

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Garkane Energy Cooperative, Inc.

Project No. 2219-020

ORDER ISSUING NEW LICENSE

(August 31, 2007)

INTRODUCTION

1. On April 29, 2005, Garkane Energy Cooperative, Inc. (Garkane) filed, pursuant to Part I of the Federal Power Act (FPA),¹ an application for a new license to operate and maintain the 4.3-megawatt (MW) Boulder Creek Hydroelectric Project (project), located in south-central Utah, in Garfield County. The project occupies 29.6 acres² of federal lands, administered by the U.S. Department of Agriculture (Agriculture), Forest Service (Forest Service) as part of the Dixie National Forest. As discussed below, I am issuing a new license for the project.

BACKGROUND

2. The Commission issued the original license for the project on May 27, 1957, and the license expired on April 30, 2007. Since then, Garkane has operated the project under an annual license pending the disposition of its new license application.

3. On July 18, 2001, Garkane filed a notice of intent to seek a new license, and on September 21, 2001, Garkane requested permission to utilize the Commission's Alternative Licensing Process to prepare its application, which the Commission granted on December 6, 2001.

¹16 U.S.C. §§ 791a-825r (2000).

² Pursuant to an order issued on June 10, 2005, approving as-built exhibit K drawings, Garkane filed on August 23, 2005, a statement that 29.6 acres of federal lands are included within the project boundary.

4. Public notice of the application was published in the Federal Register on May 20, 2005. Public notice that the application was accepted was published in the Federal Register on October 6, 2005.

5. The October 6, 2005 public notice also solicited protests, motions to intervene, comments, final recommendations, terms and conditions, and prescriptions. In response, the Forest Service, the Department of the Interior (Interior), and Trout Unlimited timely filed motions to intervene. None of the intervenors oppose the project. Interior and the Forest Service also filed comments, terms and conditions, prescriptions, and final recommendations.

6. On December 14, 2006, the Commission issued a draft environmental assessment (EA), followed by a final EA on May 4, 2007.

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

PROJECT DESCRIPTION

8. Garkane operates the project in run-of-river mode. Depending upon the availability of water, all or a portion of the combined flows of the East Fork and West Fork of Boulder Creek is diverted into the penstock. The penstock capacity does not exceed Garkane's non-consumptive water right of 48.1 cubic feet per second (cfs) associated with the project. Garkane inspects project facilities at least once per week. An operator is at the Boulder powerhouse at all times to monitor and maintain project facilities.

9. Water is collected from the West Fork and conveyed by a buried pipeline to the East Fork reservoir. The water then enters a penstock via an intake structure extending out from the East Fork dam and is conveyed to the Boulder powerhouse, 1,527 feet lower in elevation. Water passing through the Boulder powerhouse is discharged into a re-regulating pond for irrigation distribution by the Boulder Irrigation Company (BIC). The water in the re-regulating pond is divided by BIC and returned to its irrigation system via three irrigation ditches: (1) the West Fork of Lyman ditch, also known as the Porcupine ditch; (2) the Thompson ditch; and (3) the return ditch to the mainstem of Boulder Creek. The project also includes the seasonally operated 100-kilowatt (kW) Peterson powerhouse, located adjacent to the Boulder Creek Project penstock. During the irrigation season, the Peterson powerhouse uses a portion of the penstock flows and discharges the flows through a 15-foot-long tailrace into the Peterson ditch, an irrigation canal. A more detailed project description is contained in Ordering Paragraph (B)(2).

10. The project has the capacity to generate 4.3 MW. The average monthly combined output for the Boulder and Peterson powerhouse generator units for the period July 1995 through December 2003 was an estimated 2,055,825 kilowatt-hours (kWh) per month or 24,669,900 kWh annually.

11. Garkane proposes installing the following new facilities: (1) flow release equipment at the East Fork dam; (2) streamflow and temperature monitoring devices at several locations on Boulder Creek and its tributaries in the project area; and (3) two fish migration barriers on Boulder Creek downstream of the confluence of the East and West Forks of Boulder Creek. Garkane proposes no increased generating capacity.

12. The project occupies privately-owned lands and national forest system lands. The project boundary incorporates lands occupied by project facilities.

SECTION 4(e) FINDINGS AND CONDITIONS

13. A portion of the Boulder Creek Project is located in the Dixie National Forest. Section 4(e) of the Federal Power Act (FPA)³ provides that the Commission can issue a license for a project located within any reservation only if it finds that the license will not interfere or be inconsistent with the purpose for which such reservation was created or acquired. I have reviewed the Organic Administration Act of 1867,⁴ which established the purposes for forest reservations, and the presidential proclamations that created and expanded or contracted the Dixie National Forest.⁵ There is no evidence

³16 U.S.C. § 797(e) (2000).

⁴ 16 U. S. C. § 473 *et seq.* (2000)

⁵ The Dixie National Forest was created by a presidential proclamation issued September 25, 1905, 34 Stat. 3147 (1902-1907). (It was initially called the Dixie National Reserve, but, pursuant to 34 Stat. 1269 (1907), the term “national forest” was subsequently substituted for the term “forest reserve.”) Subsequently, lands were added and/or excluded from the Dixie National Forest by numerous presidential proclamations, executive orders, legislation, and one public land order issued by the Secretary of the Interior pursuant to executive order. *See* Proclamation issued May 22, 1908, 35 Stat. 2187 (1902-1909); Proclamation issued February 10, 1909, 35 Stat. 2221 (1902-1909); Proclamation issued March 1, 1913, 37 Stat. 1773 (1906-1913); Proclamation issued May 10, 1916, 39 Stat. 1781 (1910-1917); Proclamation issued July 12, 1918, 40 Stat. 1805 (1917-1919); Proclamation issued August 22, 1933, 48 Stat. 1705 (1928-1934); Exec. Order No. 7607, 2 Fed. Reg. 720 (April 21, 1937); Act of March 7, 1942, ch. 162, 56 Stat. 141 (1940-1942); Public Land Order No. 260, 10 Fed. Reg. 1244 (Dept. of the

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or allegation in this proceeding to indicate that relicensing the Boulder Creek Project would interfere with the purposes of the Dixie National Forest. Therefore, I find that this license, as conditioned, will not interfere or be inconsistent with the purposes for which the Dixie National Forest was created.

14. Section 4(e) further requires that Commission licenses for projects located within federal reservations must include all conditions that the Secretary of the department under whose supervision the reservation falls shall deem necessary for the adequate protection and utilization of such reservation. The Dixie National Forest is under the supervision of Agriculture's Forest Service.

15. However, pursuant to section 241 of the Energy Policy Act of 2005 (EPAAct),⁶ and Agriculture regulations implementing it,⁷ any party to a Commission license proceeding may request that Agriculture conduct a trial-type hearing on "disputed issues of material fact," and may propose alternative conditions to that agency.

16. The Forest Service initially filed mandatory final section 4(e) conditions on November 28, 2005. Pursuant to the EPAAct and Agriculture's regulations, Garkane appealed them before the Forest Service and proposed alternatives to the Forest Service's section 4(e) conditions nos. 6, 8, 9, 10, 13, and 14. The two negotiated and agreed that the Forest Service would file with the Commission a change in its section 4(e) condition no. 14, and also would withdraw its section 10(a) condition no. 1.⁸ Accordingly, on April 7, 2006, the Forest Service withdrew its 10(a) condition

Interior, January 19, 1945); Exec. Order No. 10890, 25 Fed. Reg. 10331 (October 27, 1960); Act of June 30, 1961, Pub. L. No. 87-81, 75 Stat. 198; and Act of September 28, 1984, Pub. L. 98-428, 98 Stat. 1657. At the time of the Dixie National Forest's creation, the Organic Administration Act of 1897, 19 U.S.C. § 475 (2000), stipulated that all national forest lands were established and administered only for watershed protection and timber production.

⁶ See Pub. L. 109-58, 119 Stat. 595 (2005). The EPAAct amended section 4(e) to entitle license applicants to a determination on the record, after opportunity for an agency trial-type hearing, on any disputed issues of material fact with respect to conditions of the Secretary of the department under whose supervision the reservation falls. 16 U.S.C. § 823(d) (Supp. 2006).

⁷ 7 C.F.R. §§ 1.601-1.674 (2006).

⁸ On April 7, 2006, Garkane filed a copy of this agreement, with a request for the Commission's approval. The request for the Commission's approval is inapposite

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no. 1 and its original section 4(e) condition no. 14, and filed a new section 4(e) condition no. 14 that is in keeping with the change to which the Forest Service and Garkane had agreed. In addition, the Forest Service subsequently withdrew its final conditions nos. 6, 8, and 13, and submitted modified conditions nos. 6, 8, and 13.⁹ The final conditions, as modified, are set forth in Appendix A of this order and incorporated into this license by ordering paragraph (D). The conditions are summarized below.

17. The section 4(e) conditions require Garkane to: (1) obtain Special Use Authorization if the Commission determines that the project involves the use of any additional National Forest Service System lands outside the current project boundary, and obtain a construction temporary special use authorization for any ground-disturbing activities on National Forest System lands; (2) obtain written approval of final design plans from the Forest Service for any future project components that may potentially affect National Forest System resources; (3) obtain written approval of the Forest Service prior to making any changes to project components; (4) consult with the Forest Service annually regarding measures needed to ensure protection and development of the natural resource values of the project area; (5) prior to any surrender of this license, restore National Forest System lands to a condition satisfactory to the Forest Service, and for transfer of ownership, demonstrate that any proposed license transferee is financially able to provide for the costs of surrender and site restoration of the project area; (6) maintain all project components in a manner acceptable to the Forest Service, and file with the Commission within one year of license issuance a Forest-Service-approved Operation and Maintenance Plan that includes measures for erosion and sediment control and vegetation management; (7) file a "Safety During Construction Plan" that describes measures to be taken to ensure public safety during any ground-breaking activity; (8) indemnify the United States in the event of claims related to the licensee's use or occupancy of federal lands; (9) file a Forest-Service-approved Recreation and Access Management Plan with the Commission within one year of license issuance; (10) file a Forest-Service-approved Scenery Management Plan with the Commission within one year of license issuance or

because the agreement was a resolution of a dispute before the Forest Service under EPAct, and unnecessary since the terms agreed to have been filed here as revised section 4(e) conditions, which are mandatory.

⁹ Modified conditions nos. 6 and 13 replace the corresponding final conditions, while modified condition no. 8 combines the language from three related conditions with minor modifications, and replaces final conditions nos. 8, 9, and 10.

60 days prior to ground-breaking activity; (11) file a Forest-Service-approved Biological Evaluation with the Commission 90 days prior to implementing any new activity that may affect Forest Service sensitive species and their habitat; and (12) implement protection, mitigation, and enhancement measures for Colorado River (CR) cutthroat trout,¹⁰ including: (a) the release of minimum flows downstream from the East Fork dam; (b) installation of flow and temperature monitoring devices and fish migration barriers; (c) non-native fish removal; (d) implementation of an Adaptive Environmental Monitoring and Management Program; and (e) potential future CR cutthroat trout re-establishment projects.¹¹

18. Section 10(a)(1) of the FPA requires that the Commission determine that any licensed project is “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 (including related spawning grounds and habitat), and for other beneficial public uses, including irrigation, flood control, water supply, and recreational and other purposes referred to in section 4(e).” In reviewing section 4(e) terms and conditions, the Commission looks not only to the wishes of the conditioning agency, but also at the greater public interest, and whether section 4(e) conditions meet the comprehensive development/equal consideration standard. I discuss below those section 4(e) conditions that I would not adopt, were they not mandatory under the FPA (section 4(e)).

19. Commission staff recommended in the final EA most of the section 4(e) conditions, except for the following: (1) monitoring flow and temperature in streams other than the East Fork bypassed reach and the East Fork downstream of the dam; (2)

¹⁰ CR cutthroat trout is a Forest Service sensitive species and a state of Utah conservation species. The species is managed under a Conservation Agreement among the States of Utah, Colorado, and Wyoming; the U.S. Fish and Wildlife Service (FWS); and other federal agencies to assure its long-term viability throughout its historic range.

¹¹ Section 4(e) condition no. 14, which relates to CR cutthroat trout, requires Garkane to consult with the “TCC” in developing the details of aquatic resource management measures. The TCC is a Technical Coordination Committee comprised of representatives of Garkane, the Forest Service, and the Utah Division of Wildlife Resources (DWR) that will be formed pursuant to the agreement filed on April 7, 2006, resolving Garkane’s appeal pursuant to EPAct.

implementing the Adaptive Environmental Monitoring and Management Program; and (3) evaluating future potential mitigation for CR cutthroat trout.

