 811 (2012).

²⁶ *Id.* § 1536(a).

²⁷ EA at 5, 87-88.

²⁸ 16 U.S.C. § 470 *et seq.* (2012).

²⁹ 36 C.F.R. Part 800 (2016).

proposed undertaking on properties listed or eligible for listing on the National Register of Historic Places (National Register) (defined as historic properties) and afford the Advisory Council on Historic Preservation a reasonable opportunity to comment on the undertaking. This generally requires the Commission to consult with the State Historic Preservation Officer (SHPO) to determine whether and how a proposed action may affect historic properties, and to seek ways to avoid or minimize any adverse effects.

51. GB Energy identified 18 cultural resource sites within the project's Area of Potential Effects, 17 of which GB Energy found while surveying the area. Of these 18 sites, 12 are not eligible for listing on the National Register because they do not meet the requirements to be listed under any criteria. The status of the remaining six sites has not been determined. These six sites include a site with prehistoric stone rings and a historic delivery truck and lamb shed, a rock blind site from the historic period, and four sites containing rock cairns of undetermined age. The Montana SHPO concurred in a letter dated October 2, 2014 that project construction and operation would not affect cultural resources,³⁰ provided GB Energy fences off the six sites during construction and that an archeological monitor be on-site during construction in areas along the project transmission line where cultural resources might be discovered. The Montana SHPO reaffirmed this determination in a letter dated January 16, 2015.³¹ In the EA,³² Commission staff determined that the project would not adversely affect cultural resources if the SHPO's recommended measures are implemented. Accordingly, Article 411 requires GB Energy to construct a fence around the six cultural properties prior to beginning construction and Article 412 requires GB Energy to employ an archeologist to monitor project construction in archeologically sensitive areas along the transmission line route.

52. During construction and over the term of the license, cultural resources could be inadvertently discovered. In the event of such discoveries, Article 413 requires GB Energy to stop all ground disturbing activities at the discovery site, consult with the Montana SHPO, determine what particular measures are needed to resolve any adverse effect on historic properties, and prepare a Historic Properties Management Plan, if needed.

³⁰ Exhibit E, Appendix 13, of GB Energy's license application.

³¹ Exhibit E, Appendix 17, of GB Energy's license application.

³² EA at 6, 96-97.

RECOMMENDATIONS OF FEDERAL AND STATE FISH AND WILDLIFE AGENCIES PURSUANT TO SECTION 10(j) OF THE FPA

53. Section 10(j)(1) of the FPA³³ requires the Commission, when issuing a license, to include conditions based on recommendations submitted by federal and state fish and wildlife agencies pursuant to the Fish and Wildlife Coordination Act,³⁴ to “adequately and equitably protect, mitigate damages to, and enhance fish and wildlife (including related spawning grounds and habitat)” affected by the project.

54. Neither FWS nor Montana DFWP filed section 10(j) recommendations for the Gordon Butte Project.

SECTION 10(a)(1) OF THE FPA

55. Section 10(a)(1) of the FPA³⁵ requires that any project for which the Commission issues a license be best adapted to a comprehensive plan for improving or developing a waterway or waterways for the use or benefit of interstate or foreign commerce; for the improvement and utilization of waterpower development; for the adequate protection, mitigation, and enhancement of fish and wildlife; and for other beneficial public uses, including irrigation, flood control, water supply, recreation, and other purposes. In this section, we discuss measures included in the license that have not previously been discussed.

A. Erosion and Sediment Control

56. Project construction will require land-disturbing activities that could potentially cause localized erosion. Exposed soils will primarily be subject to windborne erosion although some potential exists for erosion during periodic rain events. To minimize the quantity of soil and sediment eroded and dust generated during construction, GB Energy proposes to finalize its Preliminary Construction Erosion and Sediment Control Plan and its Preliminary Construction Dust Control Plan to define site-specific best management practices during final project design.

57. In the EA,³⁶ Commission staff recommended revising the plans based on site-specific conditions to ensure that soil stabilization and dust control measures are

³³ 16 U.S.C. § 803(j)(1) (2012).

³⁴ *Id.* §§ 661 *et seq.*

³⁵ *Id.* § 803(a)(1) (2012).

³⁶ EA at 26-29, 130-132.

appropriately designed. Therefore, Article 302 requires GB Energy to file a site-specific Soil Erosion and Sediment Control Plan and a site-specific Construction Dust Control Plan for Commission approval prior to commencing construction.

B. Spoil Disposal Plan

58. Project construction activities are expected to produce about 14 million cubic yards of spoils, a large portion of which may require permanent long-term disposal sites. GB Energy proposes to select the permanent spoil disposal sites during final project design after consulting with local land owners, state and local government agencies, and other interested parties. In the EA,³⁷ Commission staff recommended the development of a spoil disposal plan to ensure proper disposal of spoils and to prevent erosion and the spread of noxious weeds. Article 401 requires GB Energy develop a spoil disposal plan that includes a map showing the proposed spoil disposal locations and a description of the measures to be implemented to stabilize and prevent erosion and the spread of noxious weeds at the disposal sites.

C. Hazardous Substances Control and Spill Containment

59. Project construction will require the use of an assortment of heavy equipment that will require gasoline or diesel fuel, motor oil, and hydraulic fluid. To prevent pollution from hazardous materials during construction, GB Energy proposes to develop a hazardous materials containment and fuel storage plan and a spill prevention, control, and containment plan with specific procedures for handling and storing hazardous substances and containing and responding to unintentional spills. In the EA,³⁸ Commission staff recommended,³⁹ and Articles 402 and 403 require, GB Energy to develop and implement these proposed plans.

D. Restrictions on Diversion Flows for Reservoir Filling

60. Under existing conditions, Cottonwood Creek is heavily diverted for agricultural purposes (i.e., diversions for irrigation and livestock) from mid-May through September, and there are times when Cottonwood Creek flows are insufficient to meet existing demands and the creek is dewatered, particularly downstream of the 71 Ranch's irrigation diversion during the late summer and early fall months.⁴⁰

³⁷ EA at 29.

³⁸ *Id.* at 54-55.

³⁹ *Id.* at 130.

⁴⁰ In September of 2014, GB Energy measured flow in Cottonwood Creek just
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61. In the EA,⁴¹ staff estimated that initial fill would require 4,685 acre-feet of water from Cottonwood Creek to fill the reservoir and about 500 acre feet each year following the initial fill to make up for evaporation and seepage losses. Project diversions for initial fill and annual make-up water will result in an additional consumptive use of Cottonwood Creek streamflow, which could adversely affect downstream water users and aquatic resources in Cottonwood Creek depending on the timing and rate of withdrawal.

62. To minimize the effects of reservoir filling on existing water uses and aquatic habitat downstream of the diversion, staff recommended GB Energy's proposal to restrict diversions for reservoir filling to 50 cfs or less (equivalent to 71 Ranch's irrigation diversion under existing conditions)⁴² and only during the period of April 15 to June 30 when Cottonwood Creek flows are naturally at their highest levels of the year.⁴³ Relative to existing conditions, the net result of filling the reservoir under the recommended restrictions would be no more than 10 cfs of additional consumptive use, which would have negligible effects on other surface water uses.⁴⁴ Therefore, Article 404 requires GB Energy's proposed restrictions on diversion flows for reservoir filling.

63. To further ensure that flow diversions for reservoir filling do not adversely affect existing surface water uses in the South Fork and mainstem Musselshell River below Cottonwood Creek, GB Energy proposes to (1) coordinate with the District Court Musselshell River Distribution Project (District Court MRDP), Upper Musselshell Water User Association, and Deadman's Basin Water User Association whenever the project is diverting water from Cottonwood Creek for reservoir filling,⁴⁵ (2) only divert water for

downstream of the project diversion and recorded a flow of 3 cfs in September, which contrasts with flows of 50 cfs recorded in April and 55 cfs recorded in July. *See* EA at 32.

⁴¹ EA. at 11.

⁴² 71 Ranch can divert up to 50 cfs at the proposed diversion site from April through September for irrigation purposes.

⁴³ Streamflows in Cottonwood Creek increase with mountain snowmelt and spring rains in May and June. On average, the available flow in Cottonwood Creek immediately above the project diversion jumps from about 70 cfs in April to 300-325 cfs in May and June before falling back down again in July and August. *See* EA at 33 and 34.

⁴⁴ EA at 55-58.

⁴⁵ The District Court MRDP administers a water right enforcement program on the South Fork and mainstem Musselshell River, known as the Musselshell River
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reservoir filling when downstream water rights are satisfied as determined by the District Court MRDP; and (3) adjust or cease its diversions from Cottonwood Creek for reservoir filling to maintain minimum flows in the South Fork or mainstem Musselshell River. The proposed minimum flows during reservoir filling would range between 194 and 664 cfs⁴⁶ in the South Fork, depending on the date and whether Martinsdale Reservoir was being filled, and 80 cfs in the mainstem Musselshell River. GB Energy would monitor compliance with the minimum flows using an existing USGS gage located on the South Fork and three existing USGS gages on the mainstem Musselshell River from Martinsdale downstream to Shawmut, Montana. GB Energy would only divert water for reservoir filling when sufficient flow is available to meet other, non-hydroelectric project water demand and minimum flow requirements.

64. Because the project flow diversion is relatively small and natural flows in Cottonwood Creek on average exceed the requirements to meet existing uses downstream during the months that GB Energy proposes to fill the reservoirs, staff did not find it necessary in the EA⁴⁷ for GB Energy to coordinate project water withdrawals with the District Court MRDP, Upper Musselshell WUA, or the Deadman's Basin WUA or to monitor minimum flows in the South Fork or mainstem Musselshell River. Therefore, the license does not require these efforts. However, this does not preclude the licensee

Distribution Project. During the irrigation season, the District Court MRDP allocates water based on water availability and priority date of water rights within six jurisdiction zones. The South Fork Musselshell River is included in Zone 6. The Upper Musselshell WUA manages the filling and release of water from Martinsdale Reservoir, located off the South Fork. The Deadman's Basin WUA manages the filling and release of water from Deadman's Basin Reservoir, located off the mainstem Musselshell River. Prior to and during reservoir filling diversions, GB Energy would speak with a representative from both the District Court MRDP and Upper Musselshell WUA on a daily basis to determine when and how much water could be diverted from Cottonwood Creek to without impacting the District Court's water allocation schedule in the South Fork and the Upper Musselshell WUA's ability to fill Martinsdale Reservoir. Similarly, prior to and during reservoir filling diversions, GB Energy would speak with a representative from Deadman's Basin WUA on a weekly basis and would cease all diversions from Cottonwood Creek for project reservoir filling if Deadman's Basin Reservoir is being filled.

⁴⁶ GB Energy would coordinate with the Upper Musselshell WUA daily during project reservoir filling operations to determine what minimum flow levels in the South Fork within the 194-664 cfs range should be maintained.

⁴⁷ EA at 60-62, 138-140.

from implementing its proposed monitoring and coordination efforts outside of the license.

E. Cottonwood Creek Minimum Instream Flow

65. Montana DFWP holds an instream flow water reservation of 16 cfs in Cottonwood Creek to maintain proper channel and riparian functions during low-flow periods of the year. To protect aquatic and riparian habitat in Cottonwood Creek during reservoir filling operations, GB Energy proposes to maintain a minimum flow of 16 cfs as measured at the existing staff gage located approximately 4 miles downstream of the diversion where Cottonwood Creek passes under the Montana Highway 294 bridge.

66. In the EA,⁴⁸ Commission staff determined that GB Energy's proposed minimum flow would be adequate to protect downstream surface water uses in Cottonwood Creek and maintain proper channel and riparian functions for the protection of resident trout and aquatic macroinvertebrates during reservoir filling. Therefore, staff recommended,⁴⁹ and Article 405 requires, GB Energy to maintain a minimum flow of 16 cfs in Cottonwood Creek when diverting flow for the initial and periodic refilling of the reservoir.

F. Operation Compliance Monitoring Plan

67. GB Energy proposes to monitor compliance with the 16-cfs minimum flow requirement by manually checking the staff gage in Cottonwood Creek once per day when filling the reservoir. GB Energy will adjust the headgate at the diversion as necessary to meet the downstream minimum flow target. To ensure the gage's accuracy, GB Energy proposes to refine the rating curve of the staff gage prior to diverting flow for reservoir filling and continue to verify and refine the rating curve over the term of the license. GB Energy proposes to monitor compliance with its proposed diversion flow restrictions (i.e., divert no more than 50 cfs for reservoir filling and restrict flow diversions for reservoir filling to April 15 to June 30) by operating and maintaining 71 Ranch's existing Parshall flume located in the irrigation canal. GB Energy also proposes to maintain flow records for the compliance gage and Parshall flume and submit an annual report to Montana DNRC by July 30 of each year that there are diversions for reservoir filling and at other times upon Montana DNRC's request.

