

121 FERC ¶ 62,009
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Northern Indiana Public Service Company

Project No. 12514-000

ORDER ISSUING ORIGINAL LICENSE
(Major Project)

(October 2, 2007)

INTRODUCTION

1. On June 28, 2004, Northern Indiana Public Service Company (NIPSCO) filed an application for an original license under Part I of the Federal Power Act (FPA)¹ to continue operation and maintenance of the unlicensed 16.4-megawatt (MW) Norway-Oakdale Hydroelectric Project No. 12514, located on the Tippecanoe River, a navigable waterway,² near the town of Monticello, in Carroll and White counties, Indiana. NIPSCO proposes no new construction or new capacity at the project. The project does not affect any federal lands. The project has an estimated average annual generation of about 65 gigawatthours (GWh). For the reasons discussed below, I am issuing an original 30-year license for the project.

BACKGROUND

2. Notice of the application accepted was issued on February 28, 2005. A timely motion to intervene was filed by the U.S. Department of the Interior (Interior) on April 27, 2005. Interior does not oppose the project.

3. On September 30, 2005, the Commission issued public notice that the application was ready for environmental analysis and solicited comments, recommendations, terms and conditions, and prescriptions. In response, comments and recommendations were received from Interior, Indiana Department of Natural Resources (Indiana DNR), and NIPSCO.

¹ 16 U.S.C. § 797(f) *et seq.* (2000).

² *Northern Indiana Public Service Company*, 92 FERC ¶ 62,258 (2000).

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4. Commission staff issued a draft Environmental Assessment (EA) for the project on October 6, 2006, and a final EA on February 16, 2007. Comments on the draft EA were received from the following entities: Shafer and Freeman Lakes Environmental Conservation Corporation (Conservation Corporation), Interior, U.S. Geological Survey (USGS), NIPSCO, Indiana DNR, and U.S. Environmental Protection Agency. Appendix B of the final EA addresses the comments filed on the draft EA. References in this order to the EA are to the final EA unless otherwise specified. The motion to intervene, comments, and recommendations have been fully considered in determining whether, and under what conditions, to issue this license.

PROJECT DESCRIPTION AND OPERATION

A. Project Description

5. The existing Norway-Oakdale Project consists of two developments. The upper development, Norway, includes a 915-foot-long dam and an integral powerhouse, equipped with four vertical Francis turbine-generating units with a total authorized installed capacity of 7.2 MW. The Norway Dam has a maximum height of 34 feet and contains a 120-foot-long gated spillway section. The reservoir, Lake Shafer, extends 10 miles upstream of Norway Dam (River Mile 30.2 to River Mile 40.2), and has a surface area of about 1,291 acres at a pool elevation of 647.47 feet National Geodetic Vertical Datum (NGVD). A 2-mile-long, 69,000-volt transmission line connects the Norway development substation to the Monticello substation located in Monticello, Indiana.

6. The lower development, Oakdale, includes: a 1,688-foot-long dam and an integral powerhouse, equipped with three vertical Francis turbine-generating units with a total authorized installed capacity of 9.2 MW. The Oakdale Dam has a maximum height of 58 feet and contains an 84-foot-long gated spillway section. The reservoir, Lake Freeman, extends 10 miles upstream of Oakdale Dam (River Mile 17.8 to River Mile 27.8) and has a surface area of about 1,547 acres at a pool elevation of 612.45 feet NGVD. A 69,000-volt substation connects the facility to the electrical grid. A more detailed description of the project is set forth in ordering paragraph (B)(2).

7. In its June 28, 2006, filing, NIPSCO proposes to include in the Norway-Oakdale Project boundary only those lands it owns consisting of several acres surrounding the dams at the Norway and Oakdale developments. Further discussion on the project boundary is provided later in this license under the "REQUIRED MEASURES, *Project Boundary*" section.

B. Project Operation

8. Both reservoirs currently are operated essentially in a daily average run-of-river (ROR) mode, whereby daily outflow approximates daily inflow. During normal operations, Lake Shafer is maintained within ± 0.60 foot of elevation 647.82 feet NGVD at the powerhouse from October 1 through May 31, and within ± 0.25 foot of elevation 647.47 feet NGVD from June 1 through September 30. During normal operations, Lake Freeman is maintained within ± 0.60 foot of elevation 612.60 feet NGVD at the powerhouse from October 1 through May 31, and within ± 0.25 foot of elevation 612.45 feet NGVD from June 1 through September 30. The two powerhouses are operated manually, based on the operator's observation of flow or water level.

9. NIPSCO proposes to operate the project ROR, to the maximum extent achievable with the existing 1920's vintage equipment and to reduce reservoir fluctuations, by maintaining each reservoir within ± 0.25 feet of a single normal water level (647.47 feet NGVD at Lake Shafer and 612.45 feet NGVD at Lake Freeman) year round during normal operations. During abnormal operating conditions (e.g., flooding or ice dam formation) the reservoirs would be operated within +0.75 foot and -0.25 foot of normal water levels. As discussed below, this license adopts the more stringent reservoir elevation requirements proposed by NIPSCO.

WATER QUALITY CERTIFICATION

10. Under section 401(a)(1) of the Clean Water Act (CWA),³ the Commission may not issue a license authorizing the construction or operation of a hydroelectric project unless the state water quality certifying agency either has issued water quality certification for the project or has waived certification by failing to act on a request for certification within a reasonable period of time, not to exceed one year. Section 401(d) of the CWA provides that the certification shall become a condition of any federal license that authorizes construction or operation of the project.⁴

11. On March 5, 2004, NIPSCO applied to the Indiana Department of Environmental Management (Indiana DEM) for certifications for the Norway and Oakdale dams, which the Indiana DEM received on March 16, 2004. The agency issued certifications on March 24, 2005. The certifications required NIPSCO to implement a dissolved oxygen (DO) monitoring program, provide monthly data reports of the monitoring results to

³ 33 U.S.C. § 1341(a)(1) (2000).

⁴ 33 U.S.C. § 1341(d) (2000).

Indiana DEM, and submit for approval a final report that identifies any DO problems and recommends solutions (e.g., turbine venting, spillage or other operational changes) to maintain state DO levels in the project tailraces.

12. Because the agency did not act on NIPSCO's March 16, 2004 request within one year after it received the request, the State of Indiana is deemed to have waived certification for Norway-Oakdale Hydroelectric Project. However, the provisions of the certification are consistent with the conditions in this license and are addressed below in the "REQUIRED MEASURES, *Water Quality*" section.

SECTION 18 FISHWAY PRESCRIPTION

13. Section 18 of the FPA⁵ provides that the Commission shall require the construction, maintenance, and operation by a licensee of such fishways as may be prescribed by the Secretary of the Interior or the Secretary of Commerce, as appropriate. By letter filed November 22, 2005, Interior requested that the Commission reserve its authority to prescribe fishways. Consistent with Commission policy, Article 412 of this license reserves the Commission's authority to require fishways that may be prescribed by Interior for the Norway-Oakdale Hydroelectric Project.

THREATENED AND ENDANGERED SPECIES

14. Section 7(a)(2) of the Endangered Species Act of 1973⁶ requires federal agencies to ensure that their actions are not likely to jeopardize the continued existence of federally listed threatened and endangered species, or result in the destruction or adverse modification of their designated critical habitat.

15. There are four federally listed species, and one species that was previously listed as threatened, with the potential to occur in the project area. The ranges of the endangered clubshell, fanshell, and northern riffleshell mussels could overlap with the project area, but there are no current records of these species within the project boundaries. While a recent record indicates an occurrence of the endangered Indiana bat a few miles upstream of the project, habitat is very limited within the project boundary, and there are no current records of this species within the project vicinity. The bald eagle, previously listed as a threatened species, has been observed in the project vicinity

⁵ 16 U.S.C. § 811 (2000).

⁶ 16 U.S.C. § 1536(a) (2000).

but no nests have been documented.⁷ In the EA, staff determined that with its recommended measures, relicensing the Norway-Oakdale Project is not likely to adversely affect the above five species and their habitat. Interior initially concurred with this finding by letter filed September 22, 2004, and reconfirmed their concurrence via telephone conversation on April 5, 2007.