20. Conditions nos. 14(3) and 14(7)¹² provide for streamflow and temperature monitoring in the West Fork, Bear Creek, and the mainstem of Boulder Creek above and below the tailrace of the downstream Lower Boulder Creek Project No. 10502,¹³ in addition to locations on the East Fork. Staff's analysis in the final EA shows that water temperature and streamflow in those locations would exhibit little or no change as a result of minimum flow releases downstream from the East Fork dam. Therefore, the benefits of monitoring streamflow and temperature in these locations would not justify the cost of the monitoring.

21. Condition no. 14(7) requires Garkane to fund fish population monitoring in the Boulder Creek drainage to provide information for the establishment of the Adaptive Environmental Monitoring and Management Program's biological objectives for CR cutthroat trout and future monitoring for the attainment of those biological objectives. Staff's analysis in the final EA showed that: (1) there is insufficient evidence to show a clear, scientifically based relationship between physical habitat availability and the ability to set quantifiable goals for trout numbers and biomass; (2) the evidence in the project record for the Boulder Creek drainage does not show a predictable relationship between increased streamflow and quantifiable trout numbers and biomass; and (3) the ability to reliably meet any biological objectives for CR cutthroat trout is dependent upon a variety of factors, including those outside of the control of Garkane, such as droughts, floods, predation, competition, and disease.

22. Staff found in the final EA that information in the record only supports a flow recommendation on the basis of increased aquatic habitat availability, and not increased fish numbers or biomass, which tend to be unpredictable for the reasons noted above. Further, staff found that monitoring for additional factors affecting the attainment of any biological objectives would be costly, and would not necessarily differentiate between project and non-project factors responsible for the future status of the fish population in terms of numbers or biomass. Therefore, staff concluded that the benefits of implementing the Adaptive Environmental Monitoring and Management Program would not be justified by the cost of this measure.

¹² Condition no. 14 is composed of nine conditions.

¹³ The Lower Boulder Creek Project No. 10502 receives flows from the Boulder Creek Project's re-regulating pond and discharges flows into the mainstem of Boulder Creek.

23. Condition no. 14(8) provides for Garkane to spend up to a capital cost of \$135,000 on either the improvement or re-establishment of CR cutthroat trout in streams outside of the Boulder Creek drainage, or on other activities located within the Boulder Creek drainage for improving aquatic habitat connectivity. Staff's analysis in the final EA showed that the following factors militate against adopting future potential fishery enhancement: (1) it is uncertain whether any out-of-basin improvements would be necessary, or if improvement is deemed necessary, what specific measures would be implemented, so the merits of the measures cannot be evaluated; and (2) the trout populations to be improved or re-established would be located outside the influence of the project and the nexus of these measures to project effects is undetermined. Therefore, staff found in the final EA that there was no justification for adopting the measure.¹⁴

WATER QUALITY CERTIFICATION

24. Under section 401(a) of the Clean Water Act (CWA),¹⁵ the Commission may not issue a license authorizing the construction or operation of a hydroelectric project unless the state water quality certifying agency has either issued a water quality certification for the project or has waived certification. Section 401(d) of the CWA¹⁶ provides that any conditions of the certification shall become conditions of any federal license that authorizes construction and operation of the project.¹⁷

25. On February 24, 2004, Garkane applied to the Utah Department of Environmental Quality (DEQ) for water quality certification under section 401 of the CWA. In a letter dated March 22, 2004, and filed by Garkane on April 7, 2004, Utah DEQ issued water quality certification for the project, with no conditions.

¹⁴ Should the Forest Service, pursuant to condition no. 14(8), require Garkane to implement additional measures that would result in changes to project facilities or operations, Garkane must first receive Commission approval to implement such measures after the filing of an application to amend this license.

¹⁵33 U.S.C. § 1341(a)(1) (2000).

¹⁶33 U.S.C. § 1341(d) (2000).

¹⁷*See American Rivers v. FERC*, 229 F.3d 99 (D.C. Cir. 1997).

SECTION 18 FISHWAY PRESCRIPTIONS

26. Section 18 of the FPA¹⁸ provides that the Commission shall require construction, maintenance, and operation by a licensee of such fishways as may be prescribed by the Secretaries of Commerce or the Interior, as appropriate.

27. In a letter filed November 23, 2005, Interior requested that authority be reserved to the FWS to prescribe fishways under section 18 of the FPA during the term of the new license. Consistent with Commission policy, Article 405 of this license reserves the Commission's authority to require fishways that may be prescribed by FWS for the project.

THREATENED AND ENDANGERED SPECIES

28. Section 7(a) of the Endangered Species Act of 1973 (ESA)¹⁹ 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 designated critical habitat.

29. The bald eagle and Mexican spotted owl were identified as federally listed species that may occur in the project area.²⁰ The EA found that the proposed project may affect, but would not be likely to adversely affect, the bald eagle and Mexican spotted owl. On January 10, 2007, Commission staff requested FWS' concurrence with this finding. On January 24, 2007, FWS concurred with staff's determination. Article 407 requires Garkane to implement its avian protection plan at the project to protect raptors and other large birds from electrocution or collision with project powerlines.

¹⁸16 U.S.C. § 811 (2000).

¹⁹16 U.S.C. § 1536(a) (2000).

²⁰ The bald eagle was removed from the list of threatened and endangered species on July 9, 2007. *See* Federal Register vol. 72, no. 130, pp. 37346-72.

RECOMMENDATIONS OF FEDERAL AND STATE FISH AND WILDLIFE AGENCIES

A. Recommendations Pursuant to Section 10(j) of the FPA

30. Section 10(j)(1) of the FPA²¹ requires the Commission, when issuing a license, to include conditions based on recommendations by federal and state fish and wildlife agencies submitted pursuant to the Fish and Wildlife Coordination Act,²² to “adequately and equitably protect, mitigate damages to, and enhance fish and wildlife (including related spawning grounds and habitat)” affected by the project.

31. In response to the September 30, 2005 public notice requesting final recommendations, terms and conditions, and prescriptions, Interior filed fourteen recommendations pursuant to section 10(j) of the FPA.²³ Four recommendations were determined to be outside the scope of section 10(j) and are discussed in the next section of this license order. This license includes conditions consistent with six of the remaining ten recommendations that are within the scope of section 10(j). These include recommendations to: (1) develop an operating plan that would implement the required minimum flow releases (Appendix A, condition no. 14(3)); (2) construct, operate, and maintain streamflow release facilities at staff-recommended locations in the East Fork to record the required minimum flows (Appendix A, condition no. 14(3)); (3) construct, operate, and maintain temperature monitoring devices in the East Fork bypassed reach during staff-recommended time periods (Appendix A, condition no. 14(3)); (4) construct and maintain two fish migration barriers on the mainstem of Boulder Creek below the East Fork and West Fork confluence (Appendix A, condition no. 14(5)); (5) control noxious weeds (Appendix A, condition no. 6); and (6) implement an avian protection plan (Article 406).

32. If the Commission believes that any such recommendation may be inconsistent with the purposes and requirements of Part I of the FPA or other applicable law, section 10(j)(2) requires the Commission and the agencies to attempt to resolve any such inconsistency, giving due weight to the recommendations, expertise, and statutory responsibilities of such agencies.²⁴ If the Commission still does not adopt a

²¹16 U.S.C. § 803(j)(1) (2000).

²²16 U.S.C. § 661 *et seq.* (2000).

²³ Utah DWR did not submit recommendations under section 10(j) of the FPA.

²⁴ 16 U.S.C. § 803(j)(2) (2000).

recommendation, it must explain how the recommendation is inconsistent with part I of the FPA or other applicable law and how the conditions imposed by the Commission adequately and equitably protect, mitigate damages to, and enhance fish and wildlife resources.

33. Commission staff made an initial determination that the following recommendations by Interior may be inconsistent with sections 4(e) and 10(a) of the FPA: (1) providing a minimum flow of 2 cfs for a period of eight years below the West Fork reservoir to achieve identified biological objectives for CR cutthroat trout, and if those objectives are not met, increasing the minimum flow to 2.75 cfs; (2) providing a minimum flow of 2 cfs for a period of eight years below the East Fork reservoir to achieve identified biological objectives for CR cutthroat trout, and if those objectives are not met, increasing the minimum flow to 6 cfs; and (3) developing and implementing an adaptive management monitoring program that would include fish population monitoring to establish biological objectives for CR cutthroat trout. Commission staff also made an initial determination that Interior's recommendation to construct, operate, and maintain flow release and monitoring facilities in the West Fork, and construct, operate, and maintain temperature monitoring devices above and below the East and West Fork reservoirs may be inconsistent with section 313(b) of the FPA.

34. Staff sent a letter to Interior on December 20, 2006, informing Interior of the inconsistencies. On February 23, 2007, staff held a section 10(j) meeting with Interior's FWS to attempt to resolve the inconsistencies. During the meeting staff did not resolve any inconsistencies, but requested that Interior file more information in support of its recommendations for reanalysis in the final EA. By letter filed March 27, 2007, Interior filed additional information in support of its recommendations.

West Fork Bypassed Reach Instream Flows

35. The original license did not require Garkane to release minimum flows downstream of any of the project facilities; therefore, Garkane typically diverted all of the streamflow at the two project diversions, resulting in reduced or no flow in the bypassed reaches of the West Fork, East Fork, and mainstem of Boulder Creek.²⁵ Interior recommends minimum flows of 2 cfs, as measured at the discharge point of

²⁵ The bypassed reaches of the East Fork and the West Fork are each about four miles long. The bypassed reach of the mainstem of Boulder Creek is about 2.5 miles long.

the West Fork reservoir, for eight years after license issuance, increasing thereafter to 2.75 cfs in the West Fork if Interior's specified biological objectives are not met. As discussed in the final EA, providing a minimum flow of up to 2.75 cfs would increase trout fry, juvenile, and adult habitat in the West Fork bypassed reach, but would also adversely affect BIC's ability to divert an equivalent amount of flow from multiple diversion points in the project area. The 2.75-cfs flow release would result in an annualized cost of \$107,770 in lost generation and \$46,590 in equipment upgrades to provide the flow.

36. This license requires Garkane to release a minimum flow of up to 2 cfs in the East Fork (condition no. 14(1)), carry out non-native fish eradication (Article 402), construct and maintain fish migration barriers (condition no. 14(5)), and implement a public education program (Article 404). These measures will adequately protect and enhance CR cutthroat trout populations in the project area.

37. For the above reasons, I conclude, in accordance with FPA section 10(j)(2)(A), that Interior's recommendation is inconsistent with the public interest and comprehensive planning standards of sections 4(e) and 10(a) of the FPA. In accordance with section 10(j)(2)(B) of the FPA, I find that the measures required by this license will adequately and equitably protect, mitigate damages to, and enhance fish and wildlife resources affected by the project.

East Fork Bypassed Reach Instream Flows

38. Interior recommends that Garkane provide a minimum instantaneous flow of 2 cfs for a period of eight years below the East Fork reservoir, increasing the flows to 6 cfs if monitoring shows that biological objectives have not been met in three of the first eight years after license issuance, and maintaining the 6-cfs flow over the term of the license. As discussed in the final EA,²⁶ the minimum flow provisions of condition no. 14(1) would provide similar environmental benefits (*i.e.*, improved aquatic and riparian habitat conditions for CR cutthroat trout and sensitive plants and wildlife) to Interior's recommendation, but at a substantially lower annualized cost (\$40,000 as compared to \$172,330).

39. This license requires Garkane to release a minimum flow of up to 2 cfs below the East Fork reservoir as specified in condition no. 14(1). This measure will ensure that CR cutthroat trout habitat in the East Fork is enhanced.

²⁶ See final EA at page 71.

40. For the above reasons, I conclude, in accordance with FPA section 10(j)(2)(A), that Interior's recommendation is inconsistent with the public interest and comprehensive planning standards of sections 4(e) and 10(a) of the FPA. In accordance with section 10(j)(2)(B) of the FPA, I find that the measures required by this license will adequately and equitably protect, mitigate damages to, and enhance fish and wildlife resources affected by the project.