68. In the EA,⁵⁰ Commission staff determined that using the existing stream staff gage likely would be sufficient to document compliance with minimum flow requirements in

⁴⁸ *Id.* at 62-63.

⁴⁹ *Id.* at 130.

⁵⁰ *Id.* at 135-136.

Cottonwood Creek, but that additional information is needed on the frequency that GB Energy would verify the rating curve to ensure the accuracy of the gage over the term of the license. However, staff also concluded that the existing Parshall flume may not be sufficient to document compliance with the proposed restrictions on flow diversions for reservoir filling because it is unclear how flow records obtained from the flume could be used to differentiate between flows used for reservoir filling versus flows used for other purposes.⁵¹ Staff also determined that GB Energy's proposal to provide flow records to Montana DNRC would not enable the Commission to ensure that GB Energy complies with its proposed minimum flow and flow diversion restrictions.

69. Instead, Commission staff recommended that GB Energy develop for Commission approval an operation compliance monitoring plan that includes: (1) calibration procedures for the Cottonwood Creek minimum-flow compliance gage; (2) procedures for monitoring and documenting compliance with the proposed restrictions on flow diversions for reservoir filling, including a description of monitoring locations, equipment or measuring devices, methods, frequency of recording, quality assurance and quality control, and calibration procedures; and (3) a schedule for reporting to the Commission any deviations from the proposed Cottonwood Creek minimum flows and restrictions on flow diversions for reservoir filling.⁵² These measures are necessary for the Commission to document compliance with the license requirements; therefore, Article 406 requires GB Energy to develop an operation compliance monitoring plan with staff's recommended provisions.

G. Water Quality Monitoring

70. GB Energy proposes to monitor water quality in Cottonwood Creek prior to construction to establish baseline water quality conditions, and in the project reservoirs twice per year during project operation to monitor for changes in reservoir water quality over the license term. In the EA,⁵³ staff determined there would be minimal project-related benefits from monitoring water quality prior to construction because sufficient information already exists to characterize baseline water quality conditions in Cottonwood Creek. Staff also determined there would be minimal benefits from long-term water quality monitoring of the project reservoirs because the reservoirs would be sealed off from the surrounding rock and would operate as a self-contained closed loop system, thus preventing any contact with surrounding water sources and groundwater.

⁵¹ All flows diverted at the diversion structure, regardless of the specific purposes, will pass through the existing Parshall flume.

⁵² EA at 136.

⁵³ *Id.* at 138.

Furthermore, the reservoirs would provide low quality habitat for trout and birds, and it is unlikely that any trout or bird species would establish a long-term permanent residence in the reservoirs. For these reasons, staff concluded that the limited benefits of the proposed monitoring would not be worth the estimated \$6,200 levelized annual implementation cost. Accordingly, the license does not require GB Energy's proposed water quality monitoring measures.

H. Box Car Spring Monitoring Program Plan

71. During a June 25, 2014 scoping meeting, Martinsdale residents expressed concern that the proposed drilling and excavation of the underground vertical shaft tunnel and penstock tunnel could interrupt groundwater flowing toward nearby springs,⁵⁴ which could affect the town of Martinsdale's water supply.

72. To monitor for the potential effects of project construction and initial operation on groundwater supplying water to Box Car Spring, GB Energy proposes to implement its Box Car Spring Monitoring Program Plan. The plan includes provisions to monitor flow rate, pressure, and water quality from Box Car Spring prior to and during construction, and for one year during initial project operation. If the monitoring results indicate adverse impacts on Box Car Spring, GB Energy would implement mitigation measures specified in the plan in consultation with the Meagher County Commission and other relevant stakeholders to protect the Martinsdale's water supply.⁵⁵

73. In the EA,⁵⁶ Commission staff determined that excavation and groundwater dewatering during construction are unlikely to affect the flow or water quality of Box Car

⁵⁴ Construction of the power tunnel and powerhouse would require dewatering of excavated areas which could disrupt groundwater flowing to water supply springs located near construction areas. The closest of the three springs serving the town is Box Car Spring, which is located at least one mile to the northeast of the proposed powerhouse and tunnel sites.

⁵⁵ Potential temporary mitigation measures include GB Energy providing water trucks for residents to use for non-potable water needs and distributing potable bottled water to residents to use for drinking and cooking needs until the problem is corrected. Potential long-term mitigation measures include expanding the current water storage system, drilling a replacement well to replace flow provided by Box Car Spring, developing a new spring source, or constructing a new water treatment facility to treat surface water from a nearby water source (e.g., Musselshell River or Martinsdale Reservoir).

⁵⁶ EA at 140-141.

Spring. Furthermore, any impacts on the water supply would be limited and temporary because the upper reservoir would only affect a small percentage of the total recharge basin and once construction is complete, the powerhouse and power tunnel will be sealed off from the surrounding rock, thus allowing groundwater to flow unabated around these facilities. For these reasons, staff did not recommend and this license does not require that GB Energy implement its proposed Box Car Spring Monitoring Plan. However, this does not preclude the licensee from implementing its proposed monitoring program outside of the license.

I. Vegetation Management and Noxious Weed Control

74. Construction of the project will disturb soil and remove existing vegetation. Vegetation management along the transmission line corridor could also require periodic removal of existing vegetation. Any disturbed soils could be colonized by non-native invasive plant species known to occur in the project area, which have the potential to out-compete native plant communities, thereby reducing their value for wildlife.

75. To minimize these effects, GB Energy proposes to develop and implement a vegetation management plan and finalize its Preliminary Noxious Weed Control Plan.⁵⁷ The vegetation management plan would include measures such as: (1) educating construction personnel on required vegetation mitigation measures; (2) minimizing ground and wetland disturbance to the extent practicable; (3) returning disturbed areas to original contours, where practicable; and (4) revegetating disturbed areas as soon as it is feasible to do so using native vegetation similar to that in the surrounding areas, if practicable.

76. The Preliminary Noxious Weed Control Plan includes measures to control the introduction and spread of noxious weeds during construction, such as: (1) conducting a pre-construction inventory to identify and prioritize weed infestations for treatment in construction areas and along access routes; (2) immediately begin controlling areas of high risk for the spread of noxious weeds; (3) cleaning equipment before entering and leaving the project site; (4) locating and using weed-free staging areas, frequently monitoring these sites for early identification of weeds, and inspecting, removing, and disposing of weed seeds and plant parts found on clothing and equipment before entering these areas; (5) mechanically or chemically controlling noxious weeds; and (6) monitoring restored areas to prevent weed infestations for at least the first three years after completion of project construction.

⁵⁷ GB Energy February 29, 2016 Response to Additional Information Request Issued on February 16, 2016, at Appendix 1.

77. In the EA,⁵⁸ Commission staff recommended the further development of the plans based on site-specific conditions, and recommended that the measures contained in the plans also be applied to the diversion structure, irrigation canal, and upper reservoir access road⁵⁹ to protect all lands affected by project construction and operation. In addition, staff recommended that the plans better define their monitoring programs, which should include performance criteria that define when the measures are successful, a reporting schedule for filing monitoring results with the Commission, and an implementation schedule. Articles 408 and 409 require GB Energy's proposed plans with the staff-recommended provisions.

J. Avian Protection

78. The proposed transmission line will cross Cottonwood Creek and its riparian corridor, which provides important nesting habitat for bald eagles and other raptors. Construction of the reservoirs, powerhouse, and access road will result in the removal of grassland habitat that could be used for nesting by migratory birds.

79. To minimize the effects of vegetation removal on nesting grassland birds and reduce disturbance and electrocution and collision hazards from constructing and maintaining the transmission line on bald eagles and raptors, GB Energy proposes to implement the following measures: (1) avoid the removal of grassland vegetation between April 15 and July 15 to protect migratory birds nesting in the areas of the reservoirs, lay-down areas, powerhouse, and access road; (2) conduct a pre-construction survey of the transmission corridor to determine if bald eagles or other raptors are actively nesting within the corridor, and if so, maintain a 0.5-mile buffer between transmission-line construction and maintenance activities and the active nests; (3) design the transmission line to minimize the potential for avian electrocution; and (4) install fixed daytime visual markers (flight diverters) on the transmission line segment within a half mile east and west of where the line crosses Cottonwood Creek and inspect and replace the markers as needed twice per year to minimize avian collision hazards. GB Energy also proposes to monitor eagle nesting success at the historically active nest located along Cottonwood Creek near where the transmission line crosses as a means to evaluate project-related effects (e.g., electrocution or collision) on nesting bald eagles. GB Energy proposes to monitor nesting success for two breeding seasons after completing construction, and report the monitoring results to FWS.

⁵⁸ EA at 136-137.

⁵⁹ These project features were not included in the project boundary in GB Energy's final license application.

80. In the EA,⁶⁰ Commission staff determined that GB Energy's avian protection measures would minimize disturbance to nesting bald eagles and other raptors, and would minimize potential avian electrocution and collision hazards. However, additional detail is needed on the transmission line design and the flight diverters to show how they would be designed or oriented to prevent injury to or mortality of birds. Therefore, staff recommended,⁶¹ and Article 410 requires, GB Energy to implement its proposed avian protection measures during construction and operation and to file an avian electrocution and collision protection plan for Commission approval.

K. Transmission Line Perch Deterrents

81. GB Energy proposes to construct a 5.7-mile-long transmission line, which will require 47 transmission towers sited 650 feet apart. In the EA,⁶² Commission staff estimated that 33 of these towers would be sited in grassland and agricultural areas where they could be used for perching by raptors and increase predation pressure on other wildlife. To minimize the potential for increased predation on other wildlife by perching raptors, staff recommended that perch deterrents be included on the crossarms of the transmission line towers, concluding that the benefits to wildlife would justify the costs. Article 410 requires this provision.

L. Bird Monitoring in Project Reservoirs

82. GB Energy proposes to monitor and maintain a daily log of waterfowl and other migratory bird use of the project reservoirs during the spring and fall migration periods over the term the license, and report the results to Montana DFWP. In the EA,⁶³ Commission staff determined that the proposed monitoring would have minimal project-related benefits to birds because the reservoirs would only provide low-quality resting habitat, and the rate of water withdrawal during project operation coupled with the noise generated by the pumping and generation facilities would prevent birds from being entrained. For these reasons, this license does not require GB Energy to monitor bird use of the project reservoirs.

M. Reservoir Trout Stocking

⁶⁰ EA at 84-85.

⁶¹ *Id.* at 131-132.

⁶² *Id.* at 137.

⁶³ *Id.* 141-142.

83. Rod Gwaltney, a local resident, recommends that GB Energy stock the project reservoirs with cutthroat trout to create new angling opportunities in the project area. In the EA,⁶⁴ Commission staff determined that there would be no recreational benefit from the recommended fish stocking because such stocking would not likely be successful due to the frequently fluctuating reservoirs and it would be unsafe to provide public access to the frequently and steeply fluctuating reservoirs. For these reasons, this license does not require fish stocking.

N. Noise Mitigation

84. GB Energy estimates that noise generated during project construction could be audible as far as 3 miles from the project site, in the town of Martinsdale. To minimize noise during construction, GB Energy proposes to finalize and implement its Preliminary Construction Noise Mitigation Plan,⁶⁵ which includes the following measures: (1) limiting time periods for high noise activities such as blasting and batch plant use, (2) insulating construction equipment, (3) using engine silencers, (4) locating rock-crushing equipment in areas that would naturally shield noise, (5) providing noise management training to all employees, and (6) addressing noise complaints. In the EA,⁶⁶ Commission staff determined that implementing the measures contained in GB Energy's preliminary plan would minimize any adverse effects from noise generated by construction activities on nearby residents or visitors. Therefore, staff recommended,⁶⁷ and Article 415 requires, GB Energy to finalize its proposed Construction Noise Mitigation Plan based on the final project design.