NATIONAL HISTORIC PRESERVATION ACT

16. Under section 106 of the National Historic Preservation Act (NHPA),⁸ and its implementing regulations,⁹ federal agencies must take into account the effect of any proposed undertaking on properties listed or eligible for listing in the National Register of Historic Places and afford the Advisory Council on Historic Preservation a reasonable opportunity to comment on the undertaking. This generally requires the Commission to consult with the State Historic Preservation Officer to determine whether and how a proposed action may affect historic properties, and to seek ways to avoid or minimize any adverse effects.

17. To satisfy these responsibilities, on March 22, 2007, the Commission executed a Programmatic Agreement (PA) with the Indiana State Historic Preservation Officer and invited NIPSCO, Pokagon Band of Potawatomi Indians of Indiana and Michigan, and the Miami Nation of Oklahoma to concur with the stipulations of the PA. NIPSCO and the Pokagon Band of Potawatomi Indians of Indiana and Michigan concurred. The PA requires the licensee to prepare and implement a Historic Properties Management Plan (HPMP) for the term of any license issued for this project. Execution of the PA demonstrates the Commission's compliance with section 106 of the NHPA. Article 415 requires the licensee to implement the PA and to file its HPMP with the Commission for approval within one year of license issuance.

⁷ The official bald eagle delisting notice was issued on July 9, 2007 (72 Fed. Reg. 37346), and became effective on August 8, 2007. Although delisted, the eagle is still protected by the Bald Eagle Protection Act of 1940, 16 U.S.C. §§ 668-668d (2000), and the Migratory Bird Treaty Act of 1972, 16 U.S.C. §§ 703-712 (2000).

⁸ 16 U.S.C. § 470 *et seq.* (2000).

⁹ 36 C.F.R. Part 800 (2007).

RECOMMENDATIONS OF FEDERAL AND STATE FISH AND WILDLIFE AGENCIES

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

18. Section 10(j)(1) of the FPA¹⁰ 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,¹¹ to “adequately and equitably protect, mitigate damages to, and enhance fish and wildlife (including related spawning grounds and habitat)” affected by the project.

19. In response to the September 30, 2005 public notice soliciting comments, recommendations, terms and conditions, and prescriptions, Indiana DNR and Interior timely filed fish and wildlife recommendations pursuant to section 10(j) of the FPA on November 16 and 22, 2005, respectively. Of the sixteen recommendations, five and one aspect of a sixth¹² were determined by the Commission staff to be outside the scope of section 10(j) and are discussed in the next section.

20. This license includes conditions consistent with the eleven section 10(j) recommendations. These include recommendations to: (1) maintain state water quality standards for temperature and DO in the tailraces (Article 401); (2) develop and implement an erosion control plan to address existing and future erosion below Oakdale Dam (Article 402); (3) operate the project in ROR mode, whereby daily outflow equals daily inflow, to minimize reservoir and tailwater elevation fluctuations (Article 403); (4) pass river inflow instantaneously or within a reasonable period of time when turbines are shut down to prevent dewatering of the tailwaters downstream of the project dams (Article 403); (5) develop and implement an operations compliance plan within 180 days of license issuance (Article 404); (6) define “abnormal river conditions” (Article 405); (7) minimize the effects of reservoir drawdowns by planning for them at an annual meeting, and restricting drawdowns to those necessary for repairs and emergencies (Article 406); (8) design reservoir drawdowns to minimize effects on mussels (Articles 406 and 408); (9) develop and implement a woody debris management plan (Article 409); (10) develop

¹⁰ 16 U.S.C. § 803(j)(1) (2000).

¹¹ 16 U.S.C. § 661 *et seq.* (2000).

¹² The recommendation to require a plan to protect fish and mussels is considered and adopted under 10(j), but one aspect of the plan, to require monetary compensation for fish mortality, is considered under section 10(a)(1) and not adopted.

and implement a mussel host fish passage plan to facilitate the downstream transport of mussel larvae (Article 410); and (11) develop and implement a detailed mussel enhancement plan (Article 411).

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

21. Interior and Indiana DNR made six recommendations that are not specific measures to protect, mitigate damages to, or enhance fish and wildlife. Consequently, staff did not consider these recommendations under section 10(j) of the FPA. Instead, staff considered these recommendations under the broad public-interest standard of FPA section 10(a)(1).¹³

22. In the EA, staff recommended adopting four agency recommendations. Three are included as conditions of this license, and require NIPSCO to: (1) post staff gages that are visible to the public or make lake level information available on a web site with an update at least every hour (Article 404); (2) notify the agencies of planned drawdowns before they take place (Article 406); and (3) notify the Indiana DNR of emergency drawdowns within 24 hours (Article 406).

23. The EA also recommended adopting an agency recommendation to require the licensee to reconsider the project's operational plan in the event the project turbines are replaced. However, if the licensee were to replace the project's turbines, it would first have to obtain Commission authorization to do so by filing an application to amend the project license. NIPSCO, as part of this application, would evaluate any changes to project operations warranted by the turbine replacement.

24. The EA did not recommend adopting Indiana DNR's recommendation that NIPSCO pay 50 percent of the cost for annual expenditures associated with operating and maintaining the USGS Delphi gaging station (gage #03333050). This recommendation is premised on the assumption that the gage data is essential for the assessment of ROR operations at the project. As discussed in the EA,¹⁴ staff disagrees with this assumption

¹³ 16 U.S.C. § 803(a)(1) (2000). 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 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.

¹⁴ EA at 97 and 109.

because of the gage's location 11 miles downstream of the project and the intervening major tributaries entering the Tippecanoe River. While the gage data would complement the licensee's measurements at the dams, compliance with ROR operations is sufficiently confirmed by the proposed tailrace and headpond elevation monitoring and generation discharge monitoring.

25. Under the plans to protect fish and mussels required by Articles 406 and 408, Interior and Indiana DNR also recommended that the licensee provide monetary compensation for unavoidable losses of fish and mussel resources. This aspect of the recommendation is not within the scope of section 10(j) because it is not a specific measure to protect, mitigate damages to, or enhance fish and mussels. The final EA determined that: (a) there is no significant adverse effect on the fish populations of the Tippecanoe River caused by the project; and (b) the existing 1.5- to- 1.75 inch trashrack clear bar spacing provides adequate protection for larger fish, which are more prone to turbine mortality. It is well established that the Commission cannot require funding of compensatory mitigation where it has not been shown by substantial evidence that entrainment mortality has had a significant adverse effect on the fishery population.¹⁵ Therefore, it is not being required here.

REQUIRED MEASURES

Water Quality

26. The EA reported low DO levels in the tailwaters of both developments. Adequate DO is necessary to support fisheries, mussel communities, and the State of Indiana's designated uses for the Tippecanoe River.¹⁶ Indiana DNR and Interior recommended that NIPSCO monitor DO levels at the project to determine compliance with state DO standards, and if monitoring indicates a continuing DO problem, NIPSCO be required to develop a corrective action plan in consultation with the agencies. Corrective actions

¹⁵ See *City of New Martinsville v. FERC*, 102 F.3d 567 (D.C. Cir. 1996); *Allegheny Energy Supply Company*, 109 FERC ¶ 61,028 (2004); *City of Jackson, Ohio*, 105 FERC ¶ 61,136 (2003); and *Tower Kleber Limited Partnership*, 91 FERC ¶ 61,172 (2000).

¹⁶ EA at 29 and 30. On November 16, 2005 and November 20, 2006, NIPSCO filed reports with the Commission documenting DO and temperature below the developments during the prior summer sampling season. As a result of the previous sampling effort, NIPSCO submitted a monitoring plan for the summer of 2007 to the Indiana DEM and the Commission on April 10, 2007.

could include spills over the dam or changes to project operations. Indiana DEM's water quality certification included similar measures to ensure that the project maintain state standards for DO.

27. Based on its analysis in the EA, staff concurs with agencies' strategy of requiring the licensee to monitor DO levels and devise corrective actions if low DO continues to be a problem.¹⁷ I agree, and Article 401 accordingly requires a water quality monitoring plan for achieving acceptable DO levels in the tailwater areas.

Erosion Monitoring and Remediation

28. The EA noted that freshwater mussels are highly sensitive to sedimentation and that there is a significant, project-related erosion problem below Oakdale Dam.¹⁸ Article 402 requires repair of the existing erosion and a plan and monitoring effort to prevent future erosion. Because erosion below Norway Dam is related to informal recreation access,¹⁹ Article 413, the recreation management plan, requires formal gravel parking lots be installed to reduce erosion.