Flow and Temperature Monitoring

41. Interior recommends that Garkane install and maintain flow and temperature monitoring devices upstream and downstream of the West Fork reservoir, and install temperature monitoring devices upstream and downstream of the East Fork reservoir. As discussed in the final EA, no changes in project operation will occur in the West Fork that would change the existing flow regime, or cause adverse temperature effects. Additionally, the 2-cfs instream flow release in the East Fork required by condition no. 14(1) will further reduce the likelihood of any adverse temperature effects in the East Fork and mainstem. Flow and water temperature monitoring in the West Fork, and water temperature monitoring in the East Fork upstream and downstream of the project would, therefore, serve no specific project purpose or mitigate for a specific project effect.

42. This license requires Garkane to monitor minimum instream flow releases and temperature in the reaches of the East Fork affected by the project (condition no. 14(3)), release a minimum flow in the East Fork (condition no. 14(1)), carry out non-native fish eradication (Article 402), construct and maintain fish migration barriers (condition no. 14(5)), and implement a public education program (Article 404). These measures will ensure compliance with the flow release requirements of condition no. 14(1), provide information on the water temperature response to the minimum instream flow releases, and result in the enhancement of CR cutthroat trout populations in the reaches of the Boulder Creek watershed affected by the project.

43. For these reasons, I conclude, in accordance with FPA section 10(j)(2)(A), that Interior's recommendation is inconsistent with the substantial evidence standard of section 313(b) of the FPA. In accordance with section 10(j)(2)(B) of the FPA, I find that the measures required by this license will adequately and equitably protect, mitigate damages to, and enhance fish and wildlife resources affected by the project.

Adaptive Management Monitoring Plan

44. Interior recommends that Garkane develop an adaptive management and monitoring plan that would include provisions for monitoring fish populations. As discussed in the final EA, there would be no benefit to monitoring fish populations to

determine if the required minimum flow releases achieve Interior's specific CR cutthroat trout population sizes in the project area. Staff's analysis in the final EA concluded that there is no mathematical relationship by which one could predict trout population sizes from a given flow. Staff's analysis in the final EA notes that trout populations are not only affected by the amount of flow in their environment, but other stressors as well, such as disease, harvest, predation, and competition with other species. Therefore, I conclude that the proposed fish population monitoring would be unnecessary and not worth the estimated \$940 annualized cost to prepare the plan and unknown costs to implement the plan.

45. This license requires Garkane to implement: minimum instream flows (condition no. 14(1)); non-native fish eradication and native fish restocking (Article 402); fish migration barriers (condition no. 14(5)); and a public education program (Article 404). These measures will provide for the adequate protection and enhancement of CR cutthroat trout populations in the project area.

46. For the above reasons, I conclude, in accordance with FPA section 10(j)(2)(A), that Interior's recommendation is inconsistent with the public interest and comprehensive planning standards of sections 4(e) and 10(a) of the FPA. In accordance with section 10(j)(2)(B) of the FPA, I find that the measures required by this license will adequately and equitably protect, mitigate damages to, and enhance fish and wildlife resources affected by the project.

B. Recommendations Pursuant to Section 10(a)(1) of the FPA

47. Interior made four recommendations that are not measures to protect, mitigate damage to, or enhance fish and wildlife: (1) providing flow and temperature monitoring data to the agencies; (2) organizing and consulting with an adaptive management monitoring technical coordination committee; (3) providing funding for environmental compliance and time necessary to complete chemical treatment of non-native fish and for CR cutthroat trout restoration efforts; and (4) conducting studies to determine the effects of minimum instream flow releases on riparian vegetation. Consequently, I do not consider these recommendations under section 10(j) of the FPA. Instead, I consider these recommendations under the broad public-interest standard of FPA section 10(a)(1).^{27, 28}

²⁷ 16 U.S.C. § 803(a)(1)(2000).

²⁸ Section 10(a)(1) requires that any project for which the Commission issues a license shall be best adapted to a comprehensive plan for improving or developing a

48. I have adopted Interior's recommendation for Garkane to provide minimum flow release and temperature monitoring data annually to FWS, Utah DWR, and the Forest Service, but only for data obtained at temperature and flow monitoring locations in the East Fork bypassed reach (Article 403).

49. I have adopted Interior's recommendation that Garkane provide for the chemical treatment of non-native fish and CR cutthroat trout restoration efforts on the East and West Forks of Boulder Creek (Article 402).

50. I did not adopt Interior's recommendation that Garkane organize and consult with an adaptive management monitoring technical coordination committee composed of Garkane, FWS, Utah DWR, and the Forest Service because this license does not require Interior's adaptive management provisions.²⁹

51. I did not adopt Interior's recommendation that Garkane conduct pre- and post-instream flow release studies to determine the effects of the minimum instream flow releases on riparian vegetation along the 0.5-mile-long reaches below the East and West Fork reservoirs, and based on the study results, develop mitigation measures over the term of the license. With regard to the West Fork bypassed reach, the final EA concluded that there would be no change to the flows in the reach relative to existing conditions and therefore, there is no basis for conducting studies of the effects of flow changes on riparian vegetation. With regard to the East Fork bypassed reach, the final EA concluded that although monitoring would document any changes in riparian vegetation attributes in the reach due to instream flow releases, the benefits of the documentation would not be justified by the cost to conduct the monitoring.

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.

²⁹ Although this license does not adopt the FWS' recommended adaptive management monitoring program, ordering paragraph D and Appendix A require Garkane to develop an Adaptive Environmental Monitoring and Management Plan, which is similar to the FWS' recommended adaptive management monitoring program. Article 401 includes a requirement for Garkane to consult with the FWS in the development of the Adaptive Environmental Monitoring and Management Plan.

NATIONAL HISTORIC PRESERVATION ACT

52. The National Historic Preservation Act (NHPA)³⁰ requires federal agencies to manage cultural resources under their jurisdiction and authorizes the Secretary of the Interior to maintain the National Register of Historic Places (National Register). Section 106 of the NHPA and its implementing regulations³¹ require federal agencies to take into account the effect of any proposed undertaking on properties listed or eligible for listing in the National Register (defined as historic properties) and to afford the Advisory Council on Historic Preservation a reasonable opportunity to comment on the undertaking.

53. In a letter filed on March 9, 2005, the Utah State Historic Preservation Officer recommended a determination of No Adverse Effect on cultural resources for the Boulder Creek Project. Garkane has developed a Historic Properties Management Plan (HPMP) to resolve any potential project-related adverse effects for the term of this license. Article 407 requires Garkane to implement the HPMP.

STATE AND FEDERAL COMPREHENSIVE PLANS

54. Section 10(a)(2) of the FPA requires the Commission to consider the extent to which a project is consistent with federal or state comprehensive plans for improving, developing, or conserving a waterway or waterways affected by the project. Under section 10(a)(2)(A), federal and state agencies filed nine comprehensive plans that address various resources in Utah. Of these, the staff has identified and reviewed four comprehensive plans³² that are relevant to the Boulder Creek Hydroelectric Project. No conflicts were found.

OTHER ISSUES

A. Water Rights

55. Garkane presently holds a water right (priority date 1957) for the diversion and non-consumptive use of a combined 48.1 cfs of water from the West Fork and East Fork for power generation. BIC has the most senior water rights (priority dates

³⁰16 U.S.C. § 470 *et seq.* (2000).

³¹36 C.F.R. Part 800 (2006).

³²The list of applicable plans can be found in section IX of the final EA for the project issued May 4, 2007.

varying from 1890 to 1947) in the Boulder Creek basin for irrigation and stock watering purposes.

56. Flows released by BIC from its Spectacle Lake reservoir on the West Fork are conveyed from the West Fork reservoir via the project pipeline to join East Fork flows in the East Fork reservoir, and the combined streamflows enter the project penstock. BIC diverts the Peterson powerhouse's tailrace discharges into its Peterson ditch, and the Boulder powerhouse's tailrace discharges from the project re-regulating pond into its Thompson and Porcupine ditches, for use by BIC shareholders on agricultural lands adjacent to the established irrigation ditches and canals. The project's pipeline and penstock have allowed BIC to reduce water losses from seepage into the streambed that could occur if the water were conveyed to irrigation ditches via natural stream channels. Garkane's studies indicate that seepage losses occur in the West Fork, but the East Fork is subject to flow accretion, rather than seepage losses.

57. In a May 24, 2005 letter filed by Garkane on June 6, 2005, BIC stated that although it supports the relicensing of the project, it opposes any changes in project water flows or operations. To address BIC's concern, the Forest Service 4(e) condition no. 14(1) states that Garkane shall not be obligated to release instream flows to the extent that a court of competent jurisdiction rules that the releases would impair existing water rights or would require altering, amending, or restricting BIC's senior water rights. However, should Garkane wish to change its minimum flow releases as a result of a court decision, it must first seek an amendment of its license from the Commission.

B. Scheduling and Reporting Requirements

58. In Appendix A, there are certain 4(e) conditions requiring Garkane to prepare for approval by specified entities drawings for East Fork water release equipment and flow monitoring devices and fish migration barrier design; and plans for adaptive environmental monitoring and management, operation and maintenance, safety during construction, recreation and access management, and scenery management. However, the conditions do not provide for Commission approval of the plans and implementation schedules. Therefore, Article 401 requires Garkane to file the plans and implementation schedules with the Commission for approval.

C. Non-Native Fish Eradication and Restocking

59. Condition no. 14(4) requires Garkane to provide \$20,000 to prepare the environmental analysis and documentation necessary to eradicate non-native fish and restock native CR cutthroat trout in a reach of stream extending from a natural barrier on the East Fork downstream to fish migration barriers to be installed on the mainstem

of Boulder Creek about 0.5 miles downstream of the confluence of the East and West Forks (condition no. 14(5)). In the final EA, Commission staff recommended that, instead of simply contributing \$20,000 towards the eradication work, Garkane should be responsible for implementing the fish eradication work. Although I have no objection to Garkane entering into a cooperative agreement to undertake this measure, Garkane will ultimately be responsible for ensuring that the fish eradication and restocking program is completed. Therefore, Article 402 requires Garkane to prepare and implement a plan to carry out the non-native fish eradication and re-stocking program.

D. Operational Compliance Monitoring

60. Condition no. 14(3) requires Garkane to monitor minimum instream flow releases and water temperatures in the East Fork bypassed reach. In the final EA, staff further recommended that Garkane annually provide the monitoring data to the agencies. Article 403 requires Garkane to prepare an operational compliance monitoring plan that includes provisions for: (1) monitoring streamflows and water temperatures; (2) maintaining a log of project operations; and (3) providing East Fork bypassed reach streamflow and temperature monitoring data annually to the agencies.

E. Colorado River Cutthroat Trout Public Education Program

61. Condition no. 14(6) requires Garkane to provide up to \$10,000 to fund a regional public education program developed by the Forest Service or Utah DWR to help increase support for re-establishing CR cutthroat trout in regional waters. In the final EA, Commission staff recommended that Garkane apply the program to project waters, and that it be fully responsible for implementing the program, notwithstanding the \$10,000 limitation on expenditures included in the mandatory condition.

62. Although I agree with the finding in the EA that a CR cutthroat trout public education program for the project would be beneficial, the Commission has no jurisdiction over either the Forest Service or Utah DWR to ensure the timely development of a regional program that can be applied to the project area. Therefore, Article 404 requires Garkane to develop and implement a Commission-approved CR cutthroat trout public education program plan specific to the project area. Article 404 further requires that Garkane develop the plan in consultation with the Forest Service, Utah DWR, and FWS.

F. Avian Protection Plan

63. Garkane has in place a system-wide plan³³ to protect birds from electrocution or collision at its transmission and distribution system's powerlines, including those that are project facilities. Article 406 requires Garkane to implement the avian protection plan at the Boulder Creek Project.

G. Administrative Conditions

64. The Commission collects annual charges from licensees for the administration of the FPA. Article 201 provides for the collection of funds for administration of the FPA and use and occupancy of U.S. lands.

65. The Commission requires that for new major licenses, licensees must set up and maintain an amortization reserve account upon license issuance. Article 204 requires the establishment of the account.

66. Some projects directly benefit from headwater improvements that were constructed by other licensees, the United States, or permittees. Article 205 requires Garkane to reimburse such entities for these benefits if they were not previously assessed and reimbursed.

H. Exhibit F and G Drawings

67. This license approves Garkane's exhibit F drawings filed on April 29, 2005, and August 18, 2005. The Commission requires licensees to file sets of approved project drawings on microfilm and in electronic file format. Article 202 requires the filing of these drawings.