O. Visual Resources Protection

85. Construction of project facilities will create both temporary and permanent visual changes to the immediate project area and the surrounding landscape. To minimize these effects, GB Energy proposes to: (1) avoid disturbing Gordon Butte's outermost ridgeline, (2) utilize existing roads and disturbed areas to the extent possible during construction, (3) locate construction cranes and roads outside of publicly accessible vantage points and visually-sensitive areas, (4) revegetate disturbed areas and restore disturbed surfaces as closely as possible to the original contour, (5) landscape the lower reservoir saddle dam

⁶⁴ *Id.* at 142.

⁶⁵ GB Energy January 19, 2016 Response to FERC's Acceptance Letter and Request for Additional Information at Appendix E-2.

⁶⁶ EA at 104-106.

⁶⁷ *Id.* at 133.

to blend with the natural terrain, (6) use existing vegetation to screen views of the upper reservoir from motorists on Montana Highway 294, and (7) use colors and materials that would blend with the surrounding landscape. In the EA,⁶⁸ Commission staff determined that GB Energy's proposed measures would minimize visual impacts during construction and operation. Therefore, staff recommended,⁶⁹ and Article 414 requires, GB Energy to implement the above measures to minimize visual impacts and to document implementation of the measures with photographs from established key observation points.

P. Construction Workforce Management Plan

86. Local traffic in the project area will increase with the influx of 100 to 350 workers during the construction period. To minimize impacts on local roads, GB Energy proposes to develop a workforce management plan that would include: (1) developing a traffic management plan for Montana Highway 294 in the vicinity of the project, (2) providing bus service for project personnel commuting to the project site from towns or cities outside of Martinsdale (e.g., White Sulphur Springs, Bozeman, Livingston, Billings, etc), (3) staggering workshifts (i.e., day shifts between 7 AM and 5:30 PM and night shifts between 8:00 PM and 6:30 AM) to ensure all of the crew buses and personnel vehicles are off the roads prior to morning and afternoon school bus traffic, (4) restricting delivery times to limit truck traffic during school bus traffic times, (5) implementing alcohol and drug testing for project personnel, and (6) providing on-site security.

87. In the EA,⁷⁰ Commission staff determined that developing a workforce management plan and implementing most of GB Energy's proposed preliminary measures would minimize impacts on traffic flow and volume on Montana Highway 294 and other local roads in the project area. However, staff also determined⁷¹ that the Commission would be unable to enforce drug and alcohol testing through a license as this would be a private matter between GB Energy and its employees. Therefore, staff recommended,⁷² and Article 416 requires, that GB Energy develop a construction workforce management plan that includes the above provisions, except for the requirement to conduct drug and alcohol testing of project personnel.

⁶⁸ *Id.* at 100-103.

⁶⁹ *Id.* at 132-133.

⁷⁰ *Id.* at 111-113.

⁷¹ *Id.* at 113, 142-143.

⁷² *Id.* at 133.

Q. Expanding Sewage and Water System for the Town of Martinsdale

88. Rod Gwaltney recommends that GB Energy expand the town of Martinsdale's existing sewage and water treatment system to accommodate what he anticipates to be a doubling of the town's population due to the influx of workers during project construction. In the EA,⁷³ Commission staff determined there would be a negligible increase in the size of Martinsdale's population during the construction period and that the existing sewer and water treatment system would be adequate to accommodate any increase in population during this time. For these reasons, this license does not require the recommended measure to expand Martinsdale's existing sewage and water treatment system.

R. Project Boundary

89. Commission regulations require that the land and facilities necessary for the operation and maintenance of the project be included in the project boundary.⁷⁴ Because the diversion structure, irrigation canal, Parshall flume, and upper reservoir access road are features necessary to operate and maintain the project, Commission staff recommended in the EA,⁷⁵ and this order requires, that they be made project works and brought into the project boundary. Accordingly, the Exhibit G maps filed on October 1, 2015, are not approved. Article 205 requires GB Energy to file revised Exhibit G maps enclosing these facilities within the project boundary.

EXEMPTION OF THE FERC FORM 80 RECREATION REPORT

90. The FERC Form 80 Recreation Report (Form 80) collects recreation usage data on recreation facilities at projects through the term of their licenses. Due to safety concerns related to large reservoir fluctuations during project operation, allowing public access to the project would not provide a significant recreational benefit. Because there is little or no potential for recreational opportunities within the project boundary, the licensee is exempt from filing the Form 80 during the term of its license (Article 417).

ADMINISTRATIVE PROVISIONS

A. Annual Charges

⁷³ *Id.* at 142.

⁷⁴ 18 C.F.R. § 4.41(h)(2) (2016).

⁷⁵ EA at 134.

91. The Commission collects annual charges from licensees for administration of the FPA.⁷⁶ Article 201 provides for the collection of funds for the administration of the FPA.

B. Exhibit A Project Description and Exhibit F and G Drawings

92. The Exhibit A project description filed on October 1, 2015, does not include the the diversion structure, irrigation canal, Parshall flume, and upper reservoir access road as project features. As explained above, these facilities are necessary to operate and maintain the project and must be designated as project features and brought into the project boundary. Article 202 requires the filing of a supplemental Exhibit A project description that includes the physical composition, dimensions, and general configuration of these facilities.

93. The Commission requires licensees to file sets of approved project drawings in electronic file format. Article 203 requires the filing of the Exhibit F drawings approved by this license. The Exhibit F drawings filed on October 1, 2015, do not include details of the diversion structure, irrigation canal, and Parshall flume which are facilities that are necessary to operate and maintain the project. Article 204 requires GB Energy to file revised Exhibit F drawings that include these facilities as principal project works.

94. Also as explained above, the Exhibit G drawings filed on October 1, 2015, are not approved because they do not enclose within the project boundary the diversion structure, irrigation canal, Parshall flume, and upper reservoir access road which are necessary to operate and maintain the project. Article 205 requires GB Energy to file revised Exhibit G drawings that enclose these project facilities within the project boundary.

C. Amortization Reserve

95. The Commission requires that for original licenses for major projects, non-municipal licensees must set up and maintain an amortization reserve account after the first 20 years of operation of the project under license. Article 206 requires the establishment of the account.

⁷⁶ Because this license is issued to a non-municipal licensee after December 21, 2015, and authorizes an unconstructed project, assessment of administrative annual charges will commence on the date by which the licensee is required to commence construction, as may be extended, but in no case longer than four years after license issuance. See section 11.1(c)(5) of the Commission's regulations, as modified on October 15, 2015, effective December 21, 2015, *Commencement of Assessment of Annual Charges*, Order No. 815, 80 *Fed. Reg.* 63,667 (2015), FERC Stats. & Regs. ¶ 31,372 (2015).

D. Project Financing

96. To ensure that there are sufficient funds available for project construction, operation, and maintenance, Article 207 requires GB Energy to file for Commission approval documentation of project financing for the construction, operation, and maintenance of the project at least 90 days before starting any construction associated with the project.

E. As-Built Exhibits

97. Where new construction or modifications to the project are involved, the Commission requires licensees to file revised exhibits of project features as-built. Article 208 provides for the filing of these exhibits.

F. Project Land Rights Progress Report

98. The project will occupy an estimated 442 acres of non-federal lands. Exhibits G-1 through G-5 of the license application show lands that GB Energy proposes to use for project purposes. Standard Article 5 set forth in Form L-11 requires GB Energy to acquire title in fee or the right to use in perpetuity all lands, other than lands of the United States, necessary or appropriate for the construction, maintenance, and operation of the project, within 5 years. In an October 14, 2014 filing, 71 Ranch stated that it has reached an agreement with GB Energy that will provide GB Energy with the right to construct and operate the project, including all pertinent project features. However, it is unclear whether this agreement includes the project features that must be added to the project boundary discussed above (i.e., diversion structure, irrigation canal, Parshall flume, and upper reservoir access road). To monitor compliance with Article 5, Article 209 requires GB Energy to file no later than 4 years after license issuance, a report detailing its progress in acquiring title in fee or the necessary rights to all lands within the project boundary. The report must include specific documentation on the status of the rights that have been acquired as of the filing date of the progress report, and a plan and schedule to acquire all remaining rights prior to the five-year deadline.

G. Use and Occupancy of Project Lands and Waters

99. Requiring a licensee to obtain prior Commission approval for every use or occupancy of project land would be unduly burdensome. Therefore, Article 418 allows GB Energy to grant permission, without prior Commission approval, for the use and occupancy of project lands for such minor activities as landscape planting. Such uses must be consistent with the purposes of protecting and enhancing the scenic, recreational, and environmental values of the project.

H. Start of Construction

100. Article 301 requires GB Energy to commence construction of the project works within two years from the issuance date of the license and complete construction of the project within five years from the issuance date of the license.

I. Review of Final Plans and Specifications

101. Article 302 requires GB Energy to provide the Commission's Division of Dam Safety and Inspections (D2SI)-Portland Regional Engineer with final contract drawings and specifications, together with a supporting design report consistent with the Commission's engineering guidelines, and the following plans: a Quality Control and Inspection Program; a Temporary Construction Emergency Action Plan; Soil Erosion and Sediment Control Plan, and a Construction Dust Control Plan.

102. Article 303 requires GB Energy to provide the Commission's D2SI-Portland Regional Engineer with cofferdam construction drawings approved by a Professional Engineer.

103. Article 304 requires the licensee to file the initial independent consultant inspection report no later than five years from the date of first commercial operation or the date on which the impoundment first reaches its normal maximum surface elevation, whichever comes first.

104. To demonstrate awareness of the roles and responsibilities of project licensees and their staff for the safety of the project, Article 305 requires the licensee to submit an Owner's Dam Safety Program to the Commission's D2SI-Portland Regional Engineer.

105. To ensure the safety of the public at or near the project site, Article 306 requires the licensee to provide a Public Safety Plan to the Commission's D2SI-Portland Regional Engineer.

106. Article 307 requires that any permanent or temporary modification resulting from license environmental requirements which may affect the project works or operations must be coordinated with the Commission's D2SI-Portland Regional Engineer at the beginning of the planning and design phase.

STATE AND FEDERAL COMPREHENSIVE PLANS

107. Section 10(a)(2)(A) of the FPA⁷⁷ requires the Commission to consider the extent to which a project is consistent with federal and state comprehensive plans for improving, developing, or conserving a waterway or waterways affected by the project.⁷⁸ Under

⁷⁷ 16 U.S.C. § 803(a)(2)(A) (2012).

⁷⁸ Comprehensive plans for this purpose are defined at 18 C.F.R. § 2.19 (2016).

section 10(a)(2)(A), federal and state agencies filed 36 comprehensive plans that address various resources in Montana. Of these, Commission staff identified and reviewed 8 comprehensive plans that are relevant to this project.⁷⁹ No conflicts were found.

CONSERVATION EFFORTS

108. Section 10(a)(2)(C) of the FPA requires⁸⁰ the Commission to consider the applicant's electricity consumption improvement program, including its plans, performance, and capabilities for encouraging or assisting its customers to conserve electricity cost-effectively, taking into account the published policies, restrictions, and requirements of state regulatory authorities. GB Energy plans to sell the project's energy through a long-term contract to a major utility or another buyer. Staff concludes that, given the limits of its ability to influence users of electricity generated by the project, GB Energy complies with section 10(a)(2)(C) of the FPA.

SAFE MANAGEMENT, OPERATION, AND MAINTENANCE OF THE PROJECT

109. Staff reviewed GB Energy's preliminary plans to build the project as described in the license application. The project will be safe when constructed, operated, and maintained in accordance with the Commission's standards and provisions of this license.

NEED FOR POWER

110. To assess the need for power, Commission staff looked at the needs in the operating region in which the project is located. The project will be located in the Northwest Power Pool sub-region of the Western Electricity Coordinating Council of the North American Electric Reliability Council (NERC). NERC annually forecasts electrical supply and demand nationally and regionally for a 10-year period. According to NERC's 2015 forecast, average annual total internal demand requirements for the Northwest Power Pool sub-region are projected to grow at a rate of 0.8 percent from 2016 through 2025. NERC projects anticipated reserve capacity margins (generating capacity in excess of demand) will range between 34.2 percent and 20.2 percent of firm peak demand during the 10-year forecast period, including estimated new capacity additions. Over the next 10 years, NERC estimates that plant retirements will outpace additional capacity being brought online, resulting in about 2,200 MW less capacity over the analysis period. Montana seeks to double solar development in the state by 2025 and has

⁷⁹ The list of applicable plans can be found in section 5.4 of the EA for the project. EA at 144-145.