Run-of-River Operation and Reservoir Levels

29. The EA concludes that operating both Norway and Oakdale developments to approximate instantaneous run-of-river so as to minimize unnatural downstream fluctuations would protect and enhance fish and aquatic wildlife in the Tippecanoe River.²⁰ The EA also concludes that stable lake levels are closely related to operating in a run-of-river mode and also provide recreational and habitat benefits.²¹ Accordingly, Article 403 requires, during normal operations, Lake Shafer to be maintained at an elevation of 647.47 ± 0.25 feet NGVD as measured at the dam, and Lake Freeman to be maintained at 612.45 ± 0.25 feet NGVD as measured at the dam. In addition, the project shall be operated such that the outflow from the Norway Dam approximates the sum of

¹⁷ EA at 29 and 30.

¹⁸ *Id.* at 42.

¹⁹ *Id.*

²⁰ *Id.* at 25-27. With the 1920s vintage equipment at the Norway and Oakdale Dams, precise matching of dam outflow to reservoir inflow is impossible.

²¹ *Id.* at 26.

inflows to Lake Shafer, and the outflow from the Oakdale Dam approximates the sum of inflows to Lake Freeman.

30. Monitoring of flow and lake levels is essential to ensuring compliance and to developing information to refine the definition of “abnormal river conditions” (see below). The EA concluded that a mechanism for public verification of lake levels was important as well.²² Accordingly, Article 404 requires a project operation compliance plan.

31. Exceptions to the lake level requirements are inevitable at times of “abnormal river conditions” (e.g., flooding or ice jam formation). Article 403 provides a definition of “abnormal river conditions.” However, Indiana DNR and Interior recommend that as monitoring information becomes available, modifications to the definition may be warranted. In the EA, staff supports this conclusion.²³ Article 405, therefore, establishes a process for refining the definition.

Reservoir Drawdowns and Tailwater Rampdowns

32. Reservoir drawdowns are sometimes necessary for maintenance, repairs, and in emergency situations. In order to refill the reservoir, the tailwater flow must be reduced. Both drawdown of the reservoir pool elevation and rampdown of the tailwater flow can be harmful to fish, mussels, and aquatic wildlife, particularly if done too quickly. Accordingly, Article 406 establishes reservoir drawdown and tailwater rampdown rates to protect fish, mussels, and aquatic wildlife. The tailwater rampdown rates in Article 406 apply unless monitoring indicates that changes to the rampdown rates are warranted.

33. The EA²⁴ noted that some fish and mussels were stranded or exposed at the tailwater rampdown rate employed in developing the license application. Given these minor, but notable impacts, staff concluded that further monitoring for fish and mussel stranding is necessary and that changes to rampdown procedures may be warranted. Monitoring for fish and mussel stranding and possible changes to the rampdown rate plan are required by Article 408.

²² *Id.* at 29.

²³ *Id.* at 28.

²⁴ *Id.* at 37-38.

Woody Debris Management Plan

34. The EA pointed out that large woody debris provides important fish habitat.²⁵ Accordingly, Article 409 requires a woody debris management plan. The Conservation Corporation's comments on the draft EA, and incorporated in the final EA, identified concerns about passage of trash, potentially intermingled with large woody debris downstream of the dams. Article 409 also addresses the removal and disposal of non-organic matter (plastic, styrofoam, etc.) collected at project dams.

Mussel Population Enhancement

35. The Tippecanoe River supports a diversity of mussels with 57 historical species and 48 extant species. Among the extant species are several that carry either state or federal special status designation and have exhibited declines in distribution since surveys completed in 1987, 1991, 1995, and most recently in 2003.²⁶ The EA concluded that, while fish entrainment mortality was not significant enough to warrant downstream fish passage measures, overcoming fragmentation of mussel populations was a compelling reason to do so.²⁷ Mussel larvae are transported on fish hosts. Passing those hosts downstream can enhance mussel populations below the dam. Accordingly, Article 410 requires a downstream mussel host fish passage plan. The EA also concluded that the Norway-Oakdale Project structures contribute to the isolation of mussel populations and project operations could continue to affect mussel populations.²⁸ Therefore, Article 411 requires that NIPSCO, in consultation with Interior and the Indiana DNR, develop and implement a mussel enhancement plan.

Project Boundary

36. The Norway and Oakdale developments have been operating since 1923 and 1925, respectively, without a license. In 1921 the Federal Power Commission (the Commission's predecessor) concluded that the developments proposed for construction were not required to be licensed.²⁹ In 1980, the Commission again determined, in

²⁵ *Id.* at 41.

²⁶ *Id.* at 34.

²⁷ *Id.* at 39-41.

²⁸ *Id.* at 40-41.

²⁹ *See* First Annual Report of the Federal Power Commission at 123 (1921), and
(continued)

response to NIPSCO's request for a declaratory order, that the project was not required to be licensed. The order concluded that, "despite substantial historical research by the Commission staff, there is insufficient evidence available at this time to find that the Tippecanoe River is navigable in the vicinity of the project."³⁰

37. In 1995, after the Commission twice concluded that the project was not required to be licensed, NIPSCO conveyed its ownership of approximately 2,000 acres of shoreline and the reservoir beds of the two developments to the Conservation Corporation, a not-for-profit organization whose main goal is to manage these lands for public, charitable, recreational, conservation, and environmental purposes. The conveyed acreage constitutes about 85 percent of project lands. Under the agreement to convey the lands, NIPSCO retained the rights to operate the two project developments. These conveyed lands do not include the real property in and around the Norway and Oakdale dams, which NIPSCO owns in fee title. Another 14 percent of lands under the reservoir and along the shore are privately owned by approximately 4,300 residents who live along the shores of Lake Shafer and Lake Freeman. For these lands, NIPSCO holds a prescriptive easement.

38. Then, in September 2000, the Commission issued an order finding that the Tippecanoe River is navigable, and determined that the Norway-Oakdale Project is required to be licensed.³¹ NIPSCO now asks that the lands conveyed to the Conservation Corporation and the other privately owned lands be excluded from the project boundary. NIPSCO argues that requiring it to obtain additional property rights in those lands (and the lands of some 4,300 landowners for which it has a prescriptive easement) is not feasible. NIPSCO states that over the 80-year period that the project operated without a license, the Commission twice concluded that the project was not required to be licensed. NIPSCO explains that the extensive residential, commercial, and recreational development around the reservoirs occurred during this period, and the nature of the rights it holds in project lands evolved over time as well.

39. All lands and project facilities that are necessary for operation and maintenance of the project must be included in the license and enclosed within the project's boundary. The Norway and Oakdale reservoirs are necessary to the operation of the project and are, therefore, project works that must be licensed and included within the project boundary.

NIPSCO's filing of June 28, 2006 at 3-5.

³⁰ *Northern Indiana Public Service Company*, 12 FERC ¶ 61,274 at 61,644 (1980).

³¹ 92 FERC ¶ 62,258 (2000).

Under standard Article 5 of the license, NIPSCO must have sufficient rights in project property and facilities to ensure that it can carry out its responsibilities under the license. NIPSCO owns the dams, and has the rights to access, operate, and maintain the project. In addition, as discussed in the next section, the Conservation Corporation manages the reservoirs through a permitting system and development guidelines that ensure that lake activities are consistent with project purposes.³²

40. While the Commission typically will require that a licensee hold title to the lands that comprise the project reservoir, I conclude that under the unique circumstances of this case, where the prospective licensee disposed of reservoir lands in good faith after repeated determinations by the Commission that the project was not required to be licensed and where the prospective licensee has retained sufficient rights to operate and maintain the project, the project can be licensed without the acquisition of title to the reservoir lands. Article 203 requires NIPSCO to modify the proposed project boundary to incorporate the Norway and Oakdale reservoirs, as well as the three recreation sites (discussed below) that NIPSCO will provide under this license.

*Lake Management*³³

41. NIPSCO must ensure that lake activities, such as boat dock and retaining wall construction or installation, are consistent with project license requirements, purposes, and operations. However, since NIPSCO owns less than one percent of the lands surrounding the project, NIPSCO is currently unable to enforce a lake management plan for the reservoirs. Instead, NIPSCO relies on the Conservation Corporation to manage lake activities. The Conservation Corporation administers a permitting system that establishes guidelines for shoreline development at both reservoirs.³⁴ To obtain a permit to construct a boat dock (both permanent and temporary), a retaining wall, or any other structure, applicants must submit detailed construction plans, and follow guidelines which specify the type of materials that are allowed to be used in construction. Also the guidelines specify the type of vegetation that can be removed, and areas of allowable soil

³² 1995 Shafer and Freeman Lakes Environmental Conservation Corporation Land Conveyance Agreement.