68. The exhibit G drawings Garkane filed as part of its license application do not conform to the Commission's regulations. Section 4.41(h)(2) of the Commission's regulations requires that a project boundary enclose all project works and other features. Exhibits G-1 and G-2 do not show the location and the inclusion in the project boundary of the two fish barriers that Garkane proposes to construct and maintain on Boulder Creek. Exhibit G-3 does not show the entire shoreline of the West Fork reservoir or clearly show a project boundary around all the project facilities at West Fork reservoir, but rather a solid project boundary line around the part of the

³³ Garkane filed its "Avian Protection Plan," dated February 2006, on January 29, 2007, attached as appendix A to its comments on the draft EA.

reservoir on federal lands and a dashed private property line around the part located on Garkane's lands, including the dam and spillway.

69. For these reasons, I am not approving the exhibit G drawings at this time. Article 203 requires Garkane to file within 90 days from license issuance revised exhibit G drawings that include within the project boundary the West Fork reservoir and associated project facilities. Article 203 further requires Garkane to file within one year of license issuance revised exhibit G drawings that include the fish barriers and the locations of the streamflow and temperature monitoring devices required by conditions nos. 14(3) and 14(7). The lands on which the monitoring devices will be located, however, need not be included within the project boundary because of the small area the devices will occupy.³⁴

I. Revised Exhibits

70. Article 301 requires Garkane to file revised exhibits A, F, or G within 90 days of the completion of the construction of facilities, modification of project boundaries, or other actions required by this license, as appropriate, to show those project facilities and lands as built or modified.

J. Review of Final Plans and Specifications

71. Article 302 requires Garkane to provide the Commission's Division of Dam Safety and Inspections San Francisco Regional Office (D2SI – SFRO) with final contract drawings and specifications, a quality control inspection program, temporary construction emergency action plan, and erosion and sediment control plan for the construction of project facilities required by this license, together with a supporting design report consistent with the Commission's engineering guidelines.

72. Article 303 requires Garkane to provide the Commission's D2SI – SFRO with cofferdam construction drawings.

K. Use and Occupancy of Project Lands and Waters

73. Requiring a licensee to obtain prior Commission approval for every use or occupancy of project land would be unduly burdensome. Therefore, Article 408

³⁴ The Commission has stated that small areas outside of the project boundary that are needed for project purposes, including those on lands of non-licensees, need not be within the project boundary. See *PacifiCorp*, 80 FERC ¶ 61,334 (1997).

allows Garkane to grant permission, without prior Commission approval, for the use and occupancy of non-federal project lands for such minor activities as landscape plantings. Such uses must be consistent with the purpose of protecting and enhancing the scenic, recreational, and environmental values of the project.

APPLICANT'S PLANS AND CAPABILITIES

74. In accordance with sections 10(a)(2)(c) and 15(a) of the FPA,³⁵ staff evaluated Garkane's record as a licensee with respect to the following: (a) conservation efforts; (b) compliance history and ability to comply with the new license; (c) safe management, operation, and maintenance of the project; (d) ability to provide efficient and reliable electric service; (e) need for power; (f) transmission service; (g) cost effectiveness of plans; and (h) actions affecting the public. I accept the staff's findings in each of the following areas.

A. Conservation Efforts

75. Section 10(a)(2)(c) of the FPA³⁶ requires 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.

76. Garkane, in cooperation with Deseret Power, recently began a "Green Energy" program that sells "Green Credits" to their customers in an effort to support the development of alternative resources of energy. Garkane sells high-efficiency light bulbs and has provided, in the past, replacement high-efficiency hot water heaters to its customers at cost. Garkane also offers residential and commercial energy audits to its customers. These programs show that Garkane is making an effort to conserve electricity and has made a satisfactory good faith effort to comply with section 10(A)(2)(c) of the FPA.

B. Compliance History and Ability to Comply with the New License

77. Garkane has operated the project continuously for the past 50 years. Based on a review of Garkane's compliance with the terms and conditions of the existing license,

³⁵ 16 U.S.C. §§ 803(a)(2)(C) and 808(a) (2000).

³⁶ 16 U.S.C. § 803(a)(2)(c) (2000).

staff finds that Garkane's overall record of making timely filings and compliance with its license is satisfactory. Therefore, staff concludes that Garkane can satisfy the conditions of a new license.

C. Safe Management, Operation, and Maintenance of the Project

78. Staff has reviewed Garkane's management, operation, and maintenance of the project pursuant to the requirement of 18 C.F.R. Part 12 and the Commission's Engineering Guidelines and periodic Independent Consultant's Safety Inspection Reports. Staff concludes that the dams and other project works are safe, and that there is no reason to believe that Garkane cannot continue to safely manage, operate, and maintain these facilities under a new license.

D. Ability to Provide Efficient and Reliable Electric Service

79. Staff has reviewed Garkane's plans and its ability to operate and maintain the project in a manner most likely to provide efficient and reliable electric service. Staff's review indicates that Garkane inspects the Peterson powerhouse once a week and the Boulder powerhouse every day to ensure that the turbine-generator units continue to perform in an optimal manner, schedules maintenance to minimize effects on energy production, and since the project has been in operation, has undertaken several initiatives to ensure the project is able to operate reliably into the future. Staff concludes that Garkane is capable of operating the project to provide efficient and reliable electric service in the future.

E. Need for Power

80. Garkane serves about 6,000 customers in the majority of Garfield and Kane Counties, Utah and portions of Coconino and Mojave Counties, Arizona. The population in the Garfield County region is expected to grow at an annual rate of 1.8 percent through the year 2030. The need for power will increase as the population increases in the area.

81. The project is located in the Northwest Power Pool Area (NWPP) of the Western Systems Coordinating Council region of the North American Electric Reliability Council. The NWPP area includes all or major portions of the states of Washington, Oregon, Idaho, Wyoming, Montana, Nevada, and Utah, as well as a small portion of northern California and the Canadian provinces of British Columbia and Alberta. The peak demand and annual energy requirements for the NWPP area are projected to grow at an average annual compound rate of 1.1 percent and 1.5 percent, respectively, over the ten-year planning period from 2004 through 2013.

82. The future adequacy of the generation supply in the NWPP area will depend on how many of the planned projects, consisting mostly of natural-gas-fired, combined-cycle combustion turbines, actually get built. With planned generation additions of 10,091 MW, resource capacity margins for the winter-peaking area will range between 35.2 to 46.0 percent of firm peak demand over the next ten-year planning period.

83. The power from the project will continue to be useful in meeting a part of the regional need for power. The project will displace some of the fossil-fueled electric power generation that the regional utilities now use, and thereby conserve nonrenewable resources and reduce the emission of noxious byproducts caused by fossil fuel combustion.

F. Transmission Services

84. The project includes about 4,725 feet of 12.47/7.2-kV transmission line extending from the Peterson powerhouse to the project substation and about 100 feet of 2.4-kV transmission line from the Boulder powerhouse to the substation. Garkane proposes no changes that would affect its own or other transmission services in the region. The project and project transmission lines are important elements in providing power and voltage control to Garfield and Kane Counties, Utah and portions of Coconino and Mojave Counties, Arizona, as well as the region.

G. Cost Effectiveness of Plans

85. Garkane plans to make facility and operational modifications, including releasing a minimum flow into the East Fork and installing water release equipment at the East Fork dam, flow and temperature monitoring devices at a number of locations, and two fish barriers, to improve and enhance environmental resources affected by the project. Based on Garkane's record as an existing licensee, staff concludes that these plans are likely to be carried out in a cost-effective manner.

H. Actions Affecting the Public

86. Garkane has provided numerous opportunities for public involvement in the development of its application for a new license for the project. During the previous license period and with the environmental enhancement measures proposed for the relicense, Garkane provided facilities to enhance public use of project lands and features. Garkane has also operated the project with consideration for the protection of downstream uses of Boulder Creek. Garkane uses the project to help meet local power needs and pays taxes that contribute to the cost of public services.

PROJECT ECONOMICS

87. In determining whether to issue a new license for an existing hydroelectric project, the Commission considers a number of public interest factors, including the economic benefits of project power. Consistent with the Commission's approach to economic analysis as described in Mead,³⁷ Commission staff bases its analysis on 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 basis of staff'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.

88. In applying this analysis to the project, the staff considered no action and action alternatives. As proposed by Garkane, the levelized annual cost of operating the project would be \$772,650 or \$33.69/MWh. The project would generate an estimated average of 22,939 MWh of energy annually. When the staff's estimated average generation is multiplied by the alternative power cost of \$35.00/MWh,³⁸ staff gets a total value of the project's power of \$823,000 in 2005 dollars. To determine whether the proposed project is currently economically beneficial, staff subtracts the project's cost from the value of the project's power.³⁹ Therefore, in the first year of operation, the project would cost \$50,350 or \$2.19/MWh less than the likely alternative cost of power.

89. As licensed herein with the mandatory conditions and staff measures, the levelized annual cost of operating the project will be \$776,710 or \$33.86/MWh. Based on the same alternative power cost and annual generation, the project will cost \$46,290 or \$2.02/MWh less than the likely alternative cost of power in the first year of operation.

³⁷ *Mead Corporation, Publishing Paper Division*, 72 FERC ¶61,027 (1995).

³⁸ The alternative power cost of \$35.00/MWh is based on Bonneville Power Administration's 2002 Wholesale Power Rate Schedules (revised May 2004).

³⁹ Details of staff's economic analysis for the project as licensed herein and for various alternatives are included in the final EA issued in May 2007.

COMPREHENSIVE DEVELOPMENT

90. Sections 4(e) and 10(a)(1) of the FPA⁴⁰ require the Commission, in acting on license applications, to give equal consideration to the developmental and environmental uses of the waterway on which a project is located. 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.

91. The final EA for the project contains background information, analysis of effects, and support for related license articles. I conclude, based on the record for this proceeding, including the EA and the comments thereon, that licensing the Boulder Creek 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 constructed, operated, and maintained in accordance with the requirements of this license.

92. Based on the staff's independent review and evaluation of the Boulder Creek Project, recommendations from resource agencies and other stakeholders, and the no-action alternative, as documented in the EA, I have selected the proposed Boulder Creek Project, with staff-recommended measures and required mandatory conditions, and find that it is best adapted to a comprehensive plan for improving or developing Boulder Creek.

93. I selected this alternative because: (1) issuance of a new license will serve to provide a beneficial, dependable, and an inexpensive source of electric energy; (2) the required environmental measures will protect and enhance fish and wildlife resources, water quality, recreational resources, and historic properties; and (3) the 4.3 MW of capacity from renewable resources will offset the use of fossil-fueled, steam-electric generating plants, thereby conserving nonrenewable resources and reducing atmospheric pollution.

LICENSE TERM

94. Section 15(e) of the FPA provides that any new license issued shall be for a term that the Commission determines to be in the public interest, but not less than 30 years or more than 50 years. The Commission's policy is to coordinate to a reasonable

⁴⁰16 U.S.C. §§ 797(e) and 803(a)(1) (2000).

extent the license expiration dates of projects in a river basin so that subsequent relicensing proceedings can also be coordinated.⁴¹ The license for Garkane's Lower Boulder Creek Project No. 10502 will expire on June 30, 2040. Therefore, consistent with Commission policy, I am issuing a license for the Boulder Creek Project with an expiration of June 30, 2040, a term of 32 years and ten months.⁴²

The Director orders:

(A) This license is issued to Garkane Energy Cooperative, Inc. (licensee) to operate and maintain the Boulder Creek Project for a period of 32 years and ten months, effective the first day of the month in which this order is issued. 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 interests in those lands, described in the project description and the project boundary discussion of this order.

(2) Project works consisting of: (a) a 20-foot-high, 30-foot-long earth-filled diversion dam on the West Fork of Boulder Creek, creating the 2-acre West Fork reservoir; (b) a buried 27-inch-diameter, 17,600-foot-long concrete pipeline from the West Fork reservoir to the East Fork reservoir; (c) a 25-foot-high, 127-foot-long earth-filled dam on the East Fork of Boulder Creek, creating the 3.8-acre East Fork reservoir; (d) approximately 4.2 miles of 31.5- to 34-inch-diameter steel penstock extending from the East Fork reservoir to the Boulder powerhouse; (e) the Boulder powerhouse, containing three impulse turbines connected to three 1,400-kilowatt (kW) generators; (f) an additional powerhouse, the Peterson powerhouse, located about 3.5 miles from the East Fork dam, and containing one turbine connected to a 100-kW generator; (g) a

⁴¹ In issuing new and subsequent licenses, the Commission will coordinate the expiration dates of licenses to the maximum extent possible, to maximize future consideration of cumulative impacts at the same time in contemporaneous proceedings at relicensing. *See* 18 C.F.R. § 2.23 (2006).