⁸⁰ 16 U.S.C. § 803(a)(2)(C) (2012).

more than 2,000 MW of capacity in wind projects in various stages of development in the state.⁸¹ However, the variable output of wind and solar facilities can create an imbalance in the stability of the electric grid if sufficient facilities are not available to balance the system. The two primary alternatives being considered in the region to address these imbalances are pumped storage facilities and gas-fired combustion turbines. The installation of pumped storage facilities for the purposes of system balancing will support Montana's renewable resource development because the facilities do not require the burning of fossil fuels. Staff concludes that the project's power, and its contribution to the region's diversified generation mix, will help meet a need for power in the region.

PROJECT ECONOMICS

111. In determining whether to issue a license for a hydroelectric project, the Commission considers a number of public interest factors, including the economic benefits of project power. Under the Commission's approach to evaluating the economics of hydropower projects, as articulated in *Mead Corp.*,⁸² the Commission uses current costs to compare the costs of the project and likely alternative power with no forecasts concerning potential future inflation, escalation, or deflation beyond the license issuance date. The basic purpose of the Commission's economic analysis is to provide a general estimate of the potential power benefits and the costs of a project, and of reasonable alternatives to project power. The estimate helps to support an informed decision concerning what is in the public interest with respect to a proposed license.

112. In applying this analysis to the Gordon Butte Project, Commission staff considered two options relative to the no-action alternative: GB Energy's proposal and the project as licensed herein. As proposed by GB Energy, the levelized annual cost of operating the project is \$173,200,227, or \$133.23/MWh. The proposed project will generate an estimated average of 1,300,000 MWh annually. When the estimated average annual generation is multiplied by the alternative power cost of \$169.62/MWh,⁸³ the total estimated value of the project's power is \$220,500,000 in 2016 dollars.⁸⁴ To determine whether the proposed project is currently economically beneficial, the project's cost is

⁸¹ According to the Governor's Blueprint for Montana's Energy Future.

⁸² 72 FERC ¶ 61,027 (1995).

⁸³ The alternative power cost is based on the "On-Peak" value of power provided by GB Energy in its license application.

⁸⁴ Cost values provided in the license application in 2015 were escalated to 2016 (\$2016) using the Bureau of Reclamation Construction Cost Trend indices.

subtracted from the value of the project's power.⁸⁵ Therefore, in the first year of operation, the project costs \$47,299,773 or \$36.38/MWh, less than the cost of alternative power.

113. As licensed herein with staff measures, the levelized annual cost of operating the project will be about \$173,189,862, or \$133.22/MWh. Based on the same estimated average generation of 1,300,000 MWh, the project will produce power valued at \$220,500,000 when multiplied by the alternative power cost of \$169.62/MWh. Therefore, in the first year of operation, project power will cost \$47,310,138, or \$36.39/MWh, less than the cost of alternative power.

114. In considering public interest factors, the Commission takes into account that hydroelectric projects offer unique operational benefits to the electric utility system (ancillary service benefits). These benefits include the ability to help maintain the stability of a power system, such as quickly adjusting power output to respond to rapid changes in system load, and to respond rapidly to a major utility system or regional blackout by providing a source of power to help restart fossil-fuel based generating stations and putting them back online.

COMPREHENSIVE DEVELOPMENT

115. Sections 4(e) and 10(a)(1) of the FPA⁸⁶ require the Commission to give equal consideration to power development purposes and to the purposes of energy conservation; the protection, mitigation of damage to, and enhancement of fish and wildlife; the protection of recreational opportunities; and the preservation of other aspects of environmental quality. Any license issued shall be such as in the Commission's judgment will be best adapted to a comprehensive plan for improving or developing a waterway or waterways for all beneficial public uses. The decision to license this project, and the terms and conditions included herein, reflect such consideration.

116. The EA for the project contains background information, analysis of effects, and support for related license articles. Based on the record of this proceeding, including the EA and the comments thereon, licensing the Gordon Butte Project as described in this order would not constitute a major federal action significantly affecting the quality of the human environment. The project will be safe if operated and maintained in accordance with the requirements of this license.

⁸⁵ Details of staff's economic analysis for the project as licensed herein and for various alternatives are included in the EA in section 4.1.

⁸⁶ 16 U.S.C. §§ 797(e) and 803(a)(1) (2012).

117. Based on Commission staff's independent review and evaluation of the project, recommendations from the resource agencies and other stakeholders, and the no-action alternative, as documented in the EA, the proposed Gordon Butte Project, as licensed herein, is best adapted to a comprehensive plan for improving or developing Cottonwood Creek.

118. This alternative was selected because: (1) issuance of an original license will serve to provide a beneficial, dependable, and inexpensive source of electric energy; and (2) the required environmental measures will protect fish and wildlife resources, water quality, aesthetic resources, and historic properties.

LICENSE TERM

119. Section 6 of the FPA⁸⁷ provides that original licenses for hydropower projects shall be issued for a period not to exceed 50 years. The Commission's general policy is to establish 30-year terms for projects with little or no redevelopment, new construction, new capacity, or environmental mitigation and enhancement measures; 40-year terms for projects with a moderate amount of such activities; and 50-year terms for projects with extensive measures.⁸⁸

120. This license requires an extensive amount of new construction, including: an upper and lower reservoir, three dams, a conveyance system between the reservoirs, a powerhouse with generating/pumping facilities, a transmission line and two substations, and an access road to the lower reservoir. Consequently, a license term of 50 years for the Gordon Butte Pumped Storage Project is appropriate.

The Director orders:

(A) This license is issued to GB Energy Park, LLC (licensee), for a period of 50 years, effective the first day of the month in which this order is issued, to construct, operate, and maintain the Gordon Butte Pumped Storage Project. This license is subject to the terms and conditions of the Federal Power Act (FPA), which is incorporated by reference as part of this license, and subject to the regulations the Commission issues under the provisions of the FPA.

(B) The project consists of:

(1) All lands, to the extent of the licensee's interest in those lands, described in the project description and the project boundary discussion of this order.

⁸⁷ *Id.* § 799.

⁸⁸ *See City of Danville, Virginia*, 58 FERC ¶ 61,318 at 62,020 (1992).

(2) Project works consisting of: (a) a new 3,000-foot-long by 1,000-foot-wide upper reservoir created by a 90-foot-high, 7,500-foot-long concrete faced rockfill dam atop Gordon Butte with a normal maximum pool elevation of 6,027 feet mean sea level, active storage capacity of 4,070 acre-feet, and surface area of approximately 63 acres; (b) a new 250-foot-long emergency overflow spillway for the upper reservoir with a crest elevation of 6,029 feet mean sea level and a maximum hydraulic capacity of 5,200 cubic feet per second that will discharge into a concrete stilling basin and riprap lined channel; (c) a new reinforced concrete combination intake/outlet structure located in the upper reservoir connecting to the powerhouse through a new 738-foot-long underground vertical shaft tunnel and a new 3,000-foot-long underground concrete and steel-lined penstock tunnel; (d) a new partially buried 338-foot-long, 109-foot-wide, 74-foot-high reinforced concrete and steel powerhouse constructed adjacent to the lower reservoir, which will contain four ternary pump-turbine units each rated at 100 megawatts (MW) that will discharge into the lower reservoir through 16-foot-wide, 11.54-foot-high closure gates; (e) a new 2,300-foot-long by 1,900-foot-wide lower reservoir created by a combination of excavation and two 60-foot-high, 500- and 750-foot-long concrete faced rockfill dams with a normal maximum pool elevation of 5,057 feet mean sea level, active storage capacity of 4,070 acre-feet, and surface area of approximately 88 acres; (f) an existing diversion structure on Cottonwood Creek and an existing 5.5-mile-long, 4-foot-wide, 4-foot-deep earthen irrigation canal connected to the diversion structure; (g) an existing Parshall flume located in the irrigation canal to monitor diversion flows; (h) a new trashrack and 4-foot-wide by 4-foot-high slide gate at the terminus of the irrigation canal connecting to a new 150-foot-long, 4-foot-diameter pipe that will discharge flows from Cottonwood Creek to the lower reservoir; (i) an existing 3.89-mile-long improved access road from Montana Highway 294 to the upper reservoir on top of Gordon Butte; (j) a new 0.3-mile-long access road from Montana Highway 294 to the lower reservoir; and (k) a new overhead 5.7-mile-long, 230-kilovolt (kV) transmission line to a new 1,200-foot-wide, 1,450-foot-long substation, where power will be stepped up to 500-kV, and interconnect with adjacent existing non-project twin 500-kV transmission lines.

The project works generally described above are more specifically shown and described by those portions of Exhibits A and F shown below:

Exhibit A: Exhibit A, pages 1 through 14, entitled “Exhibit A – Project Description”, describing the mechanical, electrical, and transmission equipment of the license application filed on October 1, 2015; and clarified in pages 1 through 4 of the licensee’s January 19, 2016 filing.

Exhibit F: The following Exhibit F drawings filed on October 1, 2015.

<u>Exhibit F Drawing</u>	<u>FERC No. 13642-</u>	<u>Description</u>
F-1	1	Cover Sheet, Location Plan and Index

F-3	3	Upper Reservoir Plan
F-4	4	Upper Reservoir Dam Sections Sheet 1 of 2
F-5	5	Upper Reservoir Dam Sections Sheet 2 of 2
F-6	6	Upper Reservoir Staging Area Plan
F-7	7	Upper Reservoir Emergency Spillway Plan
F-8	8	Upper Reservoir Emergency Spillway Sections
F-9	9	Reservoir Liner, Drainage Gallery and Adit Sections
F-10	10	Upper Reservoir Intake Structure
F-11	11	Upper Reservoir Intake Bridge
F-12	12	Tunnel and Shaft Plan and Profile
F-13	13	Penstock Layout
F-14	14	Powerhouse Plot Plan
F-15	15	Powerhouse Plan at Drainage Gallery Level
F-16	16	Powerhouse Plan at Pump Level
F-17	17	Powerhouse Plan at Turbine Level
F-18	18	Powerhouse Plan at Generator Level
F-19	19	Powerhouse Elevation
F-20	20	Powerhouse Longitudinal Section

F-21	21	Powerhouse Transverse Section
F-23	23	Lower Reservoir Sections
F-24	24	Powerhouse Substation
F-25	25	Interconnection Substation Arrangement
F-27	27	Transmission Line Sheet 2

(3) All of the structures, fixtures, equipment, or facilities used to operate or maintain the project, all portable property that may be employed in connection with the project, and all riparian or other rights that are necessary or appropriate in the operation or maintenance of the project.

(C) Exhibit A described above is approved and made part of the license. However, Exhibit A must be supplemented to include the physical composition, dimensions, and general configuration of the following principal project works: diversion structure on Cottonwood Creek, irrigation canal leading to the lower reservoir, Parshall flume located within the irrigation canal, and access road from Montana Highway 294 to the upper reservoir site.

(D) Exhibits F-1, F-3 through F-21, F-23 through F-25, and F-27 drawings described above are approved and made part of the license. Exhibits F-2, F-22, and F-26 drawings filed as part of the application are not approved because they do not include the following project works: diversion structure on Cottonwood Creek, irrigation canal leading to the lower reservoir, Parshall flume located within the irrigation canal, and access road from Montana Highway 294 to the upper reservoir site.

(E) Exhibit G drawings filed as part of the application are not approved because they do not include the following project works within the project boundary: diversion structure on Cottonwood Creek, irrigation canal leading to the lower reservoir, Parshall flume located within the irrigation canal, and access road from Montana Highway 294 to the upper reservoir site.

(F) This license is also subject to the articles set forth in Form L-11 (October, 1975), entitled "Terms and Conditions of License for Unconstructed Major Project Affecting the Interests of Interstate or Foreign Commerce," (*see* 54 F.P.C. 1792 et seq.), as reproduced at the end of this order, and the following additional articles:

Article 201. Administrative Annual Charges. The licensee must pay the United States annual charges, as determined in accordance with the provisions of the Commission's regulations in effect from time to time, effective as of the date by which

the licensee is required to commence project construction, or as that date may be extended, but in no case longer than four years after license issuance, to reimburse the United States for the cost of administration of Part I of the Federal Power Act. The authorized installed capacity for that purpose is 400 megawatts.

Article 202. Exhibit A Project Description. Within 90 days of the issuance date of the license, the licensee must file, for Commission approval, a supplemental Exhibit A that includes the physical composition, dimensions, and general configuration of the following project works: diversion structure on Cottonwood Creek, irrigation canal leading to the lower reservoir, Parshall flume located within the irrigation canal and access road from Montana Highway 294 to the upper reservoir site.