³³ This plan was referred to as a shoreline management plan in the EA.

³⁴ The Conservation Corporation owns and manages 85 percent of project lands. The 14 percent of the project lands that are privately owned are not subject to the Conservation Corporation's permitting system.

disturbance. No construction can begin without an approved permit, and the Conservation Corporation maintains the right to require the removal of the structure.³⁵

42. Staff determined that the Conservation Corporation's permitting plan currently contains the measures needed to meet NIPSCO's responsibility to ensure that lake activities are consistent with project license requirements.³⁶ Therefore, NIPSCO does not need to develop a lake management plan for both reservoirs at this time. However, to fulfill its responsibilities, NIPSCO shall meet with the Conservation Corporation every six years and file a report with the Commission, noting any changes to the permitting plan. If in the future the Commission determines that the Conservation Corporation's lake management program is inconsistent with project purposes or is otherwise not in the public interest, the Commission reserves authority to require NIPSCO to implement a lake management plan (Article 414).³⁷

Recreation Management Plan

43. There are numerous recreational opportunities available in the Norway-Oakdale Project area, a regional recreation and tourist attraction.³⁸ While most of the recreational facilities in the project area are privately owned, with some available for use to the public for a fee, there are three publicly operated recreation facilities that provide picnicking, swimming, fishing, and boating opportunities. In addition, there are three public access sites near the tailraces of both developments that are used for boating and shoreline fishing.³⁹ NIPSCO owns and maintains one of the public access sites downstream of the Norway Dam, on the west bank of the river. The remaining two sites are owned and maintained by the Indiana DNR.

44. Bank fishing in the developments' tailwaters is quite popular. Staff determined⁴⁰ that the project lacks adequate facilities for shoreline anglers in the dams' tailwaters.

³⁵ EA at 56.

³⁶ *Id.*

³⁷ If this were to occur, under standard Article 5 of the license, NIPSCO might have to acquire additional property rights to implement such a plan.

³⁸ *Id.* at 58-59.

³⁹ *Id.* at 58.

⁴⁰ *Id.* at 62-63.

Therefore, I adopt the EA's recommendation to require NIPSCO to provide additional access areas in the tailwaters of the Norway and Oakdale dams. NIPSCO's installation of designated gravel parking areas at each tailwater area, directional signage to the tailwater facilities, and a portable toilet at each area would enhance recreation opportunities in the tailwater areas downstream of the project dams and minimize the potential for erosion.⁴¹ To ensure public safety, the access areas would be located at least 300 feet downstream of the dams.

45. NIPSCO proposes to implement pedestrian and boat access restrictions that would prohibit access from the toe of the dams to about 300 feet downstream from the dams, and place chain-link fencing topped with barbed wire along the shoreline from the toe of the dams to about 100 feet downstream from the dams, to enhance project security and public safety. Less than one percent of the shoreline would be restricted from the public. Staff determined the restrictions to be reasonable and appropriate for project security and public safety.⁴²

46. Invasive species are present at the project. However, NIPSCO does not have the ability to enforce the management or eradication of invasive plants because it owns a minimal portion of the shoreline. Staff recommended interpretive signs be installed on NIPSCO-owned land to educate the public about invasive species and appropriate means to control the spread of such species.⁴³

47. The development of a recreation management plan for the project would ensure that tailrace recreational enhancements are implemented, the pedestrian and boat access restrictions at the tailraces are installed, and the interpretive signs concerning invasive plant species are posted. Also a recreation management plan allows NIPSCO and various stakeholders to carefully plan for existing and future recreational needs at the project. Article 413 requires that NIPSCO prepare and file a recreation management plan.

Use and Occupancy of Project Lands and Waters

⁴¹ *Id.* at 114.

⁴² *Id.* at 88-89.

⁴³ *Id.* at 49.

48. Requiring a licensee to obtain prior Commission approval for every non-project use or occupancy of project land would be unduly burdensome. Therefore, Article 416 allows the licensee to grant permission, without prior Commission approval, for the use and occupancy of project lands for such minor activities as landscape planting. Such uses must be consistent with the purposes of protecting and enhancing the scenic, recreational, and environmental values of the project.

Exhibit F and G Drawings

49. The Commission requires licensees to file sets of approved project drawings on microfilm and in electronic file format. Article 202 requires the filing of the appropriate Exhibit F drawings. Article 203 requires the licensee to file revised Exhibit G (Project Boundary) drawings for Commission approval because the Exhibit G drawings, as revised and filed with the Commission on June 28, 2006, include only land owned by NIPSCO (about one percent of project related lands) and do not include the project's two impoundments or any of the recreational facilities.

Annual Charges

50. The Commission collects annual charges from licensees for administration of the FPA. Article 201 provides for the collection of funds for the administration of Part I of the FPA.

Amortization Reserve

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

Headwater Benefits

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

53. Section 10(a)(2)(A) of the FPA⁴⁴ 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.⁴⁵ Under section 10(a)(2)(A), federal and state agencies filed three comprehensive plans that address various resources in Indiana. Staff reviewed the comprehensive plans and determined that all three are relevant to this project.⁴⁶ No conflicts were found.

APPLICANT'S PLANS AND CAPABILITIES

54. In accordance with sections 10(a)(2)(C) and 15(a) of the FPA,⁴⁷ Commission staff evaluated NIPSCO's record in these areas: (1) conservation efforts; (2) safe management, operation, and maintenance of the project; (3) ability to provide efficient and reliable electric service; (4) need for power; (5) transmission services; (6) cost effectiveness of plans; and (7) actions affecting the public. I accept the staff's findings in all areas.

Conservation Efforts

55. Section 10(a)(2)(C) of the FPA requires the Commission to consider the applicant's electricity consumption program, including its plans, performance, and capability for encouraging or assisting its customers to conserve electricity cost-effectively, taking into account the published policies, restrictions, and requirements of state regulatory authorities. NIPSCO is actively involved in promoting cost-effective conservation and load management programs for residential, commercial, and industrial customers. Staff concludes that NIPSCO is making reasonable efforts in encouraging energy conservation.

Safe Management, Operation, and Maintenance of the Project

⁴⁴ 16 U.S.C. § 803(a)(2)(A) (2000).

⁴⁵ Comprehensive plans for this purpose are defined at 18 C.F.R. § 2.19 (2007).

⁴⁶ The list of applicable plans can be found in section IX of the final EA for the project.

⁴⁷ 16 U.S.C. §§ 803(a)(2)(C) and 808(a) (2000). Although FPA section 15(a) applies only to new licenses for previously licensed projects, I find that it is in the public interest to make the section 15(a) findings (except for compliance history) for this project, which has been operating without a license.

56. Staff has reviewed NIPSCO's management, operation, and maintenance of the Norway-Oakdale Project pursuant to the requirements 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 NIPSCO cannot continue to safely manage, operate, and maintain these facilities under an original license.

Ability to Provide Efficient and Reliable Electric Service

57. Staff has reviewed NIPSCO'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 NIPSCO's personnel regularly inspect the project turbine-generator units to ensure they continue to perform in an optimal manner, schedule maintenance to minimize effects on energy production and since the project has been in operation, have undertaken several initiatives to ensure the project is able to operate reliably into the future. Staff concludes that NIPSCO is capable of operating the project to provide efficient and reliable electric service in the future.

Need for Power

58. To assess the need for power, staff looked at the needs in the operating region in which the project is located – Reliability First Corporation (RFC) of the North American Electric Reliability Council (NERC). NERC annually forecasts electrical supply and demand nationally and regionally for a 10-year period. According to NERC's 2006 forecast,⁴⁸ average annual demand requirements for the RFC region is projected to grow at a rate of 1.6 percent from 2006 through 2015. Staff concludes that the project's low cost power, displacement of non-renewable fossil-fired generation, and contribution to the region's diversified generation mix will help meet the need for power in the region.

Transmission Services

59. FPA section 15(a)(1)(3)(A) requires that the Commission considers existing and planned transmission services of the applicant. The project includes a 69-kilovolt transmission line approximately two miles long connecting the Norway development to Monticello, Indiana. NIPSCO is proposing no changes that would affect its own or other transmission services in the region. The project and its transmission line are important

⁴⁸ 2006 Long-Term Reliability Assessment. The Reliability of Bulk Electric Systems in North America. North American Electric Reliability Council. October 2006.

elements in providing power and voltage control to local Carroll and White County communities and the region.