⁴² This license term is also consistent with a provision of an agreement reached between the Forest Service and Garkane on disputed section 4(e) conditions under EPAct.

Project No. 2219-020

27

substation; (h) a 12.47/7.2-kilovolt (kV) transmission/communications line about 4,725 feet long, extending from the Peterson powerhouse to the substation; (i) a 100-foot-long, 2.4-kV transmission line extending from the substation to the Boulder powerhouse; (j) a 2-acre re-regulating pond with gates and ditch inlets to divert water to the Boulder Irrigation Company; and (k) appurtenant facilities.

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

Exhibit A: Pages A-1 through A-4 and A-17 filed on August 18, 2005.

Exhibit F: The following drawings of exhibit F filed on April 29, 2005:

<u>Exhibit F Drawing</u>	<u>FERC No. 2219-</u>	<u>Description</u>
Exhibit F-2	1002	Boulder Plant – Power House
Exhibit F-3	1003	Boulder Sub Station – Plan View
Exhibit F-4	1004	Boulder Sub Station – Profile Views
Exhibit F-5	1005	Boulder Plant – Outlet Design
Exhibit F-12	1012	East Fork Penstock –Miscellaneous Details, Sheet 1
Exhibit F-13	1013	East Fork Penstock – Miscellaneous Details, Sheet 2
Exhibit F-14	1014	East Fork Penstock – Bypass Plan
Exhibit F-15	1015	East Fork Pipeline – Plan and Profile
Exhibit F-16	1016	East Fork Pipeline – Plan and Profile
Exhibit F-17	1017	East Fork Pipeline – Plan and Profile
Exhibit F-18	1018	East Fork Pipeline – Plan and Profile
Exhibit F-19	1019	East Fork Pipeline – Plan and Profile
Exhibit F-20	1020	East Fork Pipeline – Plan and Profile
Exhibit F-21	1021	East Fork Pipeline – Plan and Profile
Exhibit F-22	1022	East Fork Pipeline – Plan and Profile
Exhibit F-23	1023	East Fork Pipeline – Plan and Profile
Exhibit F-24	1024	East Fork Pipeline – Plan and Profile
Exhibit F-25	1025	East Fork Pipeline – Plan and Profile
Exhibit F-26	1026	East Fork Pipeline – Plan and Profile
Exhibit F-27	1027	East Fork Pipeline – Plan and Profile
Exhibit F-28	1028	East Fork Pipeline – Plan and Profile
Exhibit F-29	1029	East Fork Pipeline – Plan and Profile
Exhibit F-30	1030	East Fork Pipeline – Plan and Profile
Exhibit F-31	1031	Peterson Pasture Hydro Plant – Building

Project No. 2219-020

28

		Plan
Exhibit F-36	1036	West Fork Dam – Valve House (cont.)
Exhibit F-37	1037	West Fork Dam – Outlet Structures
Exhibit F-38	1038	West Fork Pipeline – Plan and Profile
Exhibit F-39	1039	West Fork Pipeline – Plan and Profile
Exhibit F-40	1040	West Fork Pipeline – Plan and Profile
Exhibit F-41	1041	West Fork Pipeline – Plan and Profile
Exhibit F-42	1042	West Fork Pipeline – Plan and Profile
Exhibit F-43	1043	West Fork Pipeline – Plan and Profile
Exhibit F-44	1044	West Fork Pipeline – Plan and Profile
Exhibit F-45	1045	West Fork Pipeline – Plan and Profile
Exhibit F-46	1046	West Fork Pipeline – Plan and Profile
Exhibit F-47	1047	West Fork Pipeline – Plan and Profile
Exhibit F-48	1048	West Fork Pipeline – Plan and Profile
Exhibit F-49	1049	West Fork Pipeline – Plan and Profile

Exhibit F: The following drawings of exhibit F filed on August 18, 2005:

<u>Exhibit F Drawing</u>	<u>FERC No. 2219</u>	<u>Description</u>
Exhibit F-1	1001	Boulder Plant – Site Plan
Exhibit F-6	1006	East Fork Dam – Embankment Plan and Sections
Exhibit F-7	1007	East Fork Dam – Pipeline Discharge and Spillway Bridge
Exhibit F-8	1008	East Fork Dam – Intake and Sluice
Exhibit F-9	1009	East Fork Dam – Spillway Intake and Sluice
Exhibit F-10	1010	East Fork Dam – Spillway Intake and Sluice
Exhibit F-11	1011	East Fork Dam – Pier and Handrail Design
Exhibit F-32	1032	West Fork Dam – Diversion Dam and Spillway
Exhibit F-33	1033	West Fork Dam – Diversion Dam and Spillway Sections
Exhibit F-34	1034	West Fork Dam – Stability Analysis and Outlet Sections
Exhibit F-35	1035	West Fork Dam – Valve House
Exhibit F-50	1050	Peterson Pasture Hydro Plant – Building Plan

Project No. 2219-020

29

Exhibit F-51	1051	Peterson Pasture Hydro Plant –Building Details, sheet 2
Exhibit F-52	1052	Peterson Pasture Hydro Plant – Building Details, sheet 3
Exhibit F-53	1053	Peterson Pasture Hydro Plant – Building Details, sheet 4
Exhibit F-54	1054	Peterson Pasture Hydro Plant – Building Details, sheet 5
Exhibit F-55	1055	Peterson Pasture Hydro Plant – Fencing Details

(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) The exhibits A and F described above are approved and made part of this license. The exhibit G drawings filed as part of the application for license do not conform to Commission regulations and are not approved.

(D) This license is subject to the conditions submitted by the U.S. Department of Agriculture, Forest Service under section 4(e) of the FPA, as those conditions are set forth in Appendix A to this order.

(E) This license is also subject to the articles set forth in Form L-1 (Oct. 1975), entitled, “Constructed Major Project Affecting Lands of the United States” (*see* 54 FPC 1799 *et seq.*), and the following additional articles:

Article 201. Administrative Annual Charges. The licensee shall pay the United States annual charges, effective the first day of the month in which the license is issued, and as determined in accordance with the provisions of the Commission’s regulations in effect from time to time for the purposes of:

(1) reimbursing the United States for the cost of administration of Part I of the Federal Power Act. The authorized installed capacity for that purpose is 4,300 kilowatts; and

(2) recompensing the United States for the use, occupancy, and enjoyment of 29.6 acres of its lands (other than for transmission line right-of-way).

Article 202. Exhibit F Drawings. Within 45 days of license issuance, the licensee shall file the approved exhibit F drawings in aperture card and electric file formats.

(a) Three sets of the approved exhibit F drawings shall be reproduced on silver or gelatin 35mm microfilm. All microfilm shall be mounted on type D (3-1/4" x 7-3/8") aperture cards. Prior to microfilming, the FERC Project-Drawing Number (i.e., P-2219-###) shall be shown in the margin below the title block of the approved drawing. After mounting, the FERC Drawing Number shall be typed on the upper right corner of each aperture card. Additionally, the Project Number, FERC Exhibit (i.e., F-1, etc.). Drawing Title, and date of this license shall be typed on the upper left corner of each aperture card.

(b) The licensee shall file two separate sets of exhibit drawings in electronic raster format with the Secretary of the Commission, ATTN: OEP/DHAC. A third set shall be filed with the Commission's Division of Dam Safety and Inspections San Francisco Regional Office. The exhibit F drawings must be identified as CEII material under 18 CFR §388.113(c). Each drawing must be a separate electronic file, and the file name shall include: FERC Project-Drawing Number, FERC Exhibit, Drawing Title, date of this license, and file extension in the following format [P-2219-###, F-1, Description, MM-DD-YYYY.TIF]. Electronic drawings shall meet the following format specification:

IMAGERY – black & white raster file
 FILE TYPE – Tagged Image File Format (TIFF) CCITT Group 4
 RESOLUTION – 300 dpi desired, (200 dpi minimum)
 DRAWING SIZE FORMAT – 24" x 36" (min), 28" x 40" (max)
 FILE SIZE – less than 1 MB desired

Article 203. Exhibit G Drawings. Within 90 days of license issuance, the licensee shall file, for Commission approval, revised Exhibit G drawings, enclosing within the project boundary all principal project works necessary for operation and maintenance of the project. Such project works shall include all lands and project features within the existing project boundary. Within one year of license issuance, the licensee shall file, for Commission approval, revised exhibit G drawings enclosing within the project boundary all principal project works necessary for operation and maintenance of the project, as well as the two fish migration barriers on Boulder Creek downstream of the confluence of the East and West Forks of Boulder Creek, and indicating the sites of streamflow and temperature monitoring devices required by conditions 3 and 7 of 4(e) condition no. 14 in Appendix A of this license. The Exhibit G drawings must comply with sections 4.39 and 4.41 of the Commission's regulations.

Article 204. Amortization Reserve. Pursuant to section 10(d) of the FPA, a specified reasonable rate of return upon the net investment in the project shall be used for determining surplus earnings of the project for the establishment and maintenance of amortization reserves. The licensee shall set aside in a project amortization reserve account at the end of each fiscal year one half of the project surplus earnings, if any, in excess of the specified rate of return per annum on the net investment. To the extent that there is a deficiency of project earnings below the specified rate of return per annum for any fiscal year, the licensee shall deduct the amount of that deficiency from the amount of any surplus earnings, subsequently accumulated, until absorbed. The licensee shall set aside one-half of the remaining surplus earnings, if any, cumulatively computed, in the project amortization reserve account. The licensee shall maintain the amounts established in the project amortization reserve account until further order of the Commission.

The specified reasonable rate of return used in computing amortization reserves shall be calculated annually based on current capital ratios developed from an average of 13 monthly balances of amounts properly included 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 such ratios shall be the weighted average cost of long-term debt and preferred stock for the year, and the cost of common equity shall 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 205. Headwater Benefits. If the licensee's project was directly benefited by the construction work of another licensee, a permittee, or the United States on a storage reservoir or other headwater improvement during the term of the original license (including extensions of that term by annual licenses), and if those headwater benefits were not previously assessed and reimbursed to the owner of the headwater improvement, the licensee shall reimburse the owner of the headwater improvement for those benefits, at such time as they are assessed, in the same manner as for benefits received during the term of this new license.

Article 301. Revised Exhibits and As-built Drawings. Within 90 days of completion of construction of the facilities authorized by this license, the licensee shall file, for Commission approval, revised exhibits A, F, and G to describe and show those project facilities as built. A courtesy copy shall be filed with the Commission's Division of Dam Safety and Inspections (D2SI) - San Francisco Regional Engineer; the Director, D2SI; and the Director, Division of Hydropower Administration and Compliance.

Article 302. Contract Plans and Specifications. At least 60 days prior to the start of any construction, the licensee shall submit one copy of its plans and specifications to the Commission's Division of Dam Safety and Inspections (D2SI) – San Francisco Regional Engineer, and two copies to the Commission (one of which shall be a courtesy copy to the Director, D2SI). The submittal also must include as part of preconstruction requirements: a Quality Control and Inspection Program, Temporary Construction Emergency Action Plan, and Soil Erosion and Sediment Control Plan. The licensee may not begin construction until the D2SI – San Francisco 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 Construction Drawings. Before starting construction, the licensee shall review and approve the design of contractor-designed cofferdams and deep excavations and shall make sure construction of cofferdams and deep excavations is consistent with the approved design. At least 30 days before starting construction of the cofferdam, the licensee shall submit one copy to the Commission's Division of Dam Safety and Inspections (D2SI) – San Francisco Regional Engineer, and two copies to the Commission (one of which shall be a courtesy copy to the Director, D2SI), of the approved cofferdam construction drawings and specifications and the letters of approval.

Article 401. Scheduling and Reporting Requirements.

(a) Requirement to File Plans for Commission Approval and Requirement to Consult

Various conditions of this license required by ordering paragraph (D) and found in Appendix A require the licensee to prepare plans and drawings for environmental measures. The following table indicates the agencies that the licensee shall consult with before preparing the plans or drawings along with the deadline for filing the plans and drawings with the Commission for approval.