Article 203. Approved Exhibit F Drawings. Within 45 days of the effective date of this license, as directed below, the licensee must file two sets of the approved exhibit drawings (Exhibits F-1, F-3 through F-21, F-23 through F-25, and F-27) in electronic file format on compact disks with the Secretary of the Commission, ATTN: OEP/DHAC.

Digital images of the approved exhibit drawings must be prepared in electronic format. Prior to preparing each digital image, the FERC Project-Drawing Number (i.e., P-13642-1 through P-13642-27) must be shown in the margin below the title block of the approved drawing. Exhibit F drawings must be segregated from other project exhibits, and identified as (CEII) material under 18 C.F.R. § 388.113(c). Each drawing must be a separate electronic file, and the file name must include: FERC Project-Drawing Number, FERC Exhibit, Drawing Title, date of this license, and file extension in the following format [P-13642-1, F-1, Cover Sheet, Location Plan, and Index, MM-DD-YYYY.TIF].

All digital images of the exhibit drawings must meet the following format specification:

IMAGERY – black & white raster file
FILE TYPE – Tagged Image File Format, (TIFF) CCITT Group 4
(also known as T.6 coding scheme)
RESOLUTION – 300 dots per inch (dpi) desired, (200 dpi minimum)
DRAWING SIZE FORMAT – 22” x 34” (minimum), 24” x 36” (maximum)
FILE SIZE – less than 1 megabyte desired

Article 204. Revised Exhibit F Drawings. Within 90 days of the issuance date of the license, the licensee must file, for Commission approval, revised Exhibits F-2 and F-26 filed on October 1, 2015, to show the diversion structure, irrigation canal, and Parshall flume as project features and a revised Exhibit F-22 filed on October 1, 2015, to show the irrigation canal as a project feature. In addition, the licensee must provide Exhibit F drawings of the diversion structure, irrigation canal, and Parshall flume. The revised and

new Exhibit F drawings must comply with sections 4.39 and 4.41 of the Commission's regulations.

Article 205. Revised Exhibit G Drawings. Within 90 days of the issuance date of the license, the licensee must file, for Commission approval, revised Exhibit G drawings to enclose within the project boundary the following project works: the diversion structure on Cottonwood Creek, irrigation canal leading to the lower reservoir, Parshall flume located within the irrigation canal, and access road from Montana Highway 294 to the upper reservoir site. The Exhibit G drawings must comply with sections 4.39 and 4.41 of the Commission's regulations.

Article 206. Amortization Reserve. Pursuant to section 10(d) of the Federal Power Act, after the first 20 years of operation of the project under license, a specified reasonable rate of return upon the net investment in the project must be used for determining surplus earnings of the project for the establishment and maintenance of amortization reserves. One-half of the project surplus earnings, if any, accumulated after the first 20 years of operations under the license, in excess of the specified rate of return per annum on the net investment, must be set aside in a project amortization reserve account at the end of each fiscal year. To the extent that there is a deficiency of project earnings below the specified rate of return per annum for any fiscal year after the first 20 years of operation under the license, the amount of that deficiency must be deducted from the amount of any surplus earnings subsequently accumulated, until absorbed. One-half of the remaining surplus earnings, if any, cumulatively computed, must be set aside in the project amortization reserve account. The amounts established in the project amortization reserved account must be maintained until further order of the Commission.

The annual specified reasonable rate of return must be the sum of the annual weighted costs of long-term debt, preferred stock, and common equity, as defined below. The annual weighted cost for each component of the reasonable rate of return is the product of its capital ratio and cost rate. The annual capital ratio for each component of the rate of return must be calculated based on an average of 13 monthly balances of amounts properly includable in the licensee's long-term debt and proprietary capital accounts as listed in the Commission's Uniform System of Accounts. The cost rates for long-term debt and preferred stock must be their respective weighted average costs for the year, and the cost of common equity must be the interest rate on 10-year government bonds (reported as the Treasury Department's 10-year constant maturity series) computed on the monthly average for the year in question plus four percentage points (400 basis points).

Article 207. Documentation of Project Financing. At least 90 days before any ground-disturbing activities, the licensee must file with the Commission, for approval, the licensee's documentation for project financing. The documentation must show that the licensee has acquired the funds, or commitment for funds, necessary to construct the project in accordance with this license. The documentation must include, at a minimum,

financial statements, including a balance sheet, income statement, and a statement of actual or estimated cash flows over the license term which provide evidence that the licensee has sufficient assets, credit, and projected revenues to cover project construction, operation, and maintenance expenses, and any other estimated project liabilities and expenses.

The financial statements must be prepared in accordance with generally accepted accounting principles and signed by an independent certified public accountant. The licensee must not commence project construction associated with the project before the filing is approved.

Article 208. *As-built Exhibits.* Within 90 days of completion of construction of the facilities authorized by this license, the licensee must file for Commission approval, revised exhibits A, F, and G, as applicable, to describe and show those project facilities as built.

Article 209. *Project Land Rights Progress Report.* No later than four years after license issuance, the licensee must file a report with the Commission describing the status of acquiring title in fee or the rights for all the lands within the project boundary. The report must provide an overview map of each parcel and summary table identifying the licensee's rights over each parcel within the project boundary. The report must also include specific supporting documentation showing the status of the land rights on all parcels of land within the project boundary that: (1) have been acquired up to the date of filing of the report, including pertinent deeds, lease agreements, and/or bill of sale information that specifically verify the licensee's rights; and (2) the licensee's plan and schedule for acquiring all remaining project lands prior to the five-year deadline, including a history of actions taken, current owner information, the type of ownership to be acquired whether in fee or by easement, and the timeline for completing property acquisition.

Article 301. *Start of Construction.* The licensee must commence construction of the project works within two years from the issuance date of the license and must complete construction of the project within 5 years from the issuance date of the license.

Article 302. *Contract Plans and Specifications.* At least 60 days prior to the start of any construction, the licensee must submit one copy of its plans and specifications and supporting design document to the Commission's Division of Dam Safety and Inspections (D2SI)-Portland Regional Engineer, and two copies to the Commission (one of these shall be a courtesy copy to the Director, D2SI). The submittal to the D2SI-Portland Regional Engineer must also include as part of preconstruction requirements: a Quality Control and Inspection Program, Temporary Construction Emergency Action Plan, a Soil Erosion and Sediment Control Plan, and a Construction Dust Control Plan. The licensee may not begin construction until the D2SI-Portland Regional Engineer has

reviewed and commented on the plans and specifications, determined that all preconstruction requirements have been satisfied, and authorized start of construction.

Article 303. *Cofferdam and Deep Excavation Construction Drawings.* Should construction require cofferdams or deep excavations, the licensee must: (1) have a Professional Engineer who is independent from the construction contractor, review and approve the design of contractor-designed cofferdams and deep excavations prior to the start of construction; and (2) ensure that construction of cofferdams and deep excavations is consistent with the approved designs. At least 30 days before starting construction of any cofferdams or deep excavations, the licensee must submit one copy to the Commission's Division of Dam Safety and Inspections (D2SI)-Portland Regional Engineer and two copies to the Commission (one of these copies shall be a courtesy copy to the Commission's Director, D2SI), of the approved cofferdam and deep excavation construction drawings and specifications, and the letters of approval.

Article 304. *Inspection by Independent Consultant.* In accordance with Part 12D §12.38 of the Commission's Regulations, the initial independent consultant's inspection of the project must be completed and the report on the inspection filed no later than five years from the date of first commercial operation or the date on which the impoundment first reaches its normal maximum surface elevation, whichever comes first. Information on specific inspection and report requirements can be found in Part 12D §12.35 and §12.37 of the Commission's Regulations.

Article 305. *Owner's Dam Safety Program.* Within 90 days of the issuance date of the license, the licensee must submit to the Commission's Division of Dam Safety and Inspections—Portland Regional Engineer, an Owner's Dam Safety Program which at a minimum must demonstrate a clear acknowledgement of the dam owner's responsibility for the safety of the project, an outline of the roles and responsibilities of the dam safety staff, and access of the dam safety official to the Chief Executive Officer. For guidance on preparing an Owner's Dam Safety Program the licensee should reference the information posted on the FERC website.

Article 306. *Public Safety Plan.* At least 60 days before the start of construction, the licensee must submit one copy to the Commission's Division of Dam Safety and Inspections (D2SI)-Portland Regional Engineer and two copies to the Commission (one of these copies shall be a courtesy copy to the Commission's Director, D2SI) of a Public Safety Plan. The plan must include a description of all safety devices and signage needed to warn the public of fluctuations in flow from the project or otherwise protect the public in the use of project lands and waters. The plan must also include a map showing the location of all public safety measures. For guidance on preparing public safety plans the licensee can review the *Guidelines for Public Safety at Hydropower Projects* on the FERC website.

Article 307. Project Modification Resulting from Environmental Requirements. If environmental requirements under this license require modification that may affect the project works or operations, the licensee must consult with the Commission's Division of Dam Safety and Inspections (D2SI)–Portland Regional Engineer. Consultation must allow sufficient review time for the Commission to ensure that the proposed work does not adversely affect the project works, dam safety, or project operation.

Article 401. Spoil Disposal Plan. Within 6 months of license issuance, or at least 90 days prior to the start of any ground-disturbing activity, whichever comes first, the licensee must file, for Commission approval, a spoil disposal plan that describes procedures to ensure the safe disposal of excavated spoil material from the project site.

The plan must include, but not necessarily be limited to, the following:

- (1) a map showing the locations of the specific sites for permanent spoil disposal; and
- (2) a description of the measures that would be implemented to stabilize and prevent erosion or the spread of noxious weeds at permanent disposal sites.

The licensee must prepare the plan after consultation with Montana Department of Environmental Quality; Montana Department of Fish, Wildlife, and Parks; and the Meagher County Commission. The licensee must include with the plan documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the agencies, and specific descriptions of how the agencies' comments are accommodated by the plan. The licensee must allow a minimum of 30 days for the agencies to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing must include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. Implementation of the plan must not begin until the licensee is notified by the Commission that the plan is approved. Upon Commission approval, the licensee must implement the plan, including any changes required by the Commission.

Article 402. Hazardous Materials Containment and Fuel Storage Plan. Within 6 months of license issuance, or at least 90 days prior to the start of any ground-disturbing activity, whichever comes first, the licensee must file, for Commission approval, a hazardous materials containment and fuel storage plan. The plan must include, but not necessarily be limited to, a description of how oil, fuels, lubricant products, and other hazardous liquid substances will be transported, stored, handled, and disposed of in a manner that is safe and minimizes adverse effects to environmental resources.

The licensee must prepare the plan after consultation with Montana Department of Environmental Quality and Montana Department of Fish, Wildlife, and Parks. The licensee must include with the plan documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the agencies, and specific descriptions of how the agencies' comments are accommodated by the plan. The licensee must allow a minimum of 30 days for the agencies to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing must include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. Land-disturbing activities must not begin until the licensee is notified by the Commission that the plan is approved. Upon Commission approval, the licensee must implement the plan, including any changes required by the Commission.

Article 403. Spill Prevention, Control, and Containment Plan. Within 6 months of license issuance, or at least 90 days prior to the start of any ground-disturbing activity, whichever comes first, the licensee must file, for Commission approval, a spill prevention, control, and containment plan to minimize the potential for hazardous material spills and ensure that procedures are in place to minimize the extent and adverse effects of any hazardous materials spills that do occur during construction, operation, and maintenance of the project.

The plan must include, but not necessarily be limited to, the following:

(1) a description of the equipment and procedures that will be used in the event of a spill to ensure the proper containment and cleanup of any hazardous substances;

(2) a provision to notify the Commission and Montana Department of Environmental Quality (Montana DEQ) as soon as possible, but no later than 24 hours after discovering a hazardous substances spill; and

(3) a provision to file a report with the Commission within 30 days of a hazardous substance spill that identifies: (a) the location of the spill; (b) the type and quantity of hazardous material spilled; (c) any observed or reported adverse environmental impacts resulting from the spill (d) any corrective actions that have been undertaken to clean up the spill; and (e) any measures taken to ensure similar spills do not occur in the future.

The licensee must prepare the plan after consultation with Montana DEQ and Montana Department of Fish, Wildlife, and Parks. The licensee must include with the plan documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the agencies, and specific descriptions of how the agencies' comments are accommodated by the plan. The licensee must allow a minimum of 30 days for the agencies to comment and to make

recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing must include the licensee's reasons, based on project-specific information. The Commission reserves the right to require changes to the plan. Land-disturbing activities must not begin until the licensee is notified by the Commission that the plan is approved. Upon Commission approval, the licensee must implement the plan, including any changes required by the Commission.