Cost effectiveness of Plans

60. NIPSCO proposes no changes that would increase generation at the Norway-Oakdale Project. With the two developments' hydraulic capacities seldom exceeded by Tippecanoe River flows and little to no storage, staff concludes that the project represents a cost-effective plan for using the river at this location.

Actions Affecting the Public

61. NIPSCO provided opportunity for public involvement in the development of the application for an original license for the Norway-Oakdale Project. During the over 80 years of operation, the project provided extensive boating opportunities during summer and snowmobiling and ice fishing during winter. NIPSCO uses the project to help meet its power needs and pays taxes that contribute to the cost of public services provided by local government.

PROJECT ECONOMICS

62. In determining whether to issue an original license for an existing hydroelectric project, the Commission considers a number of public interest factors, including the economic benefits of project power. Under the Commission's approach to evaluating the economics for hydropower projects, as articulated in *Mead Corp.*,⁴⁹ the Commission uses current costs to compare the costs of the project and likely alternative power, with no forecasts of potential future inflation, escalation, or deflation beyond the license issuance date. The basic purpose of the Commission's economic analysis is to provide a general estimate of the potential power benefits and the costs of a project and of reasonable alternatives to project power. The estimate helps to support an informed decision concerning what is in the public interest with respect to a proposed license.

63. In applying this analysis to the Norway-Oakdale Project, staff considered two options: NIPSCO's proposal and the project as licensed herein. As proposed by NIPSCO, the levelized annual cost of operating the project is \$1,899,350 or \$29.22/MWh. The proposed project would generate an estimated 65,000 MWh of energy annually. When we multiply our estimate of average generation by the alternative power

⁴⁹ 72 FERC ¶ 61,027 (1995).

cost of \$36.76/MWh⁵⁰ we get a total value of the project's power of \$2,389,400 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.⁵¹ Therefore, in the first year of operation, the project would cost \$490,050, or \$7.54/MWh, less than the likely alternative cost of power.

64. As licensed herein with the staff measures, the levelized annual cost of operating the project would be about \$1,913,940, or \$29.45/MWh. Based on an estimated average generation of 65,000 MWh as licensed, the project would produce power valued at \$2,389,400 when multiplied by \$36.76/MWh value of the project's power. Therefore, in the first year of operation, project power would cost \$475,460, or \$7.31/MWh, less than the likely cost of alternative power.

COMPREHENSIVE DEVELOPMENT

65. Sections 4(e) and 10(a)(1) of the FPA⁵² require the Commission to give equal consideration to the power development purposes and to the purposes of energy conservation, the protection, mitigation of damages to, and enhancement of fish and wildlife, the protection of recreational opportunities, and the preservation of other aspects of environmental quality. Any license issued shall be such as in the Commission's judgment will be best adapted to a comprehensive plan for improving or developing a waterway or waterways for all beneficial public uses. The decision to license this project, and the terms and conditions included herein, reflect such consideration.

66. The EA contains background information, analysis of impacts, and support for related license articles. I conclude, based on the record of this proceeding, including the EA, that licensing the Norway-Oakdale Project as described in this order would not constitute a major federal action significantly affecting the quality of the human environment. The project would be safe if operated and maintained in accordance with the requirements of this license.

67. Based on my independent review and evaluation of the project, recommendations from the resource agencies and other stakeholders, and the no-action alternative, as

⁵⁰ Based on NIPSCO's existing coal-fired generation.

⁵¹ Details of staff's economic analysis for the project as licensed herein and for various alternatives are included in the EA issued February 16, 2007.

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

documented in the EA, I have selected the proposed Norway-Oakdale Project with the staff-recommended measures, and find that it is best adapted to a comprehensive plan for improving or developing the Tippecanoe River.

68. I selected this alternative because: (1) issuance of an original license will serve to maintain 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 65,000 MWh of energy generated from this renewable resource will continue to offset the use of fossil-fueled, steam-electric generating plants, thereby conserving nonrenewable energy resources and reducing atmospheric pollution.

LICENSE TERM

69. Section 6 of the FPA⁵³ provides that original licenses shall be issued for a period not to exceed 50 years. The Commission's general policy is to establish 30-year terms for projects with little or no redevelopment, new construction, new capacity, or environmental mitigation or enhancement measures; 40-year terms for projects with a moderate amount of such activities; and 50-year terms for projects with extensive measures.⁵⁴ This license authorizes no new construction or new capacity, and only a minor amount of new environmental enhancement measures. Consequently, a 30-year license term for the Norway-Oakdale Project is appropriate.

The Director orders:

(A) This original license is issued to Northern Indiana Public Service Company (licensee) for a period of 30 years, effective the first day of the month in which this order is issued, to operate and maintain the Norway-Oakdale Hydroelectric Project. This license is subject to the terms and conditions of the 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 in this order.

⁵³ 16 U.S.C. § 799 (2000).

⁵⁴ See *Consumers Power Company*, 68 FERC ¶ 61,077 at 61,383-84 (1994).

(2) Project works consisting of two separate developments.

Norway Development: (1) a 915-foot-long dam consisting of (a) a 410-foot-long, 34-foot-high earth-filled embankment with a concrete core wall; (b) a 225-foot-long, 29-foot-high concrete gravity overflow spillway with two-foot-high wooden flashboards; (c) a 120-foot-long, 30-foot-high concrete gated spillway with three 30-foot-wide, 22-foot-high flood gates; (d) an 18-foot-wide, 30-foot-high trash sluice housing, with one 8-foot-wide, 11-foot-high gate; and (e) a 142-foot-long, 64-foot-wide powerhouse integral with the dam, containing four vertical Francis turbine-generating units with a total authorized installed capacity of 7.2 MW; (2) a reservoir 10 miles long, having a surface area of 1,291 acres at a pool elevation of 647.47 NGVD (Lake Shafer); (3) a 2-mile-long, 69,000-volt primary transmission line; and (4) appurtenant facilities.

Oakdale Development: (1) a 1,688-foot-long dam consisting of (a) a 126-foot-long, 58-foot-high east concrete buttress and slab dam connecting the left abutment to the powerhouse; (b) a 114-foot-long, 70-foot-wide powerhouse integral with the dam, containing three vertical Francis turbine-generating units with a total authorized installed capacity of 9.2 MW; (c) an 18-foot-wide structure containing a non-functional fish ladder and a gated trash sluice; (d) an 84-foot-long ogee-shaped concrete gated spillway with two 30-foot-wide, 22-foot-high vertical lift gates; (e) a 90-foot-long, six-bay concrete gravity siphon-type auxiliary spillway; and (f) a 1,260-foot-long west earth-filled embankment with a maximum height of 58 feet and a 30-foot-wide crest; (2) a reservoir 10 miles long, having a surface area of 1,547 acres at a pool elevation of 612.45 NGVD (Lake Freeman); and (3) appurtenant facilities.

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

Exhibit A: The section entitled "Project Description," pages A-1 through A-12, describing the mechanical, electrical, and transmission equipment within the application for license filed on June 28, 2004.

Exhibit F: The following sections of exhibit F filed on June 28, 2004, and revised on January 5, 2005:

<u>Exhibit F Drawing</u>	<u>FERC No.</u> <u>12514-</u>	<u>Description</u>
Exhibit F-1	1	Norway Development Plan and Elevation
Exhibit F-2	2	Norway Development Sections

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		Through Dam and Spillway
Exhibit F-3	3	Norway Facility Powerhouse Plan
Exhibit F-4	4	Norway Development Powerhouse Section
Exhibit F-5	5	Oakdale Development Plan and Elevation
Exhibit F-6	6	Oakdale Development Flood Gate Spillway Section
Exhibit F-7	7	Oakdale Development Powerhouse Plan & Elevation
Exhibit F-8	8	Oakdale Development Powerhouse Section
Exhibit F-9	9	Oakdale Development East Dam Section
Exhibit F-10	10	Oakdale Development Right Earth Embankment Section

(3) All of the structures, fixtures, equipment, or facilities used to operate or maintain the project and located within the project boundary, all portable property that may be employed in connection with the project, and located within or outside the project boundary, 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 the license. The Exhibit G drawings filed as part of the application for license and supplemented on June 28, 2006, do not include the project's two impoundments or its recreation facilities, and are not approved. Article 203 requires the filing of revised exhibit G drawings.