Condition	Plan or Designs	Consulting Agencies	Due Date
Appendix A, condition 3 of 4(e) condition no. 14	Plan and schedule for East Fork water release equipment and flow monitoring devices	U.S. Forest Service, Utah Division of Wildlife Resources, U.S. Fish and Wildlife Service	Within one year of license issuance
Appendix A, condition 5 of 4(e) condition no.	Fish migration barrier designs	U.S. Forest Service, Utah Division of Wildlife Resources, U.S. Fish and Wildlife	Within one year of license issuance

14		Service	
Appendix A, condition 7 of 4(e) condition no. 14	Adaptive Environmental Monitoring and Management Program	U.S. Forest Service, Utah Division of Wildlife Resources, U.S. Fish and Wildlife Service	Within one year of license issuance
Appendix A, 4(e) condition no. 6	Operation and Maintenance Plan	U.S. Forest Service, Utah Division of Wildlife Resources, U.S. Fish and Wildlife Service	Within one year of license issuance
Appendix A, 4(e) condition no. 7	Safety During Construction Plan	U.S. Forest Service, Utah Division of Wildlife Resources, U.S. Fish and Wildlife Service	Sixty days prior to new construction, ground-disturbing activity
Appendix A, 4(e) condition no. 11	Recreation and Access Management Plan	U.S. Forest Service	Within one year of license issuance
Appendix A, 4(e) condition no. 12	Scenery Management Plan	U.S. Forest Service	Within one year of license issuance, or sixty days prior to any ground-disturbing activity

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

The Commission reserves the right to require changes to the plan or design. Implementation of the plan or design and associated schedule shall not begin until the plan or design and schedule are approved by the Commission. Upon Commission approval, the licensee shall implement the plan or design and schedule, including any changes required by the Commission.

(b) Requirement to Notify the Commission of any Temporary Modifications to the Water Release Schedule

If the licensee temporarily modifies the *Water Release Schedule* in accordance with Appendix A, condition no. 14(2), the licensee shall notify the Commission as soon as possible, but not later than 10 days after each such incident.

Article 402. Non-native Fish Eradication and Cutthroat Trout Stocking Plan. Within one year of license issuance, the licensee shall file for Commission approval, a Non-native Fish Eradication and Cutthroat Trout Stocking Plan for the purpose of re-establishing Colorado River (CR) cutthroat trout in project-area streams. The plan shall include, but not necessarily be limited to:

(1) specific measures to be undertaken to eradicate non-native fish by chemical treatment and to re-stock Colorado River cutthroat trout at the following locations:

(a) East Fork Boulder Creek: from the natural barrier (below headwater meadow) to the confluence with the West Fork of Boulder Creek;

(b) Boulder Creek: from the confluence of the East and West Forks of Boulder Creek to approximately 0.5 miles downstream; and

(2) an implementation schedule.

The licensee shall prepare the plan after consultation with the U.S. Fish and Wildlife Service, the Utah Division of Wildlife Resources, and the U.S. Forest Service. The licensee shall include with the plan 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 comments of the agencies are accommodated by the plan. The licensee shall 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 shall 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 shall not begin until the plan is approved by the Commission. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 403. Operational Compliance Monitoring Plan. Within one year of license issuance, the licensee shall file with the Commission, for approval, an Operational

Compliance Monitoring Plan. The plan at a minimum shall include:

- (1) site-specific monitoring approaches stipulating how the licensee will maintain compliance with the operational requirements of this license in accordance with Appendix A, condition no. 14(3);
- (2) a provision to maintain a log of project operations; and
- (3) a provision to submit to the U.S. Fish and Wildlife Service (FWS), the Utah Division of Wildlife Resources (Utah DWR), and the U.S. Forest Service (Forest Service) by January 31 of each license year, the prior year's East Fork bypassed reach streamflow and water temperature monitoring data.

The licensee shall prepare the plan after consultation with the FWS, Utah DWR, and Forest Service. The licensee shall 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 shall 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 shall 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 shall not begin until the plan is approved by the Commission. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 404. *Colorado River Cutthroat Trout Public Education Program.* Within one year of license issuance, the licensee shall file, for Commission approval, a Colorado River Cutthroat Trout Public Education Program Plan for the purpose of educating the public about Colorado River cutthroat trout re-establishment efforts in the project area. The plan shall include, but not necessarily be limited to:

- (1) the specific number of signs and the specific information that will be placed on the signage for the program;
- (2) the specific locations where the signage will be placed at the project; and
- (3) an implementation schedule.

The licensee shall prepare the plan after consultation with the U.S. Fish and Wildlife Service, the Utah Division of Wildlife Resources, and the U.S. Forest Service. The licensee shall include with the plan 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 comments of the agencies are accommodated by the plan. The licensee shall 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 shall 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 shall not begin until the plan is approved by the Commission. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 405. *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 406. *Avian Protection.* The licensee shall implement the "Avian Protection Plan," dated February 2006, and attached as Appendix A of the licensee's comments on the draft environmental assessment filed on January 29, 2007, at the project.

Article 407. *Historic Properties.* The licensee shall implement the "Historic Properties Management Plan, Garkane Energy Boulder Creek Hydroelectric System in the Dixie National Forest, Garfield County, Utah," dated May 2, 2005, and filed on May 9, 2005. The Commission reserves the right to require changes to the above Historic Properties Management Plan at any time during the term of the license.

Article 408. *Use and Occupancy.* (a) In accordance with the provisions of this article, the licensee shall 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 shall 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 shall 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 water 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 watercraft 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 shall require multiple use and occupancy of facilities for access to project lands or waters. The licensee shall 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 shall: (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 kV 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 shall file three copies of 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 watercraft 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 submit a letter to the Director, Office of Energy Projects, 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 Director, 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 shall 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 shall 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 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 shall not apply to any part of the public lands and reservations of the United States included within the project boundary.

Project No. 2219-020

40

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

(G) This order is final unless a request for rehearing is filed within 30 days of the date of its issuance, as provided in section 313 of the FPA. 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, except as specifically ordered by the Commission. The licensee's failure to file a request for rehearing shall constitute acceptance of this order.

J. Mark Robinson
Director
Office of Energy Projects

Form L-1
(October, 1975)

**FEDERAL ENERGY REGULATORY COMMISSION
TERMS AND CONDITIONS OF LICENSE
FOR CONSTRUCTED MAJOR PROJECT AFFECTING
LANDS OF THE UNITED STATES**

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 exhibits theretofore made a part of the license as may be specified by the Commission.

Article 3. The project area and project works shall be 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.

Article 4. The project, including its operation and maintenance and any work incidental to additions or alterations authorized by the Commission, whether or not

conducted upon lands of the United States, 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 such information as he may require concerning the operation and maintenance of the project, and any such alterations thereto, and shall notify him of the date upon which work with respect to any alteration 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 submit to said representative a detailed program of inspection by the Licensee that will provide for an adequate and qualified inspection force for construction of any such alterations to the project. Construction of said alterations or any feature thereof shall not be initiated until the program of inspection for the alterations or any feature thereof has been approved by said representative. 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 or 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 stream-gaging stations for the purpose of determining the stage 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 location 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 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 any 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 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 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. 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. Timber on lands of the United State cut, used, or destroyed in the construction and maintenance of the project works, or in the clearing of said lands, shall be paid for, and the resulting slash and debris disposed of, in accordance with the requirements of the agency of the United States having jurisdiction over said lands. Payment for merchantable timber shall be at current stumpage rates, and payment for young growth timber below merchantable size shall be at current damage appraisal values. However, the agency of the United States having jurisdiction may sell or dispose of the merchantable timber to others than the Licensee: Provided, That timber

so sold or disposed of shall be cut and removed from the area prior to, or without undue interference with, clearing operations of the Licensee and in coordination with the Licensee's project construction schedules. Such sale or disposal to others shall not relieve the Licensee of responsibility for the clearing and disposal of all slash and debris from project lands.

Article 22. The Licensee shall do everything reasonably within its power, and shall require its employees, contractors, and employees of contractors to do everything reasonably within their power, both independently and upon the request of officers of the agency concerned, to prevent, to make advance preparations for suppression of, and to suppress fires on the lands to be occupied or used under the license. The Licensee shall be liable for and shall pay the costs incurred by the United States in suppressing fires caused from the construction, operation, or maintenance of the project works or of the works appurtenant or accessory thereto under the license.

Article 23. The Licensee shall interpose no objection to, and shall in no way prevent, the use by the agency of the United States having jurisdiction over the lands of the United States affected, or by persons or corporations occupying lands of the United States under permit, of water for fire suppression from any stream, conduit, or body of water, natural or artificial, used by the Licensee in the operation of the project works covered by the license, or the use by said parties of water for sanitary and domestic purposes from any stream, conduit, or body of water, natural or artificial, used by the Licensee in the operation of the project works covered by the license.

Article 24. The Licensee shall be liable for injury to, or destruction of, any buildings, bridges, roads, trails, lands, or other property of the United States, occasioned by the construction, maintenance, or operation of the project works or of the works appurtenant or accessory thereto under the license. Arrangements to meet such liability, either by compensation for such injury or destruction, or by reconstruction or repair of damaged property, or otherwise, shall be made with the appropriate department or agency of the United States.

Article 25. The Licensee shall allow any agency of the United States, without charge, to construct or permit to be constructed on, through, and across those project lands which are lands of the United States such conduits, chutes, ditches, railroads, roads, trails, telephone and power lines, and other routes or means of transportation and communication as are not inconsistent with the enjoyment of said lands by the Licensee for the purposes of the license. This license shall not be construed as conferring upon the Licensee any right of use, occupancy, or enjoyment of the lands of the United States other than for the construction, operation, and maintenance of the project as stated in the

license.

Article 26. In the construction and maintenance of the project, the location and standards of roads and trails on lands of the United States and other uses of lands of the United States, including the location and condition of quarries, borrow pits, and spoil disposal areas, shall be subject to the approval of the department or agency of the United States having supervision over the lands involved.

Article 27. The Licensee shall make provision, or shall bear the reasonable cost, as determined by the agency of the United States affected, of making provision for avoiding inductive interference between any project transmission line or other project facility constructed, operated, or maintained under the license, and any radio installation, telephone line, or other communication facility installed or constructed before or after construction of such project transmission line or other project facility and owned, operated, or used by such agency of the United States in administering the lands under its jurisdiction.

Article 28. The Licensee shall make use of the Commission's guidelines and other recognized guidelines for treatment of transmission line rights-of-way, and shall clear such portions of transmission line rights-of-way across lands of the United States as are designated by the officer of the United States in charge of the lands; shall keep the areas so designated clear of new growth, all refuse, and inflammable material to the satisfaction of such officer; shall trim all branches of trees in contact with or liable to contact the transmission lines; shall cut and remove all dead or leaning trees which might fall in contact with the transmission lines; and shall take such other precautions against fire as may be required by such officer. No fires for the burning of waste material shall be set except with the prior written consent of the officer of the United States in charge of the lands as to time and place.

Article 29. The Licensee shall cooperate with the United States in the disposal by the United States, under the Act of July 31, 1947, 61 Stat. 681, as amended (30 U.S.C. sec. 601, et seq.), of mineral and vegetative materials from lands of the United States occupied by the project or any part thereof: Provided, That such disposal has been authorized by the Commission and that it does not unreasonably interfere with the occupancy of such lands by the Licensee for the purposes of the license: Provided further, That in the event of disagreement, any question of unreasonable interference shall be determined by the Commission after notice and opportunity for hearing.

Article 30. 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 31. 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 32. 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.

APPENDIX A

Conditions filed by the Forest Service on November 29, 2005, and modified in filings dated April 7, 2006, and February 7, 2007, pursuant to section 4(e) of the Federal Power Act for the new license for Project No. 2219.

Condition No. 1 – Requirement to Obtain a USDA Forest Service Special Use Authorization

If during the term of the License the Commission determines that the project involves the use of any additional National Forest System (NFS) lands, outside the current project boundary, the Licensee shall obtain a special use authorization from the USDA Forest Service for the occupancy and use of such additional NFS lands. The Licensee shall obtain the executed authorization before beginning any ground-disturbing activities on NFS lands covered by the special use authorization, and shall file that authorization with the Commission. The Licensee shall be responsible for the costs of collecting all information directly related to the evaluation of the effects of the proposed occupancy and use that the USDA Forest Service needs in order to make a decision concerning issuance of a special use authorization.

If during the term of the License the Licensee proposes to perform any project construction work, the Licensee shall obtain a construction temporary special use authorization from the USDA Forest Service before beginning any ground-disturbing activities on NFS lands. The special use authorization will include appropriate vegetation management and erosion control measures as needed to protect NFS lands and resources. The Licensee shall be responsible for the costs of collecting all information directly related to the evaluation of the effects of the proposed construction that the USDA Forest Service needs in order to make a decision concerning issuance of a construction temporary special use authorization. The Licensee may commence ground-disturbing activities authorized by the License and construction temporary special use authorization no sooner than 60 days following the date the Licensee files the USDA Forest Service temporary special use authorization with the Commission, unless the Commission prescribes a different commencement schedule. In the event there is a conflict between any provisions of the License and the USDA Forest Service special use authorization, the special use authorization shall prevail to the extent that the USDA Forest Service, in consultation with the Commission, deems necessary to protect and utilize NFS resources.