Article 404. Diversions for Reservoir Filling. The licensee must restrict flow diversions for initial fill and re-fill of the reservoirs to 50 cubic feet per second or less, and only during the period from April 15 to June 30 to protect existing agricultural water uses and aquatic resources of Cottonwood Creek.

Diversion flows for reservoir filling may be temporarily modified if required by operating emergencies beyond the control of the licensee, or for short periods upon mutual agreement among the licensee, Montana Department of Natural Resources and Conservation, and Montana Department of Fish, Wildlife, and Parks. If the diversion flow for reservoir filling is so modified, the licensee shall notify the Commission as soon as possible, but no later than 10 days after each such incident.

Article 405. Minimum Instream Flow. The licensee must maintain a minimum flow of 16 cubic feet per second, as measured at the location of the existing staff gage where Cottonwood Creek passes under Montana Highway 294, whenever the licensee withdraws water to fill the reservoirs to protect aquatic resources of Cottonwood Creek.

The minimum flow may be temporarily modified if required by operating emergencies beyond the control of the licensee, or for short periods upon mutual agreement among the licensee, Montana Department of Natural Resources and Conservation, and Montana Department of Fish, Wildlife, and Parks. If the flow is so modified, the licensee shall notify the Commission as soon as possible, but no later than 10 days after each such incident.

Article 406. Operation Compliance Monitoring Plan. Within 6 months of license issuance, the licensee must file with the Commission, for approval, an operation compliance monitoring plan that describes how the licensee will document compliance with the diversion flow restrictions and minimum flow requirements of Article 404 and 405.

The plan must include, but not necessarily be limited to, the following:

- (1) a description of all gages or recording devices that will be used to monitor compliance with the operational requirements of this license;
- (2) the method of calibration of each gage and/or recording device;
- (3) the frequency of recording for each gage and/or recording device;

(4) a provision to maintain a log of diversions for reservoir filling;

(5) procedures for recording, maintaining, and reporting the monitoring data to the Commission; and

(6) a provision for reporting to the Commission as soon as possible, but no later than 10 days, after discovery of any deviation from the operational requirements as specified in Articles 404 and 405 of the license, and to file a report with the Commission within 30 days of discovery of any deviation that describes: (a) the cause, severity, and duration of the incident; (b) any observed or reported adverse environmental impacts resulting from the incident; (c) a description of any corrective measures implemented at the time of the incident and the measures implemented or proposed to ensure that similar incidents do not recur.

The licensee must prepare the plan after consultation with Montana Department of Environmental Quality; Montana Department of Fish, Wildlife, and Parks; and Montana Department of Natural Resources and Conservation. The licensee must include with the plan documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the agencies, and specific descriptions of how the agencies' comments are accommodated by the plan. The licensee must allow a minimum of 30 days for the agencies to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing must include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. Project operation must not begin until the licensee is notified by the Commission that the plan is approved. Upon Commission approval, the licensee must implement the plan, including any changes required by the Commission.

Article 407. *Reservation of Authority to Prescribe Fishways.* Authority is reserved to the Commission to require the licensee to construct, operate, and maintain, or to provide for the construction, operation, and maintenance of such fishways as may be prescribed by the Secretary of the Interior pursuant to section 18 of the Federal Power Act.

Article 408. *Noxious Weed Control Plan.* Within 6 months of license issuance, or at least 90 days prior to the start of any ground-disturbing activity, whichever comes first, the licensee must file, for Commission approval, a final Noxious Weed Control Plan. The plan must include, at a minimum, all of the provisions of the licensee's preliminary plan filed on February 29, 2016, and the following additional items:

(1) monitoring protocols and performance criteria to determine the success of noxious weed control measures, and a description of procedures to be followed if monitoring shows that control measures are not successful; and

(2) a provision to file a report with the Commission by December 31 of years 4 through 7 of project operation that documents the monitoring results and provides either recommendations for continued monitoring, plans to augment noxious weed control measures, or recommendations to discontinue monitoring; and

(3) an implementation schedule.

Measures in the plan apply to all lands within the project boundary, including the diversion structure, irrigation canal, and upper reservoir access road.

The licensee must prepare the plan after consultation with Montana Department of Fish, Wildlife, and Parks; the U.S. Fish and Wildlife Service; and the Meagher County Weed Coordinator. The licensee must include with the plan documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the agencies, and specific descriptions of how the agencies' comments are accommodated by the plan. The licensee must allow a minimum of 30 days for the agencies to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing must include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. Land-disturbing activities must not begin until the licensee is notified by the Commission that the plan is approved. Upon Commission approval, the licensee must implement the plan, including any changes required by the Commission.

Article 409. Vegetation Management Plan. Within 6 months of license issuance, or at least 90 days prior to the start of any ground-disturbing activity whichever comes first, the licensee must file, for Commission approval, a Vegetation Management Plan to revegetate areas disturbed during construction. The plan must include, at a minimum:

(1) a provision to educate construction personnel on the mitigation measures required in this license;

(2) a description of measures to be used to minimize, to the extent feasible, disturbance to vegetation, including confining construction activities and personnel to existing roads and disturbed areas, and designating specific access routes and areas of disturbance on the ground with visible markings;

(3) a description of the measures to be used to minimize disturbance to wetlands and water features, including using plates or other suitable structures for crossing wetlands or water features;

(4) a proposed plant species list to be used for revegetation based on surrounding native vegetation and a description of planting densities;

(5) a description of techniques and best management practices to be used to promote revegetation, including returning disturbed areas to original contours where practicable, revegetating disturbed areas as soon as it is feasible to do so, and controlling the establishment of noxious weeds as required by Article 408;

(6) monitoring protocols and performance criteria to determine the success of revegetation efforts, and a description of the procedures to be followed if monitoring shows that revegetation is not successful; and

(7) a provision to file a report with the Commission by December 31 of years 4 through 7 of project operation that documents the monitoring results and provides either recommendations for continued monitoring, or recommendations to discontinue monitoring.

Measures in the plan apply to all lands within the project boundary, including the diversion structure, irrigation canal, and upper reservoir access road.

The licensee must prepare the plan after consultation with Montana Department of Fish, Wildlife, and Parks and the U.S. Fish and Wildlife Service. The licensee must include with the plan documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the agencies, and specific descriptions of how the agencies' comments are accommodated by the plan. The licensee must allow a minimum of 30 days for the agencies to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing must include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. Land-disturbing activities must not begin until the licensee is notified by the Commission that the plan is approved. Upon Commission approval, the licensee must implement the plan, including any changes required by the Commission.

Article 410. Avian Protection. The licensee must implement the following measures to minimize bird electrocution and collision hazards and enhanced raptor predation associated with project transmission line, and to minimize disturbance of nesting bald eagles, other raptors, and migratory birds during construction and transmission line maintenance activities:

Avian Electrocution and Collision Protection Plan

Within one year of license issuance, the licensee must file for Commission approval an avian electrocution and collision protection plan to minimize the potential for

bird mortality associated with the project transmission line and substation. The plan must include the following:

- (1) design of power poles that provides adequate separation of energized conductors, groundwires, and other metal hardware; adequate insulation; or other measures necessary to protect raptors from electrocution hazards;
- (2) a description of the line marking device (flight diverters) that will be installed on the transmission line for 0.5-miles on both sides of the line where it crosses Cottonwood Creek to protect birds from colliding with the transmission line; spacing and arrangement of the markers; and provisions to inspect and replace the markers twice annually for the life of the license; and
- (3) a description of the perch deterrents to be installed on the crossarms of the transmission line towers to protect other wildlife from raptor predation.

The plan must address how the licensee considered the Avian Power Line Interaction Committee guidelines provided in the *Avian Power Line Interaction Committee's Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006*, and *Reducing Avian Collisions with Power Lines: The State of the Art in 2012* in the design specifications.

The licensee must prepare the plan after consultation with Montana Department of Fish, Wildlife, and Parks and the U.S. Fish and Wildlife Service (FWS). The licensee must include with the plan documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the agencies, and specific descriptions of how the agencies' comments are accommodated by the plan. The licensee must allow a minimum of 30 days for the agencies to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing must include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. Implementation of the plan must not begin until the licensee is notified by the Commission that the plan is approved. Upon Commission approval, the licensee must implement the plan, including any changes required by the Commission.

Nesting Migratory Birds and Raptor Disturbance Protection Measures

The licensee must implement the following measures during project construction and transmission line maintenance activities to minimize disturbing nesting migratory grassland birds and nesting bald eagles and other raptors:

- (1) land-disturbing and vegetation removal in the following construction areas must not occur from April 15 to July 15: reservoirs, lay-down areas, powerhouse, and

access roads;

(2) prior to clearing the transmission line corridor, beginning construction of the transmission line or conducting transmission line maintenance activities, the licensee must conduct a pre-construction survey of the transmission-line corridor to determine if eagles or other raptors (e.g., red-tailed hawks) are nesting within 0.5 miles of the corridor, if the nests are active, and whether the juveniles have fledged;

(3) if the survey finds that eagle or raptor nests are active and the juveniles have not fledged, the licensee must maintain a 0.5-mile buffer between transmission-line construction and maintenance activities and the active nests; unless the maintenance activities are required to address emergencies beyond the licensee's control. In such circumstances, the licensee must notify the FWS within 10 days of completing the emergency activities and the steps taken to minimize adverse effects to the nesting eagle or raptors; and

(4) the licensee must monitor the nesting success of the historically active nest located along Cottonwood Creek near the project transmission line for two breeding seasons after completing construction to evaluate whether the new transmission line is adversely affecting eagle nesting, and report the monitoring results to FWS.

(5) the licensee must file a report with the Commission within six months of completing construction of the transmission line detailing the steps taken to prevent disturbing nesting migratory birds and raptors.

Article 411. Fencing of Cultural Resource Sites. Prior to the start of any land-disturbing activity, the licensee must install temporary fences around the six cultural properties identified as Site Nos. 24ME0051, 24ME1080, 24ME1081, 24ME1083, 24ME1084 and 24ME1087 in table 4.2-40 of Exhibit E of the Final License Application filed on October 1, 2015. The licensee must maintain fences around these cultural sites for the duration of construction.

Article 412. On-site Archeological Resource Monitor. During the project construction period, the licensee must provide an archeologist at the construction site to monitor construction activities in areas along the transmission line route where it is likely that previously-unidentified cultural resource could be discovered. In the event that any cultural resources are found, the licensee must stop all land-disturbing activities and follow the procedures required in Article 413 of this license.

Article 413. Protection of Undiscovered Cultural Resources. If the licensee discovers previously unidentified cultural resources during the course of constructing, maintaining, or developing project works or other facilities at the project, the licensee must stop all land-clearing and land-disturbing activities in the vicinity of the resource and consult with the Montana State Historic Preservation Officer (SHPO) to determine

the need for any cultural resource studies or measures. If no studies or measures are needed, the licensee must file with the Commission documentation of its consultation with the Montana SHPO immediately.

If a discovered cultural resource is determined to be eligible for the National Register of Historic Places (National Register), the licensee must file for Commission approval a historic properties management plan (HPMP) prepared by a qualified cultural resource specialist after consultation with the Montana SHPO. In developing the HPMP, the licensee must use the Advisory Council on Historic Preservation and the Federal Energy Regulatory Commission's Guidelines for the Development of Historic Properties Management Plans for FERC Hydroelectric Projects, dated May 20, 2002. The HPMP must include the following items: (1) a description of each discovered property, indicating whether it is listed in or eligible to be listed in the National Register; (2) a description of the potential effect on each discovered property; (3) proposed measures for avoiding or mitigating adverse effects; (4) documentation of consultation; and (5) a schedule for implementing mitigation and conducting additional studies. The Commission reserves the right to require changes to the HPMP.

The licensee must not resume land-clearing or land-disturbing activities in the vicinity of a cultural resource discovered during construction, until informed by the Commission that the requirements of this article have been fulfilled.