(D) This license is also subject to the articles set forth in Form L-3 (October 1975), entitled "Terms and Conditions of License for Constructed Major Project Affecting Navigable Waters of the United States" (*see* 54 FPC 1799 *et seq.*) and the following additional articles:

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Article 201. *Administrative Annual Charges.* The licensee shall pay the United States annual charges, effective the first day of the month in which this license is issued, and as determined in accordance with provisions of the Commission's regulations from time to time, for the purpose of 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 16,400 kilowatts.

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

a) Three sets of the approved exhibit 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-1234-##### through P-1234-#####) 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.

Two of the sets of aperture cards shall be filed with the Secretary of the Commission, ATTN: OEP/DHAC. The third set shall be filed with the Commission's Division of Dam Safety and Inspections Chicago Regional Office.

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 Chicago Regional Office. Exhibit F drawings must be identified as critical energy infrastructure information (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-1234-#####, 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 min)
 DRAWING SIZE FORMAT – 24" X 36" (min), 28" X 40" (max)
 FILE SIZE – less than 1 M desired

Article 203. *Exhibit G Drawings.* Within 90 days of the issuance date of the

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license, 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, including the project's two impoundments (i.e., Lakes Shafer and Freeman), the existing two-mile-long Norway primary transmission line, the licensee's existing recreation facility downstream of the Norway dam, and the recreation facilities specifically authorized in this license. The Exhibit G drawings must comply with 18 C.F.R. §§ 4.39 and 4.41 of the Commission's regulations.

Article 204. *Amortization Reserve.* Pursuant to section 10(d) of the Act, after the first 20 years of operation of the project under license, a specified reasonable rate of return upon the net investment in the project shall be used for determining surplus earnings of the project for the establishment and maintenance of amortization reserves. One-half of the project surplus earnings, if any, accumulated after the first 20 years of operations under the license, in excess of the specified rate of return per annum on the net investment, shall be set aside in a project amortization reserve account at the end of each fiscal year. To the extent that there is a deficiency of project earnings below the specified rate of return per annum for any fiscal year after the first 20 years of operation under the license, the amount of that deficiency shall be deducted from the amount of any surplus earnings subsequently accumulated, until absorbed. One-half of the remaining surplus earnings, if any, cumulatively computed, shall be set aside in the project amortization reserve account. The amounts established in the project amortization reserve account shall be maintained until further order of the Commission.

The annual specified reasonable rate of return shall be the sum of the annual weighted costs of long-term debt, preferred stock, and common equity, as defined below. The annual weighted cost for each component of the reasonable rate of return is the product of its capital ratio and cost rate. The annual capital ratio for each component of the rate of return shall be calculated based on an average of 13 monthly balances of amounts properly includable in the licensee's long-term debt and proprietary capital accounts as listed in the Commission's Uniform System of Accounts. The cost rates for long-term debt and preferred stock shall be their respective weighted average costs 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 will be 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 this 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. The benefits will be assessed in accordance with Part 11, Subpart B, of the Commission's regulations.

Article 301. As-built Drawings. Within 90 days after completing construction of the facilities authorized by this license, the licensee shall file for Commission approval revised Exhibits A, F, and G, as applicable, to describe and show those project facilities as built. A courtesy copy shall be filed with the Commission's D2SI-Chicago Regional Office, the Director, D2SI, and the Director, DHAC.

Article 401. Water Quality Monitoring and Compliance Plan. Within 120 days of license issuance, the licensee shall file a Water Quality Monitoring and Compliance Plan. The purpose of the plan is to provide dissolved oxygen (DO) levels in the project tailraces that meet state standards and thus support fish, mussels, and other aquatic resources below the project dams.

The plan shall include, at a minimum: (1) a description of dissolved oxygen monitoring equipment, locations, and methods; (2) all water quality monitoring data collected to date, organized by year; (3) proposed solutions to low dissolved oxygen in the tailwaters either designed by the licensee or recommended by the Indiana Department of Environmental Management (Indiana DEM) (e.g., changes to operations, spills over the dam, or turbine venting); (4) a provision for filing annual monitoring reports as necessary; and (5) a schedule for implementing the plan as well as a schedule for implementing any identified solutions to improve dissolved oxygen conditions in the river. The licensee shall monitor dissolved oxygen levels below the dams until Indiana DEM and the Commission determine that monitoring is no longer needed.

The plan shall be developed in consultation with the Indiana DEM. The licensee shall submit documentation of its consultation with Indiana DEM regarding the plan and reports. Documentation shall include copies of comments and recommendations on the completed plan and reports after they have been prepared and provided to the Indiana DEM, and specific descriptions of how Indiana DEM's comments are accommodated by the plan and reports. The licensee shall allow a minimum of 30 days for the agencies to comment and to make recommendations before filing the plan and monitoring reports 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. Upon Commission approval, the plan becomes a requirement of the license and the licensee shall implement the plan, including any changes required by the Commission. If the

monitoring reports indicate that changes in project structures or operations are necessary to protect aquatic resources from effects of low DO or altered water temperatures, the Commission may direct the licensee to modify project structures or operations.

Article 402. Erosion Monitoring and Remediation Plan. Within one year of license issuance, the licensee shall file with the Commission, for approval, an erosion monitoring and remediation plan for the east bank of the Oakdale development tailrace. The objectives of the plan are to: (a) repair erosion downstream from Oakdale Dam; (b) prevent the reoccurrence of erosion in this area; and (c) monitor the area for future erosion.

The plan, at a minimum, shall include the following elements:

- (1) detailed construction plans (including design drawings) for repairing the erosion on the steep east bank of the Tippecanoe River immediately below Oakdale Dam. The construction plan shall include a schedule for undertaking the remediation work, with the initiation of the repair commencing before the end of the second year following the issuance of this license;
- (2) a plan to monitor erosion rates along the east bank immediately below Oakdale Dam. The monitoring shall commence immediately after the repair of the eroded bank, and occur at 1, 2, and 5 years after the repair, then every ten years thereafter for the term of the license; and
- (3) a schedule for implementing the plan, as well as for filing reports that document the findings of the monitoring. The reports shall identify any actions the licensee may need to take to address erosion problems in this area that are attributed to project operations.

The plan and monitoring reports shall be developed in consultation with the Indiana Department of Natural Resources and U.S. Fish and Wildlife Service. The licensee shall include with the plan and monitoring reports documentation of consultation with agencies, copies of comments and recommendations on the completed plan and monitoring reports, and specific descriptions of how the agencies' comments are accommodated. The licensee shall allow a minimum of 30 days for the agencies to comment before filing the plan and monitoring reports with the Commission. If the licensee does not adopt a recommendation, the filings shall include the licensee's reasons, based on site-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. If the monitoring reports indicate that changes in project structures or operations are necessary to protect aquatic resources from effects of erosion, the Commission may direct the licensee to modify project structures or operations.

Article 403. *Run-of-River Operation and Reservoir Levels.* Within 30 days of license issuance, the licensee shall, to the maximum extent practicable, operate the Norway-Oakdale Project in an instantaneous run-of-river mode such that the outflow from the Norway Dam approximates the sum of inflows to Lake Shafer and the outflow from the Oakdale Dam approximates the sum of inflows to Lake Freeman.

The licensee shall operate Lake Shafer within ± 0.25 feet of elevation 647.47 feet National Geodetic Vertical Datum (NGVD) and Lake Freeman within ± 0.25 feet of 612.45 feet NGVD for Lake Freeman. The licensee shall at all times act to minimize the fluctuation of the two reservoirs' surface elevations by maintaining discharges from the project so that, at any point in time, flows, as measured immediately downstream from the project tailraces, approximate the sum of inflows to the project reservoirs. For both developments, river flow is to be passed on an instantaneous basis at times when the turbines are not in operation.

Run-of-river operation and reservoir surface elevations may be temporarily modified if required by operating emergencies beyond the control of the licensee, for short periods upon mutual agreement among the licensee, the Indiana Department of Natural Resources (Indiana DNR) and the U.S. Fish and Wildlife Service (FWS), or under "abnormal river conditions" as defined below. If project operations and reservoir elevations are so modified, the licensee shall (a) notify the Commission, the Indiana DNR, and the FWS as soon as possible, but no later than 10 days after each such incident and (b) include an incident report as described in Article 404.