Condition No. 2 – USDA Forest Service Approval of Final Design

Before any construction of the project occurs on NFS lands, the Licensee shall obtain the prior written approval of the USDA Forest Service for all final design plans for project

components that the USDA Forest Service deems as affecting or potentially affecting NFS resources. The Licensee shall follow the schedules and procedures for design review and approval specified in the USDA Forest Service construction temporary special use authorization. As part of such prior written approval, the USDA Forest Service may require adjustments in final plans and facility locations to preclude or mitigate impacts and to assure that the project is compatible with on-the-ground conditions. Should such necessary adjustments be deemed by the USDA Forest Service, the Commission, or the Licensee to be a substantial change, the Licensee shall follow procedures of Article 2 of the license. Any changes to the license made for any reason, pursuant to Article 2 or Article 3, shall be made subject to any new terms and conditions of the Secretary of Agriculture made pursuant to section 4(e) of the Federal Power Act.

Condition No. 3 – Approval of Changes after Initial Construction

Notwithstanding any license authorization to make changes to the project, the Licensee shall get written approval from the USDA Forest Service prior to making any changes in the location of any constructed project features or facilities, or in the uses of project lands and waters, or any departure from the requirements of any approved exhibits filed with the Commission. Following receipt of such approval from the USDA Forest Service, and at least 60 days prior to initiating any such changes or departure, the Licensee shall file a report with the Commission describing the changes, the reasons for the changes, and showing the approval of the USDA Forest Service for such changes. The Licensee shall file an exact copy of this report with the USDA Forest Service at the same time it is filed with the Commission. This condition does not relieve the Licensee from the amendment or other requirements of Article 2 or Article 3 of this License.

Condition No. 4 – Consultation

Each year during the 60 days preceding the anniversary date of the license, the Licensee shall consult with the USDA Forest Service with regard to measures needed to ensure protection and development of the natural resource values of the project area. Within 60 days following such consultation, the Licensee shall file with the Commission evidence of the consultation with any recommendations made by the USDA Forest Service. The Commission reserves the right, after notice and opportunity for hearing, to require changes in the project and its operation that may be necessary to accomplish natural resource protection.

Condition No. 5 – Surrender of License or Transfer of Ownership

Prior to any surrender of this license, the Licensee shall restore NFS lands to a condition satisfactory to the USDA Forest Service. At least one year in advance of the proposed

application for license surrender, the Licensee shall file with the Commission a restoration plan approved by the USDA Forest Service. The restoration plan shall identify improvements to be removed, restoration measures, and time frames for implementation and estimated restoration costs. In addition, the Licensee shall pay for an independent audit to assist the USDA Forest Service in determining whether the Licensee has the financial ability to fund the surrender and restoration work specified in the plan.

As a condition of any transfer of the license or sale of the project, the Licensee shall require the proposed transferee to demonstrate, in a manner satisfactory to the USDA Forest Service, that it has the financial ability to provide for the costs of surrender and restoration of the project.

Condition No. 6 – Operation and Maintenance Plan

The Licensee shall maintain all its improvements and premises on National Forest System lands to standards of repair, orderliness, neatness, sanitation, and safety acceptable to the USDA Forest Service. The Licensee shall comply with all applicable Federal, State, and local laws, regulations, including but not limited to, the Federal Water Pollution Control Act, 33 U.S.C. 1251 et seq., the Resources Conservation and Recovery Act, 42 U.S.C. 6901 et seq., the Comprehensive Environmental Response, Control, and Liability Act, 42 U.S.C. 9601 et seq., and other relevant environmental laws, as well as public health and safety laws and other laws relating to the siting, construction, operation, maintenance of any facility, improvement, or equipment.

Within one year of license issuance, the Licensee shall file with the Commission an Operation and Maintenance Plan that is approved by the USDA Forest Service. The licensee shall also complete a Biological Evaluation (BE), in accordance with Forest Service Manual 2670, for USDA Forest Service sensitive species that evaluates the effects of project operation and maintenance. The BE shall be submitted concurrently with the proposed Operation and Maintenance Plan for USDA Forest Service approval. At a minimum, the Operation and Maintenance plan shall provide the following:

- Map of access routes for operation and maintenance of all project works .
- Description of all known operation and maintenance activities.
- Schedule of routine and reasonably foreseeable maintenance activities.
- Mitigation measures to protect fish, wildlife, plants, and water quality, including spill prevention control.
- Erosion and sediment control measures.
- Vegetation management measures, including:
 - Methods for prevention, control, and treatment of noxious weeds
 - Revegetation plan, including validation monitoring, for areas disturbed by

operations and maintenance.

This Operation and Maintenance Plan will not modify, override or otherwise expand any obligations agreed to by Garkane in the Settlement Agreement filed with FERC in Docket No. P-2219 on April 7, 2006.

Condition No. 7—Safety During Project Construction Plan

Sixty days prior to ground-disturbing activity related to new Project construction on or affecting NFS lands, the Licensee shall file with the Commission a Safety During Construction Plan approved by the USDA Forest Service that identifies potential hazard areas and measures necessary to protect public safety. Areas to consider include construction activities near public roads, trails, and recreation areas and facilities.

The Licensee shall perform daily (or on a schedule otherwise agreed to by the USDA Forest Service in writing) inspections of Licensee's construction operations on NFS lands while construction is in progress.

The Licensee shall document these inspections (informal writing sufficient) and shall deliver such documentation to the USDA Forest Service on a schedule agreed to by the USDA Forest Service. The inspections must specifically include fire plan compliance, public safety, and environmental protection. The Licensee shall act immediately to correct any items found to need correction.

Condition No. 8—Indemnification, Risks and Hazards, and Damage to Lands, Property, and Interests of the United States

The Licensee shall indemnify, defend, and hold the United States harmless for any costs, damages, claims, liabilities, and judgments arising from past, present, and future acts or omissions of the Licensee in connection with the use and/or occupancy authorized by this license. This indemnification and hold harmless provision applies solely to any negligent acts and omissions of the Licensee or the Licensee's heirs, assigns, agents, employees, affiliates, subsidiaries, fiduciaries, contractors, or lessees in connection with the use and/or occupancy authorized by this license which result in: (1) violations of any laws and regulations which are now or which may in the future become applicable, and including, but not limited to environmental laws, such as the Comprehensive Environmental Response Compensation and Liability Act, Resource Conservation and Recovery Act, Oil Pollution Act, Clean Water Act, Clean Air Act; (2) judgments, claims, demands, penalties, or fees assessed against the United States; (3) costs, expenses, and damages incurred by the United States; or (4) the release or threatened release of any solid waste, hazardous substances, pollutant, contaminant, or oil in any form in the

environment. The provisions of this condition do not apply to any damages, judgments, claims, or demands arising out of the negligence, recklessness, or willful misconduct of the United States or other third parties or to damages, judgments, claims, or demands arising out of any activity initially occurring outside the Project boundary or outside National Forest System lands. The Licensee's liability hereunder shall be limited to reasonable damages, costs, claims, and judgments.

The Licensee is responsible for periodically inspecting (in accordance with good utility practice) its Project site, right-of-way, and immediate adjoining area for dangerous trees, hanging limbs, and other evidence of hazardous conditions. Licensee will abate those conditions, except those caused by third parties not related to the occupancy and use authorized by the License, after securing permission from the Forest Service, except in an emergency where there is an imminent risk of death or injury to the public or facilities, in which case the Licensee shall notify the Forest Service of the action as soon as possible.

The extent of the Licensee's liability for fire and other damages to National Forest System lands shall be determined in accordance with standard L-Form Articles 22 and 24 of this license and the liability standard shall be determined in Federal Court by using applicable Utah law.

Condition No. 11 – Recreation and Access Management Plan

Within one year of license issuance the Licensee shall file with the Commission a Recreation and Access Management Plan, which is to be implemented by the Licensee following approval by the USDA Forest Service. At a minimum, implementation of this plan shall provide the following:

- Unrestricted administrative access for USDA Forest Service personnel to NFS lands.
- Public information including signage.
- Public access to NFS lands where access is affected by the project.
- Parking and turnaround areas where motorized access is restricted by project.
- Road maintenance commensurate with Licensee use.
- Schedule for completion.

Condition No. 12 – Scenery Management Plan

Within one year of license issuance, or 60 days prior to any ground-disturbing activity, the Licensee shall file with the Commission a Scenery Management Plan that is approved by the USDA Forest Service. The objective of this plan is to bring views that include project features where visual objectives are not being met toward compliance with Forest

Plan objectives for the area. At a minimum, this plan shall provide the following:

- Detailed mitigation plans (plan and profile views) for all project features identified and mapped in the study in order to bring project facilities into compliance with the Forest Plan.
- Areas of project features to be disguised or screened.
- Methods to disguise or screen the penstock, including, as needed, paint colors and/or textures, vegetation to be planted (species to be identified), or physical modifications to project features.
- Schedule for completion.

Condition No. 13 - Sensitive Species Management

Within 90 days prior to implementing any new licensee activities that require USDA Forest Service approval and that may affect USDA Forest Service sensitive species and their habitat, the Licensee shall file with the Commission a biological evaluation (BE) for sensitive species, in accordance with Forest Service Manual 2670, that is approved by the USDA Forest Service. At a minimum incorporate the following mitigation in the BE:

- Develop procedures to minimize adverse effects to sensitive species.
- Develop implementation and effectiveness monitoring of measures taken or employed to reduce effects to sensitive species.
- Timing of construction and maintenance to avoid conflicts with sensitive species.

This Sensitive Species Plan will not modify, override or otherwise expand any obligations agreed to by Garkane in the Settlement Agreement filed with FERC in Docket No. P-2219 on April 7, 2006.

Condition No. 14

Condition 1. Water Release Schedule. Upon completion of construction of the Water Release Equipment and Flow Monitoring Devices discussed below, the licensee will release into the stream channel immediately below the East Fork Reservoir water necessary to provide a flow of the lower of 2 cubic feet per second (“cfs”) or the total inflow into the East Fork Reservoir (“Water Release Schedule”). The total flow into the East Fork Reservoir is the sum of the penstock flow and the flow in the stream below the dam at the Project. If a flow of 2 cfs or more is occurring naturally in the stream channel immediately below the East Fork Reservoir, then the licensee will not be required to release water from the flow control structure.

If three consecutive daily average flows in the return ditch, below the lowest point of

irrigation diversion directly from the return ditch, are measured to be less than 2 cfs, then the licensee will release water into the stream channel immediately below East Fork Reservoir in an amount equal to the average of the three consecutive daily average flows in the return ditch. Flows in the stream channel immediately below East Fork Reservoir shall never drop below 1.0 cfs unless the natural inflow entering the East Fork Reservoir drops below 1.0 cfs. The licensee will resume the Water Release Schedule of 2 cfs once the average of three consecutive daily average flows in the return ditch and the total flow into the East Fork Reservoir equals or exceeds 2 cfs.

The flow in the stream channel immediately below the East Fork Reservoir will be measured at a suitable location, as agreed upon by the TCC,⁴³ below the East Fork Reservoir. A continuous recording device will be installed to record the flow.

The licensee shall not have the Water Release Schedule obligations to the extent that a court of competent jurisdiction rules that the releases would impair existing water rights or would require altering, amending, or restricting the senior water rights of the Boulder Irrigation Company. The Parties will abide by any such rulings by a court of competent jurisdiction. If, on appeal, a court of competent jurisdiction subsequently rules that the releases would not impair existing water rights or would not require altering, amending or restricting the senior water rights of the Boulder Irrigation Company, the Water Release Schedule obligations shall be reinstated in the timeframe provided in the court's order, *provided, however*, that the Parties shall abide by orders thereafter issued on further appeals.

Condition 2. Temporary Modification to Water Release Schedule. The licensee may temporarily modify the Water Release Schedule to facilitate regular maintenance, emergency repairs, equipment failures, operating emergencies, or unforeseen hydrologic events. The licensee will minimize the number of Project maintenance shutdowns, draw downs, and spillway tests and will attempt to schedule such activities at times that will not interfere with trout spawning or harm incubating trout eggs. If the Water Release Schedule is so modified, then the licensee will notify the TCC as soon as possible and provide an estimated length of time for which the Water Release Schedule will be modified. The licensee will prepare procedures describing how it will restore flows in an emergency to be included in its operational and maintenance plan.