Article 414. Visual Resources Protection. The licensee must implement the following visual resource protection measures during project construction: (1) avoid disturbing Gordon Butte's outermost ridgeline, (2) utilize existing roads and disturbed areas to the extent practicable during construction, (3) locate construction cranes and roads outside of publicly-accessible vantage points and visually-sensitive areas, (4) revegetate disturbed areas and restore disturbed surfaces as closely as possible to the original contour, as required by Article 409; (5) landscape the lower reservoir saddle dam to blend with the natural terrain, (6) minimize vegetation removal during construction of the upper reservoir such that the existing vegetation is maintained to screen views of the upper reservoir from motorists on Montana Highway 294, and (7) use colors and materials on project facilities that blend with the surrounding landscape.

Within six months of completing project construction, file a report with the Commission documenting the steps taken to minimize visual effects. Include in the report, photographs showing views of the constructed project facilities from all of the key observation points identified in the Aesthetic Resources Analysis Study Report conducted by Garcia and Associates in November, 2014 and filed with the license application on October 15, 2015.

Article 415. Construction Noise Mitigation Plan. Within 6 months of license issuance, or at least 90 days prior to the start of any ground-disturbing activity, whichever comes first, the licensee must file, for Commission approval, a final Construction Noise

Mitigation Plan based on final project design. The plan must include, at a minimum, all of the provisions of the licensee's preliminary plan filed on January 19, 2016.

The licensee must prepare the plan after consultation with the Meagher County Commission. The licensee must include with the plan documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the Meagher County Commission, and specific descriptions of how the Meagher County Commission's comments are accommodated by the plan. The licensee must allow a minimum of 30 days for the Meagher County Commission to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing must include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. Implementation of the plan must not begin until the licensee is notified by the Commission that the plan is approved. Upon Commission approval, the licensee must implement the plan, including any changes required by the Commission.

Article 416. Construction Workforce Management Plan. Within 6 months of license issuance, or at least 90 days prior to the start of any ground-disturbing activity, whichever comes first, the licensee must file, for Commission approval, a Construction Workforce Management Plan. The plan must include, at a minimum:

- (1) a traffic management plan for Montana Highway 294 in the vicinity of the project;
- (2) a provision to provide transportation for project personnel commuting to the project site from towns or cities outside of Martinsdale (e.g., White Sulphur Springs, Bozeman, Livingston, Billings, etc.);
- (3) a construction schedule that staggers work shifts to ensure all of the work crew buses and personnel vehicles are off the roads prior to morning and afternoon school bus traffic;
- (4) a construction material delivery schedule that limits truck traffic during school bus traffic times; and
- (5) a provision to provide on-site security.

The licensee must prepare the plan after consultation with Montana Department of Transportation and the Meagher County Commission. The licensee must include with the plan documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the consulted entities, and specific descriptions of how the entities' comments are accommodated by the plan. The licensee must allow a minimum of 30 days for the entities to comment and to make

recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing must include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. Implementation of the plan must not begin until the licensee is notified by the Commission that the plan is approved. Upon Commission approval, the licensee must implement the plan, including any changes required by the Commission.

Article 417. FERC Form 80 Exemption. Due to large and frequent reservoir fluctuations during project operation, there is little or no potential for recreational opportunities within the project boundary. Therefore, upon the effective date of the license, the licensee is exempt from 18 C.F.R. § 8.11, which requires the filing of the Licensed Hydropower Development Recreation Report (FERC Form 80), for the Gordon Butte Pumped Storage Project.

Article 418. Use and Occupancy. (a) In accordance with the provisions of this article, the licensee must have the authority to grant permission for certain types of use and occupancy of project lands and waters and to convey certain interests in project lands and waters for certain types of use and occupancy, without prior Commission approval. The licensee may exercise the authority only if the proposed use and occupancy is consistent with the purposes of protecting and enhancing the scenic, recreational, and other environmental values of the project. For those purposes, the licensee must also have continuing responsibility to supervise and control the use and occupancies for which it grants permission, and to monitor the use of, and ensure compliance with the covenants of the instrument of conveyance, for any interests that it has conveyed, under this article. If a permitted use and occupancy violates any condition of this article or any other condition imposed by the licensee for protection and enhancement of the project's scenic, recreational, or other environmental values, or if a covenant of a conveyance made under the authority of this article is violated, the licensee must take any lawful action necessary to correct the violation. For a permitted use or occupancy, that action includes, if necessary, canceling the permission to use and occupy the project lands and waters and requiring the removal of any non-complying structures and facilities.

(b) The type of use and occupancy of project lands and waters for which the licensee may grant permission without prior Commission approval are: (1) landscape plantings; (2) non-commercial piers, landings, boat docks, or similar structures and facilities that can accommodate no more than 10 water craft at a time and where said facility is intended to serve single-family type dwellings; (3) embankments, bulkheads, retaining walls, or similar structures for erosion control to protect the existing shoreline; and (4) food plots and other wildlife enhancement. To the extent feasible and desirable to protect and enhance the project's scenic, recreational, and other environmental values, the licensee must require multiple use and occupancy of facilities for access to project lands

or waters. The licensee must also ensure, to the satisfaction of the Commission's authorized representative, that the use and occupancies for which it grants permission are maintained in good repair and comply with applicable state and local health and safety requirements. Before granting permission for construction of bulkheads or retaining walls, the licensee must: (1) inspect the site of the proposed construction, (2) consider whether the planting of vegetation or the use of riprap would be adequate to control erosion at the site, and (3) determine that the proposed construction is needed and would not change the basic contour of the impoundment shoreline. To implement this paragraph (b), the licensee may, among other things, establish a program for issuing permits for the specified types of use and occupancy of project lands and waters, which may be subject to the payment of a reasonable fee to cover the licensee's costs of administering the permit program. The Commission reserves the right to require the licensee to file a description of its standards, guidelines, and procedures for implementing this paragraph (b) and to require modification of those standards, guidelines, or procedures.

(c) The licensee may convey easements or rights-of-way across, or leases of project lands for: (1) replacement, expansion, realignment, or maintenance of bridges or roads where all necessary state and federal approvals have been obtained; (2) storm drains and water mains; (3) sewers that do not discharge into project waters; (4) minor access roads; (5) telephone, gas, and electric utility distribution lines; (6) non-project overhead electric transmission lines that do not require erection of support structures within the project boundary; (7) submarine, overhead, or underground major telephone distribution cables or major electric distribution lines (69 kilovolt or less); and (8) water intake or pumping facilities that do not extract more than one million gallons per day from a project impoundment. No later than January 31 of each year, the licensee must file with the Commission a report briefly describing for each conveyance made under this paragraph (c) during the prior calendar year, the type of interest conveyed, the location of the lands subject to the conveyance, and the nature of the use for which the interest was conveyed.

(d) The licensee may convey fee title to, easements or rights-of-way across, or leases of project lands for: (1) construction of new bridges or roads for which all necessary state and federal approvals have been obtained; (2) sewer or effluent lines that discharge into project waters, for which all necessary federal and state water quality certification or permits have been obtained; (3) other pipelines that cross project lands or waters but do not discharge into project waters; (4) non-project overhead electric transmission lines that require erection of support structures within the project boundary, for which all necessary federal and state approvals have been obtained; (5) private or public marinas that can accommodate no more than 10 water craft at a time and are located at least one-half mile (measured over project waters) from any other private or public marina; (6) recreational development consistent with an approved report on recreational resources of an Exhibit E; and (7) other uses, if: (i) the amount of land

conveyed for a particular use is five acres or less; (ii) all of the land conveyed is located at least 75 feet, measured horizontally, from project waters at normal surface elevation; and (iii) no more than 50 total acres of project lands for each project development are conveyed under this clause (d)(7) in any calendar year. At least 60 days before conveying any interest in project lands under this paragraph (d), the licensee must file a letter with the Commission, stating its intent to convey the interest and briefly describing the type of interest and location of the lands to be conveyed (a marked Exhibit G map may be used), the nature of the proposed use, the identity of any federal or state agency official consulted, and any federal or state approvals required for the proposed use. Unless the Commission's authorized representative, within 45 days from the filing date, requires the licensee to file an application for prior approval, the licensee may convey the intended interest at the end of that period.

(e) The following additional conditions apply to any intended conveyance under paragraph (c) or (d) of this article:

(1) Before conveying the interest, the licensee must consult with federal and state fish and wildlife or recreation agencies, as appropriate, and the State Historic Preservation Officer.

(2) Before conveying the interest, the licensee must determine that the proposed use of the lands to be conveyed is not inconsistent with any approved report on recreational resources of an Exhibit E; or, if the project does not have an approved report on recreational resources, that the lands to be conveyed do not have recreational value.

(3) The instrument of conveyance must include the following covenants running with the land: (i) the use of the lands conveyed shall not endanger health, create a nuisance, or otherwise be incompatible with overall project recreational use; (ii) the grantee shall take all reasonable precautions to ensure that the construction, operation, and maintenance of structures or facilities on the conveyed lands will occur in a manner that will protect the scenic, recreational, and environmental values of the project; and (iii) the grantee shall not unduly restrict public access to project lands or waters.

(4) The Commission reserves the right to require the licensee to take reasonable remedial action to correct any violation of the terms and conditions of this article, for the protection and enhancement of the project's scenic, recreational, and other environmental values.

(f) The conveyance of an interest in project lands under this article does not in itself change the project boundaries. The project boundaries may be changed to exclude land conveyed under this article only upon approval of revised Exhibit G drawings (project boundary maps) reflecting exclusion of that land. Lands conveyed under this article will be excluded from the project only upon a determination that the lands are not

necessary for project purposes, such as operation and maintenance, flowage, recreation, public access, protection of environmental resources, and shoreline control, including shoreline aesthetic values. Absent extraordinary circumstances, proposals to exclude lands conveyed under this article from the project shall be consolidated for consideration when revised Exhibit G drawings would be filed for approval for other purposes.

(g) The authority granted to the licensee under this article must not apply to any part of the public lands and reservations of the United States included within the project boundary.

(F) The licensee must serve copies of any Commission filing required by this order on any entity specified in the order to be consulted on matters relating to that filing. Proof of service on these entities must accompany the filing with the Commission.

(G) This order constitutes final agency action. Any party may file a request for rehearing of this order within 30 days from the date of its issuance, as provided in section 313(a) of the FPA, 16 U.S.C. § 8251 (2012), and section 385.713 of the Commission's regulations, 18 C.F.R. § 385.713 (2016). The filing of a request for rehearing does not operate as a stay of the effective date of this license or of any other date specified in this order. The licensee's failure to file a request for rehearing shall constitute acceptance of this order.

Ann F. Miles
Director
Office of Energy Projects

**FORM L-11
(October 1975)**

FEDERAL ENERGY REGULATORY COMMISSION

**TERMS AND CONDITIONS OF LICENSE FOR UNCONSTRUCTED
MAJOR PROJECT AFFECTING THE INTERESTS
OF INTERSTATE OR FOREIGN COMMERCE**

Article 1. The entire project, as described in this order of the Commission, shall be subject to all of the provisions, terms, and conditions of the license.

Article 2. No substantial change shall be made in the maps, plans, specifications, and statements described and designated as exhibits and approved by the Commission in its order as a part of the license until such change shall have been approved by the Commission: Provided, however, That if the Licensee or the Commission deems it necessary or desirable that said approved exhibits, or any of them, be changed, there shall be submitted to the Commission for approval a revised, or additional exhibit or exhibits covering the proposed changes which, upon approval by the Commission, shall become a part of the license and shall supersede, in whole or in part, such exhibit or exhibit theretofore made a part of the license as may be specified by the Commission.

Article 3. The project works shall be constructed in substantial conformity with the approved exhibits referred to in Article 2 herein or as changed in accordance with the provisions of said article. Except when emergency shall require for the protection of navigation, life, health, or property, there shall not be made without prior approval of the Commission any substantial alteration or addition not in conformity with the approved plans to any dam or other project works under the license or any substantial use of project lands and waters not authorized herein; and any emergency alteration, addition, or use so made shall thereafter be subject to such modification and change as the Commission may direct. Minor changes in project works, or in uses of project lands and waters, or divergence from such approved exhibits may be made if such changes will not result in a decrease in efficiency, in a material increase in cost, in an adverse environmental impact, or in impairment of the general scheme of development; but any of such minor changes made without the prior approval of the Commission, which in its judgment have produced or will produce any of such results, shall be subject to such alteration as the Commission may direct.

Upon the completion of the project, or at such other time as the Commission may direct, the Licensee shall submit to the Commission for approval revised exhibits insofar as necessary to show any divergence from or variations in the project area and project boundary as finally located or in the project works as actually constructed when compared with the area and boundary shown and the works described in the license or in

the exhibits approved by the Commission, together with a statement in writing setting forth the reasons which in the opinion of the Licensee necessitated or justified variation in or divergence from the approved exhibits. Such revised exhibits shall, if and when approved by the Commission, be made a part of the license under the provisions of Article 2 hereof.