Until or unless refined pursuant to Article 405, "abnormal river conditions" shall be defined as conditions with river flows of 3,000 cubic feet per second (cfs) or higher, or hourly increases in river flow of 100 cfs or greater at both project dams. Under "abnormal river conditions," as defined by river flow, the licensee shall at all times act to maintain the fluctuation of the reservoir surface elevation within 0.75 feet above (rather than 0.25 feet under normal conditions) and 0.25 feet below elevation 647.47 feet NGVD for Lake Shafer and 0.75 feet above and 0.25 feet below 612.45 feet NGVD for Lake Freeman.

Article 404. *Project Operation Compliance Plan.* Within 180 days of the license issuance, the licensee shall file for approval a project operation compliance plan that describes how the licensee will comply with the operational requirements of this license,

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including lake levels and operational flows, as required by Article 403.

The plan shall include the following provisions, at a minimum:

(1) a description of all gages (including staff gages) and other equipment, existing or to be installed, and the required degree of precision of each device necessary to monitor the following parameters:

- (a) water levels in Lake Shafer and Lake Freeman, as required by Article 403;
- (b) tailwater flows below Norway and Oakdale Dams; and
- (c) flows in the Tippecanoe River downstream of both developments.

(2) collection of the following data on an hourly basis:

- (a) lake levels for Lake Shafer and Lake Freeman; and
- (b) tailwater discharge from Lake Shafer and Lake Freeman.

(3) procedures for recording, maintaining, and sharing project operations data, including publication of the information in a current, downloadable format on the licensee's or another website and reporting of appropriate project operations and flow data to the resource agencies and the Commission;

(4) a method of independently verifying lake elevations. Either permanent staff gages shall be installed at publicly visible locations near or on each dam, or lake elevations shall be measured using automated equipment with the licensee posting lake elevations on an hourly basis on a publicly accessible internet site. Lake level deviations shall be gaged and recorded to the nearest 0.05 foot;

(5) a gage calibration plan for all the gaging equipment identified to be part of the monitoring plan required by this article. Ongoing calibration of all such gaging equipment shall be performed at least quarterly; and

(6) a schedule for implementing the plan.

The plan shall also include provisions consistent with the emergency notification requirements for project operation and flows required by this license. In addition, should impoundment elevations or flows, as measured according to the approved monitoring plan, fall outside the parameters set by this license, the plan shall include a provision

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whereby the licensee files with the Commission a report of the incident within 10 days of the occurrence.

Any incident report shall, to the extent possible, identify the cause, severity, and duration of the incident, and any observed or reported adverse environmental effects resulting from the incident. The report shall also include: (1) operational and flow data necessary to determine compliance with this article; (2) a description of any corrective measures implemented at the time of the occurrence and the measures implemented or proposed to ensure that similar incidents do not recur; and (3) comments or correspondence, if any, received from agencies, regarding the incident. Based on the report and the Commission's evaluation of the incident, the Commission reserves the right to require modifications to project facilities and operations to ensure future compliance.

The licensee shall prepare the plan in consultation with the Indiana Department of Natural Resources and the U.S. Fish and Wildlife Service. 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. The licensee shall include with the plan documentation of agency consultation, copies of comments and recommendations, and specific descriptions of how the agencies' comments are accommodated by the plan. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on site-specific information.

The Commission reserves the right to require changes to the plan. No ground-disturbing or land-clearing activities for installation and use of monitoring devices shall begin until the Commission notifies the licensee that the plan is approved. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission. Any existing equipment or equipment installed in accordance with this article shall be shown on the as-built drawings filed pursuant to Article 301 of this license.

Article 405. *Definition of "Abnormal River Conditions."* No later than five years from issuance of this license, the licensee shall file for Commission approval a modified definition for "abnormal river conditions" for use in defining conditions under which the licensee can operate the reservoirs with a greater range of surface elevation (see Article 403). The licensee shall include with its proposed definition a report on project operations, including the monitoring and compliance data collected through at least the first four years after license issuance.

The definition of "abnormal river conditions" shall be developed in consultation with the Indiana Department of Natural Resources and the U.S. Fish and Wildlife

Service. The licensee shall include with its filing documentation of consultation, copies of comments and recommendations on the proposed definition after it has been prepared and provided to the agencies, and specific descriptions of how the agencies' comments are accommodated by the proposed definition. The licensee shall allow a minimum of 30 days for the agencies to comment and to make recommendations before filing the proposed definition 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 this definition. Changes in project operation shall not begin until the licensee is notified by the Commission that the definition is approved. Upon Commission approval, the licensee shall implement the definition, including any changes required by the Commission.

Article 406. *Reservoir Drawdown and Tailwater Rampdown Rates.* Within 30 days of the issuance date of this license, the licensee shall implement the reservoir drawdown and tailwater ramping rates described below at the Norway-Oakdale Project. The purpose of these drawdown and tailwater ramping restrictions is to prevent stranding of fish and mussels.

Until the Tailwater Rampdown Rate Plan required by Article 408 is developed, the licensee shall operate the project so that the rate of drop in tailwater surface elevation in both project tailwaters does not exceed a constant rate of four inches every hour. This tailwater rampdown rate may be temporarily modified if required by operating emergencies beyond the control of the licensee, or for short periods upon mutual agreement between the licensee and the Indiana Department of Natural Resources (Indiana DNR) and the U.S. Fish and Wildlife Service (FWS).

The licensee shall operate the project so that the drawdown of Lake Shafer or Lake Freeman does not exceed a constant rate of one foot every eight hours to prevent stranding of mussels or fish on shallow water habitat. This drawdown rate may be temporarily modified if required by operating emergencies beyond the control of the licensee, or for short periods for project maintenance purposes, upon mutual agreement between the licensee, Indiana DNR, and FWS.

If the reservoir drawdown rate or tailwater rampdown rate are so modified, the licensee shall (a) verbally notify the Indiana DNR and FWS within 24 hours and (b) as soon as possible, but not later than 10 days after each such incident, provide the Commission, Indiana DNR, and FWS an incident report as described in the Project Operation Compliance Plan required by Article 404.

Article 407. *Annual Planning for Reservoir Drawdown.* In January of each year under this license, the licensee shall host a meeting to determine the extent, duration, ramping rate, and schedule of any drawdowns of Lake Shafer and Lake Freeman for the upcoming year. The licensee shall invite the Indiana Department of Natural Resources, Indiana Department of Environmental Management, the U.S. Fish and Wildlife Service, and the Shafer and Freeman Lake Environmental Conservation Corporation. Within 30 days of the meeting, the licensee shall submit a meeting report to the Commission that includes:

- (1) the drawdown schedule for the year;
- (2) the purpose of each drawdown;
- (3) the duration of each drawdown;
- (4) the rate of each drawdown;
- (5) the rate of refill after each drawdown and estimated resulting rate of drop in its tailwater;
- (6) if the licensee does not adopt a recommendation from a state or federal agency, the filing shall include the licensee's reasons, based on specific information; and
- (7) a brief summary of other items discussed under the topics of reservoir drawdowns, tailwater rampdowns, operations, monitoring, and compliance, etc.

If the report indicates that changes in project structures or operations are necessary to protect fish and mussels from effects of reservoir drawdowns or tailwater rampdowns, the Commission may direct the licensee to modify project structures or operations.

Article 408. *Long Term Tailwater Rampdown Rate Plan.* Within 90 days of the issuance of this license, the licensee shall develop a plan to monitor tailwater rampdown rates. Tailwater rampdown events are associated with refilling the reservoirs. The purpose of the plan is to develop the information necessary to establish a long term rampdown rate to protect fish, mussels, and other aquatic resources from stranding because of falling water levels.

The plan shall include:

- (1) a program for monitoring the effects of tailwater rampdown events on fish and mussels. The monitoring program shall include the following elements, at a minimum:
 - (a) the observations shall be made in conjunction with operational refill events to the extent possible to minimize the occurrence of artificially dewatering the tailwaters;
 - (b) the highest priority events for observation shall be those during the period including May through August when fish and mussel spawning is most likely to be affected. (Most events will occur in the late fall as directed in Article 406.);
 - (c) observers shall note the presence, stranding, or exposure of any fish, fish nests, mussels, mussel beds, or other aquatic life or habitat;
 - (d) the methods and preliminary results shall be (a) discussed at the annual reservoir drawdown meeting, and (b) included in the meeting report filed pursuant to Article 407;
 - (e) Indiana Department of Natural Resources (Indiana DNR) and the U.S. Fish and Wildlife Service (FWS) staff shall be invited to all planned observation events;
 - (f) the observations shall be made in the tailwaters of the reservoirs at the same locations identified in the pre-application studies or at other sites approved by Indiana DNR and FWS;
 - (g) observers shall record the starting time and tailwater level and width, ending time and tailwater level and width, rate of reduction in tailwater level and width; and
 - (h) observations shall be made at no fewer than two events at each tailwater.
- (2) a report on the results of tailwater rampdown monitoring with a proposal, based on the report, for a long term tailwater rampdown rate for reservoir refill that is protective of fish, mussels, and other aquatic resources; and
- (3) a schedule, not to exceed five years from the issuance date of this license, for completing the monitoring, report, and long term tailwater rampdown rate proposal.