⁴³ The "TCC" is the Technical Coordination Committee, consisting of one representative each of the licensee, the U.S. Forest Service, and the Utah Division of Wildlife Resources.

Condition 3. Water Release Equipment and Flow Monitoring Devices. The licensee shall construct and, during the Term of the New License, operate and maintain valve, control and/or other devices in the penstock below the dam and above the stream crossing to facilitate the Water Release Schedule (“Water Release Equipment”). After consulting with the TCC, the licensee shall develop plans to install devices with a continuous recording gage to monitor water flow (“Flow Monitoring Devices”) to demonstrate compliance with the Water Release Schedule. The licensee shall install and/or maintain the Flow Monitoring Devices in the following flow monitoring locations: (1) the flow in the penstock below the reservoir; (2) a suitable location below the East Fork Reservoir; and (3) return ditch, below the lowest point of irrigation diversion directly from the return ditch. (The licensee already has installed the Flow Monitoring Devices at locations 1 and 3.) Suitable devices may include, *inter alia*, pressure transducers, AquaRods, and flumes. After consulting with the TCC, the licensee will file the plans for the Water Release Equipment at location (2) with FERC.

The licensee will be responsible for developing site-specific flow monitoring approaches at these locations, including strategies for frequency and timing of downloading data. The licensee will develop recording, downloading, and posting schemes for all three flow monitoring locations.

The flow monitoring for the locations listed in this section will be recorded on an hourly basis and will occur continuously throughout the Term of the New License. This flow monitoring schedule may be temporarily suspended as needed to facilitate regular maintenance, emergency repairs, equipment failures, operating emergencies, or unforeseen hydrological events.

The licensee shall file with FERC for its approval of functional design drawings and an implementation schedule for constructing the Water Release Equipment and Flow Monitoring Devices within one year of FERC issuing a New License. The Flow Monitoring Devices shall be shown on the as-built drawings filed with FERC. The Water Release Equipment and Flow Monitoring Devices shall be subject to review and comment by the TCC before the licensee submits the design to FERC.

The licensee shall complete installation of the Water Release Equipment and Flow Monitoring Devices, if FERC accepts such designs as filed, before the completion of the first two full summer construction seasons following FERC’s acceptance of the designs as filed.

Condition 4. Non-Native Fish Removal. The licensee agrees to use its reasonable efforts to cooperate in the work of DWR and other agencies to remove non-native fish and re-establish CRCT in the following streams:

- a. East Fork Boulder Creek: from the natural barrier (below headwater meadow) to the confluence with the West Fork of Boulder Creek.
- b. Boulder Creek: from the confluence of East and West Fork of Boulder Creek, approximately 0.5 miles downstream.

Specifically, the licensee, with the help of a consultant, will complete appropriate environmental analysis and documentation for implementing this condition within three years of FERC issuing a New License. DWR will complete the fieldwork necessary to treat the streams and plant the fish in the streams. The licensee will not be required to perform any chemical treatment to complete the appropriate environmental analysis and documentation discussed in this condition. The cost to the licensee to implement this condition shall not exceed \$20,000.

Condition 5. Fish Migration Barriers. In order to protect the CRCT populations within the main stem of Boulder Creek, the licensee shall, as specified below, construct and maintain two fish migration barriers (“Fish Migration Barriers”) on Boulder Creek approximately 0.5 miles downstream from the confluence of the East and West Fork of Boulder Creek. The licensee shall provide design specifications for the Fish Migration Barriers to the TCC for its review and comment by the end of the first year after FERC issues a New License.

The licensee shall commence and complete construction of the migration barriers within the first two full summer construction seasons occurring after receiving all necessary approvals, including but not limited to approval by the TCC, for the necessary construction equipment obtaining access to the Project-related sites and the provision by USFS of the materials from the nearby area necessary for construction (*e.g.*, large rocks).

The licensee will be responsible for any long-term maintenance associated with the Fish Migration Barriers, subject to: (i) the permission of the USFS for site access for maintenance equipment; and (ii) the provision by the USFS of necessary materials on or near the site (*e.g.*, large rocks).

Condition 6. CRCT Public Education Program. The licensee agrees to provide up to \$10,000 to fund a public education program developed by USFS and/or DWR to help increase public support for re-establishing CRCT within regional waters.

Condition 7. Adaptive Environmental Monitoring and Management Program (“AEMMP”). The licensee agrees to develop and implement this AEMMP. This AEMMP will be updated and finalized by the TCC in a manner consistent with this Agreement, as a modification thereto, within one year of FERC issuing a New License.

However, the limitations on the licensee's expenditures contained within this and other license conditions shall not be subject to modification by the TCC.

Objective. The objective of this AEMMP is to monitor the outcome of the proposed flow restoration below the East Fork diversion dam and stream renovation (*i.e.*, non-native fish removal) in terms of the response of CRCT population distribution, age structure, and biomass. The success of the combined operational and non-flow mitigation measures will be defined based on the response of CRCT in terms of expanded distribution and increases in standing crop as outlined below regarding biological objectives for CRCT.

Biological Objectives for CRCT. The TCC will be responsible for the development of quantifiable biological objectives for CRCT standing stock targets based on base line data collected over a two-year period prior to initiation of flow releases and/or stream rehabilitations in the East Fork of Boulder Creek.

Flow and Temperature Monitoring. The licensee, in coordination with the TCC, will conduct flow and temperature monitoring at the following five locations: (1) West Fork of Boulder Creek above the confluence with East Fork; (2) East Fork of Boulder Creek above the confluence with West Fork; (3) Bear Creek; (4) Main Boulder Creek above the Power House return flow; and (5) Main Boulder Creek below the Power House return flow. Temperature monitoring will be also conducted below the East Fork Reservoir. The licensee will conduct temperature monitoring using thermographs (or other suitable instrumentation) set to record hourly temperature data and downloaded/serviced on a monthly basis. Due to the ice-over conditions within these systems during the winter period, the licensee will pull thermographs from the stream locations in late fall (*i.e.*, October) and replace them after the spring freshet has subsided. Suitable flow measuring devices may include, *inter alia*, pressure transducers, AquaRods, and flumes. The flow will be recorded on an hourly basis. Flow and temperature monitoring at the locations listed in this condition will occur hourly during each summer season for the first five years after the licensee begins the Water Release Schedule, and once every fifth year thereafter, concurrent with the fish population monitoring activities described below. The provisions of this condition may be temporarily suspended as needed to facilitate regular maintenance, emergency repairs, equipment failures, operating emergencies, or unforeseen hydrological events.

Flow and temperature monitoring data will be posted electronically on the world wide web for access by resource agencies.

Fish Population Monitoring. This fish population monitoring will utilize the following three reference sites: above West Fork Reservoir, above East Fork Reservoir, and Main Boulder Creek below the Power House flow release point. This fish population

monitoring will utilize the following four monitoring sites: ¼ mile below the East Fork Reservoir, West Fork of Boulder Creek above the confluence with East Fork, East Fork of Boulder Creek above the confluence with West Fork, and Main Boulder Creek above the Power House return flows.

Fish monitoring will entail using the standardized DWR two-pass depletion electroshocking methodology conducted during July/August each sampling year. At each sampling location a 100-meter section of stream will be sampled and all fish caught will be identified to species, total length measured, and weight in grams recorded using a hand-held scale. Additional passes will be undertaken if the second pass data does not show a valid depletion of fish numbers. All fish will be returned to the stream upon completion of the sampling. The average stream channel width within the sampling site will be determined to estimate the area sampled.

In the event that the sampling station located ¼ mile below the East Fork Reservoir does not contain fish, a qualitative sampling effort will be initiated in a downstream direction until fish are located. This location will be noted either on a quad map or GPS location enumerated. Sampling during baseline conditions is anticipated to occur over a two-year period.

Population monitoring data will be summarized in terms of community composition, age (size) structure for each species, number of trout/mile, number of pounds per acre, and condition factor. Sampling dates will be noted on the time series of flow generated from the flow monitoring data and the associated temperature time series at each station will also be provided. A summary report containing these analyses will be provided two weeks prior to the annual meeting of the TCC.

Fish population monitoring by the TCC discussed above will be conducted in accordance with the following schedule:

- (a) Beginning the third complete summer after the licensee commences the Water Release Schedule, the TCC will conduct such fish population monitoring once a year for five years.
- (b) After the first five years of fish population monitoring, the TCC will conduct such fish population monitoring once every fifth year.

Condition 8. Potential Future CRCT Re-Establishment Projects. If the biological objectives for CRCT in the Boulder Creek drainage have not been met by the Project modifications adopted in this Agreement within 10 years of the issuance of a New License, the TCC will be responsible for evaluation of future potential mitigation projects.

Future potential mitigation projects may be selected from the following list and the TCC will prioritize the projects. The licensee's total cost to implement future potential mitigation projects shall not exceed \$135,000, adjusted for inflation as described below.

The cost amounts specified in dollars above, shall be deemed to be stated as of the Effective Date of the Settlement Agreement, and the Licensee shall escalate such funds as of January 1 of each year following the Effective Date of the Agreement according to the following formula until all funds are expended:

$$AD = D \times (NGDP)/IGDP$$

WHERE:

- AD = Adjusted dollar amount as of January 1 of the year in which the adjustment is made.
- D = Dollar amount prior to adjustment.
- IGDP = GDP-IPD for the third quarter of the year before the previous adjustment date (or, in the case of the first adjustment, the third quarter of the year before the Effective Date).
- NGDP= GDP-IPD for the third quarter of the year before the adjustment date.

“GDP-IPD” is the value published for the Gross Domestic Product Implicit Price Deflator by the U.S. Department of Commerce, Bureau of Economic Analysis in the publication Survey of Current Business, Table 7.1 (being on the basis of 1987 = 100), in the third month following the end of the applicable quarter. If that index ceases to be published, any reasonably equivalent index published by the Bureau of Economic Analysis may be substituted by the agreement of the Parties and the Licensee. If the base year for GDP-IPD is changed or if publication of the index is discontinued, the Licensees shall promptly make adjustments or, if necessary, select an appropriate alternative index acceptable to the Parties to achieve the same economic effect.

Future potential mitigation projects may be selected from the following list:

(a) *Other CRCT Re-Establishment Projects.* The TCC will be responsible for evaluation of future, potential projects to improve and/or re-establish CRCT in the following streams outside of the Boulder Creek drainage: Carcass Creek, Pleasant Creek, and North Creek. The TCC will make specific recommendations on the extent and nature of feasible activities to be undertaken at these locations and to be funded in a manner consistent with the cost limitation provided below for all AEMMP activities, based on site reconnaissance conducted by the Governmental Parties at their own expense. The specific actions to be undertaken at these potential sites will be evaluated as part of the

AEMMP. If the TCC determines that CRCT re-establishment is feasible at any or all of the above mentioned locations, the licensee, with the help of a consultant, agrees to complete appropriate environmental analysis and documentation for a future, potential project to improve and/or re-establish CRCT in any or all of the above mentioned locations. The cost to the licensee to complete the appropriate environmental analysis and documentation addressed in this article are estimated at \$20,000 for each creek, and is not expected to exceed \$60,000 in total. DWR will complete the fieldwork necessary to treat the streams and plant the fish in the streams. Depending upon the specific actions taken by the TCC, the licensee, in coordination with the TCC, may need to perform additional hourly flow monitoring and fish monitoring within the above mentioned locations.

(b) *Aquatic Connectivity Projects Within the Boulder Creek Watershed.* The TCC will consider other projects that provide for aquatic connectivity. Examples include culvert replacements and other fish barrier removals.

Condition 9. Resources Required to Implement AEMMP. It is anticipated that four (4) site visits will be required at each flow monitoring location in order to install the flow measurement devices and develop the required stage-discharge relationships. In the event of major channel changes, new stage-discharge relationships (4 visits) will be required. In addition, during the initial visit, the thermographs will also be installed at each monitoring station. Data from the flow measurement devices and thermographs (or other suitable instrumentation) will be downloaded/serviced every 4-6 weeks during the non-snow period. Fish sampling is anticipated to take a 4-person crew 8 days each sampling period (*i.e.*, two stations a day given logistics and site-access). Approximately two weeks are anticipated for annual data reduction, report preparation, and attendance at the annual TCC meeting. Additional time and resources may be required depending on the inclusion of the identified potential mitigation sites identified in this Agreement. The cost to the licensee to fund such activities discussed above to implement the AEMMP, in addition to any other cost limitations identified elsewhere in these license conditions, shall not exceed \$25,000 per year.