Article 4. The construction, operation, and maintenance of the project and any work incidental to additions or alterations shall be subject to the inspection and supervision of the Regional Engineer, Federal Energy Regulatory Commission, in the region wherein the project is located, or of such other officer or agent as the Commission may designate, who shall be the authorized representative of the Commission for such purposes. The Licensee shall cooperate fully with said representative and shall furnish him a detailed program of inspection by the Licensee that will provide for an adequate and qualified inspection force for construction of the project and for any subsequent alterations to the project. Construction of the project works or any features or alteration thereof shall not be initiated until the program of inspection for the project works or any such feature thereof has been approved by said representative. The Licensee shall also furnish to said representative such further information as he may require concerning the construction, operation, and maintenance of the project, and of any alteration thereof, and shall notify him of the date upon which work will begin, as far in advance thereof as said representative may reasonably specify, and shall notify him promptly in writing of any suspension of work for a period of more than one week, and of its resumption and completion. The Licensee shall allow said representative and other officers or employees of the United States, showing proper credentials, free and unrestricted access to, through, and across the project lands and project works in the performance of their official duties. The Licensee shall comply with such rules and regulations of general or special applicability as the Commission may prescribe from time to time for the protection of life, health, or property.

Article 5. The Licensee, within five years from the date of issuance of the license, shall acquire title in fee or the right to use in perpetuity all lands, other than lands of the United States, necessary or appropriate for the construction, maintenance, and operation of the project. The Licensee or its successors and assigns shall, during the period of the license, retain the possession of all project property covered by the license as issued or as later amended, including the project area, the project works, and all franchises, easements, water rights, and rights of occupancy and use; and none of such properties shall be voluntarily sold, leased, transferred, abandoned, or otherwise disposed of without the prior written approval of the Commission, except that the Licensee may lease or otherwise dispose of interests in project lands or property without specific written approval of the Commission pursuant to the then current regulations of the Commission. The provisions of this article are not intended to prevent the abandonment or the retirement from service of structures, equipment, or other project works in connection with replacements thereof when they become obsolete, inadequate, or inefficient for

further service due to wear and tear; and mortgage or trust deeds or judicial sales made thereunder, or tax sales, shall not be deemed voluntary transfers within the meaning of this article.

Article 6. In the event the project is taken over by the United States upon the termination of the license as provided in Section 14 of the Federal Power Act, or is transferred to a new licensee or to a nonpower licensee under the provisions of Section 15 of said Act, the Licensee, its successors and assigns shall be responsible for, and shall make good any defect of title to, or of right of occupancy and use in, any of such project property that is necessary or appropriate or valuable and serviceable in the maintenance and operation of the project, and shall pay and discharge, or shall assume responsibility for payment and discharge of, all liens or encumbrances upon the project or project property created by the Licensee or created or incurred after the issuance of the license: Provided, That the provisions of this article are not intended to require the Licensee, for the purpose of transferring the project to the United States or to a new licensee, to acquire any different title to, or right of occupancy and use in, any of such project property than was necessary to acquire for its own purposes as the Licensee.

Article 7. The actual legitimate original cost of the project, and of any addition thereto or betterment thereof, shall be determined by the Commission in accordance with the Federal Power Act and the Commission's Rules and Regulations thereunder.

Article 8. The Licensee shall install and thereafter maintain gages and streamgaging stations for the purpose of determining the state and flow of the stream or streams on which the project is located, the amount of water held in and withdrawn from storage, and the effective head on the turbines; shall provide for the required reading of such gages and for the adequate rating of such stations; and shall install and maintain standard meters adequate for the determination of the amount of electric energy generated by the project works. The number, character, and location of gages, meters, or other measuring devices, and the method of operation thereof, shall at all times be satisfactory to the Commission or its authorized representative. The Commission reserves the right, after notice and opportunity for hearing, to require such alterations in the number, character and locations of gages, meters, or other measuring devices, and the method of operation thereof, as are necessary to secure adequate determinations. The installation of gages, the rating of said stream or streams, and the determination of the flow thereof, shall be under the supervision of, or in cooperation with, the District Engineer of the United States Geological Survey having charge of stream-gaging operations in the region of the project, and the Licensee shall advance to the United States Geological Survey the amount of funds estimated to be necessary for such supervision, or cooperation for such periods as may be mutually agreed upon. The Licensee shall keep accurate and sufficient records of the foregoing determinations to the satisfaction of the Commission, and shall make return of such records annually at such time and in such form as the Commission may prescribe.

Article 9. The Licensee shall, after notice and opportunity for hearing, install additional capacity or make other changes in the project as directed by the Commission, to the extent that it is economically sound and in the public interest to do so.

Article 10. The Licensee shall, after notice and opportunity for hearing, coordinate the operation of the project, electrically and hydraulically, with such other projects or power systems and in such manner as the Commission may direct in the interest of power and other beneficial public uses of water resources, and on such conditions concerning the equitable sharing of benefits by the Licensee as the Commission may order.

Article 11. Whenever the Licensee is directly benefited by the construction work of another licensee, a permittee, or the United States on a storage reservoir or other headwater improvement, the Licensee shall reimburse the owner of the headwater improvement for such part of the annual charges for interest, maintenance, and depreciation thereof as the Commission shall determine to be equitable, and shall pay to the United States the cost of making such determination as fixed by the Commission. For benefits provided by a storage reservoir or other headwater improvement of the United States, the Licensee shall pay to the Commission the amounts for which it is billed from time to time for such headwater benefits and for the cost of making the determinations pursuant to the then current regulations of the Commission under the Federal Power Act.

Article 12. The operations of the Licensee, so far as they affect the use, storage and discharge from storage of waters affected by the license, shall at all times be controlled by such reasonable rules and regulations as the Commission may prescribe for the protection of life, health, and property, and in the interest of the fullest practicable conservation and utilization of such waters for power purposes and for other beneficial public uses, including recreational purposes, and the Licensee shall release water from the project reservoir at such rate in cubic feet per second, or such volume in acre-feet per specified period of time, as the Commission may prescribe for the purposes hereinbefore mentioned.

Article 13. On the application of any person, association, corporation, Federal Agency, State or municipality, the Licensee shall permit such reasonable use of its reservoir or other project properties, including works, lands and water rights, or parts thereof, as may be ordered by the Commission, after notice and opportunity for hearing, in the interests of comprehensive development of the waterway or waterways involved and the conservation and utilization of the water resources of the region for water supply or for the purposes of steam-electric, irrigation, industrial, municipal or similar uses. The Licensee shall receive reasonable compensation for use of its reservoir or other project properties or parts thereof for such purposes, to include at least full reimbursement for any damages or expenses which the joint use causes the Licensee to incur. Any such compensation shall be fixed by the Commission either by approval of an agreement

between the Licensee and the party or parties benefiting or after notice and opportunity for hearing. Applications shall contain information in sufficient detail to afford a full understanding of the proposed use, including satisfactory evidence that the applicant possesses necessary water rights pursuant to applicable State law, or a showing of cause why such evidence cannot concurrently be submitted, and a statement as to the relationship of the proposed use to any State or municipal plans or orders which may have been adopted with respect to the use of such waters.

Article 14. In the construction or maintenance of the project works, the Licensee shall place and maintain suitable structures and devices to reduce to a reasonable degree the liability of contact between its transmission lines and telegraph, telephone and other signal wires or power transmission lines constructed prior to its transmission lines and not owned by the Licensee, and shall also place and maintain suitable structures and devices to reduce to a reasonable degree the liability of any structures and devices to reduce to a reasonable degree the liability of any structures or wires falling or obstructing traffic or endangering life. None of the provisions of this article are intended to relieve the Licensee from any responsibility or requirement which may be imposed by any other lawful authority for avoiding or eliminating inductive interference.

Article 15. The Licensee shall, for the conservation and development of fish and wildlife resources, construct, maintain, and operate, or arrange for the construction, maintenance, and operation of such reasonable facilities, and comply with such reasonable modifications of the project structures and operation, as may be ordered by the Commission upon its own motion or upon the recommendation of the Secretary of the Interior or the fish and wildlife agency or agencies of any State in which the project or a part thereof is located, after notice and opportunity for hearing.

Article 16. Whenever the United States shall desire, in connection with the project, to construct fish and wildlife facilities or to improve the existing fish and wildlife facilities at its own expense, the Licensee shall permit the United States or its designated agency to use, free of cost, such of the Licensee's lands and interests in lands, reservoirs, waterways and project works as may be reasonably required to complete such facilities or such improvements thereof. In addition, after notice and opportunity for hearing, the Licensee shall modify the project operation as may be reasonably prescribed by the Commission in order to permit the maintenance and operation of the fish and wildlife facilities constructed or improved by the United States under the provisions of this article. This article shall not be interpreted to place any obligation on the United States to construct or improve fish and wildlife facilities or to relieve the Licensee of any obligation under this license.

Article 17. The Licensee shall construct, maintain, and operate, or shall arrange for the construction, maintenance, and operation of such reasonable recreational facilities, including modifications thereto, such as access roads, wharves, launching ramps,

beaches, picnic and camping areas, sanitary facilities, and utilities, giving consideration to the needs of the physically handicapped, and shall comply with such reasonable modifications of the project, as may be prescribed hereafter by the Commission during the term of this license upon its own motion or upon the recommendation of the Secretary of the Interior or other interested Federal or State agencies, after notice and opportunity for hearing.

Article 18. So far as is consistent with proper operation of the project, the Licensee shall allow the public free access, to a reasonable extent, to project waters and adjacent project lands owned by the Licensee for the purpose of full public utilization of such lands and waters for navigation and for outdoor recreational purposes, including fishing and hunting: Provided, That the Licensee may reserve from public access such portions of the project waters, adjacent lands, and project facilities as may be necessary for the protection of life, health, and property.

Article 19. In the construction, maintenance, or operation of the project, the Licensee shall be responsible for, and shall take reasonable measures to prevent, soil erosion on lands adjacent to streams or other waters, stream sedimentation, and any form of water or air pollution. The Commission, upon request or upon its own motion, may order the Licensee to take such measures as the Commission finds to be necessary for these purposes, after notice and opportunity for hearing.

Article 20. The Licensee shall consult with the appropriate State and Federal agencies and, within one year of the date of issuance of this license, shall submit for Commission approval a plan for clearing the reservoir area. Further, the Licensee shall clear and keep clear to an adequate width lands along open conduits and shall dispose of all temporary structures, unused timber, brush, refuse, or other material unnecessary for the purposes of the project which results from the clearing of lands or from the maintenance or alteration of the project works. In addition, all trees along the periphery of project reservoirs which may die during operations of the project shall be removed. Upon approval of the clearing plan all clearing of the lands and disposal of the unnecessary material shall be done with due diligence and to the satisfaction of the authorized representative of the Commission and in accordance with appropriate Federal, State, and local statutes and regulations.

Article 21. If the Licensee shall cause or suffer essential project property to be removed or destroyed or to become unfit for use, without adequate replacement, or shall abandon or discontinue good faith operation of the project or refuse or neglect to comply with the terms of the license and the lawful orders of the Commission mailed to the record address of the Licensee or its agent, the Commission will deem it to be the intent of the Licensee to surrender the license. The Commission, after notice and opportunity for hearing, may require the Licensee to remove any or all structures, equipment and power lines within the project boundary and to take any such other action necessary to

restore the project waters, lands, and facilities remaining within the project boundary to a condition satisfactory to the United States agency having jurisdiction over its lands or the Commission's authorized representative, as appropriate, or to provide for the continued operation and maintenance of nonpower facilities and fulfill such other obligations under the license as the Commission may prescribe. In addition, the Commission in its discretion, after notice and opportunity for hearing, may also agree to the surrender of the license when the Commission, for the reasons recited herein, deems it to be the intent of the Licensee to surrender the license.

Article 22. The right of the Licensee and of its successors and assigns to use or occupy waters over which the United States has jurisdiction, or lands of the United States under the license, for the purpose of maintaining the project works or otherwise, shall absolutely cease at the end of the license period, unless the Licensee has obtained a new license pursuant to the then existing laws and regulations, or an annual license under the terms and conditions of this license.

Article 23. The terms and conditions expressly set forth in the license shall not be construed as impairing any terms and conditions of the Federal Power Act which are not expressly set forth herein.