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The plan shall be developed in consultation with the Indiana DNR and the FWS. The licensee shall include with its filings documentation of consultation, copies of comments and recommendations on the proposed plan after it has been prepared and provided to the agencies, and specific descriptions of how the agencies' comments are accommodated by the proposed 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. Changes in project operation shall not begin until the licensee is notified by the Commission that the plan is approved. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 409. Woody Debris Management Plan. Within 180 days of license issuance, the licensee shall file, for Commission approval, a plan to pass downstream large woody debris collected at the project dams. The purpose of this plan is to improve aquatic habitat in the river reaches below the dams.

The plan shall include at a minimum:

- (1) a definition of large woody debris;
- (2) the frequency and methods to be used for large woody debris passage;
- (3) a description of the strategies to remove and dispose of all non-organic debris collected at project dams; and
- (4) a schedule for implementing the plan.

The plan shall be prepared in consultation with the Indiana Department of Natural Resources and U.S. Fish and Wildlife 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. Changes in project operation shall not begin until the licensee is notified by the Commission that the

plan is approved. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 410. Downstream Mussel Host Fish Passage Plan. Within one year of license issuance, the licensee shall submit, for Commission approval, a downstream mussel host fish passage plan. The purpose of this plan is to improve downstream survival of mussel host fish at the Norway and Oakdale Dams.

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

- (1) identification of host fish species and specific passage time, if applicable;
- (2) identification of specific techniques, operational measures, or facilities modifications that would be employed to provide improved downstream passage of fish (e.g., spilling water over the dam, creating additional sluiceways, or other measures);
- (3) description of the mechanism(s) for evaluating the ability and effectiveness of the measures to improve downstream fish passage at the dams;
- (4) identification of alternative measures to implement if the initial measures do not function as designed;
- (5) an estimate of the cost for any proposed structural facility or operational modifications that are identified to improve downstream fish passage;
- (6) a provision to update, and re-file for Commission approval, the downstream fish passage plan, if necessary, to reflect information included in the Mussel Enhancement Plan required by Article 411; and
- (7) a schedule for implementing the plan.

The plan shall be developed in consultation with the Indiana Department of Natural Resources and U.S. Fish and Wildlife 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. No ground-disturbing or land-clearing activities for installation and use of fish passage devices or measures shall be implemented until the Commission notifies the licensee that the plan is approved. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission. Any existing equipment or equipment installed in accordance with this article shall be shown on the as-built drawings filed pursuant to Article 301 of this license.

Article 411. Mussel Enhancement Plan. Within five years of license issuance, the licensee shall submit, for Commission approval, a mussel enhancement plan. The purpose of this plan is to increase the population of native mussel species in the Tippecanoe River. In addition, the plan shall describe the licensee's responsibilities to enhance endangered and candidate mussel populations in the project area of the Tippecanoe River.

The enhancement plan shall include, at a minimum:

- (1) a list of the target species of mussels to be enhanced;
- (2) a list of the fish host species (for each of the target mussel species) and whether or not they are present or would need to be reintroduced to the restoration sites;
- (3) identification of suitable habitat sites for reintroduction, including showing the sites on a map;
- (4) the name and location of the hatchery, laboratory, or aquaculture facility that will be used to rear target mussel species;
- (5) a description of the methodologies to be used to implement the plan, similar to the level of detail found in the Mussel Coordination Team's 2003 report⁵⁵ including identification of the party or parties who will be responsible for each aspect of the plan;

⁵⁵ Mussel Coordination Team. 2003. Saving the Higgins' Eye Pearlymussel (*Lampsilis higginsii*) from Extinction: 2002 Status Report on the Accomplishments of the Mussel Coordination Team. (link to PDF file of report at http://www.fws.gov/midwest/mussel/images/mct_2002_figure1.html).

- (6) a description of the follow-up surveys and measures that will be implemented to monitor and determine the extent of the program's success, including identification of the party or parties who will carry out those surveys;
- (7) a provision to coordinate the mussel enhancement plan with the closely-related Downstream Mussel Host Fish Passage Plan, required by Article 410;
- (8) the estimated costs, including identifying the source of funding, for each aspect of the mussel enhancement/restoration program; and
- (9) a schedule for implementing the plan.

The licensee shall develop and implement mussel enhancement plan in consultation with Indiana Department of Natural Resources and the U.S. Fish and Wildlife Service. 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. The licensee shall include with the plan documentation of agency consultation, copies of comments and recommendations, and specific descriptions of how the agencies' comments are accommodated by the plan. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons for not doing so, based on site-specific information.

The Commission reserves the right to require changes to the plan. This plan shall not be implemented until the Commission notifies the licensee that the plan is approved. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 412. *Reservation of Authority – 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 413. *Recreation Management Plan.* Within one year of the issuance date of this license, the licensee shall file, for Commission approval, a recreation management plan. The purpose of this plan is to enhance recreation resources at the project.

The plan shall include, at a minimum, the following:

- (1) final designs of the proposed pedestrian and boat access restrictions downstream of the Norway and Oakdale Dams, including signage approximately 300 feet downstream of both dams, and fencing approximately 100 feet downstream of both dams;
- (2) provisions for developing and posting interpretive signs about invasive plant species (e.g., purple loosestrife) at the designated parking areas of both the Norway and Oakdale tailraces and providing this information to the Conservation Corporation. The information provided on the interpretive signs shall include the life history, identification, ecological threats,⁵⁶ and control measures for purple loosestrife and other invasive plant species, if such species should become established within the project boundary during the term of this license;
- (3) a description of measures, including:
 - (a) final designs for one designated gravel parking area downstream of the Norway Dam's tailrace on the east bank;
 - (b) final designs for one designated gravel parking area downstream of the Oakdale Dam's tailrace;
 - (c) directional signage to each of the tailrace facilities; and
 - (d) a portable toilet at each of the Norway and Oakdale tailraces.
- (4) a schedule for implementing the pedestrian and boat access restrictions;
- (5) a schedule for constructing a gravel parking area, portable toilets, directional signage, and interpretive signage for invasive plant species at each of the tailraces;
- (6) a provision to update the recreation management plan every six years to coincide with the filing of the FERC Form 80; and

⁵⁶ Ecological threats of invasive plants can include changing ecosystem structure and function by crowding out native plants that provide foraging and nesting sites for wildlife and resting sites for migrating birds. Invasive plants can also alter required habitat conditions for special-status plant and wildlife species, thereby jeopardizing their continued presence in the environment.

(7) provisions to consult with the Indiana Department of Natural Resources (Indiana DNR), White County, Carroll County, the City of Monticello, and the Shafer and Freeman Lakes Environmental Conservation Corporation (Conservation Corporation) prior to the update of the recreation plan.

The licensee shall prepare the recreation plan in consultation with the Indiana DNR, White County, Carroll County, the city of Monticello, and the Conservation Corporation. 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 consulted entities, and specific descriptions of how the entities' comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the consulted entities to comment and make recommendations prior to filing the plan with the Commission for approval. 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. The plan shall not be implemented until the licensee is notified that the plan is approved. Upon Commission approval, the licensee shall implement the plan according to the approved schedule, including any changes required by the Commission. Any facilities built in accordance with this plan shall be shown on the as-built drawings filed pursuant to Article 301 of this license.

Article 414. Reservation of Authority –Lake Management Plan. Within six years of license issuance and every six years thereafter, the licensee shall host a meeting with the Shafer and Freeman Lakes Environmental Conservation Corporation (Conservation Corporation) to determine if there have been any changes to the Conservation Corporation's shore front guidelines, terms, and conditions. The licensee shall file a meeting summary in conjunction with the FERC Form 80. Authority is reserved to the Commission to require the licensee to develop a lake management plan. The Commission reserves the right to require changes to the plan.

Article 415. Programmatic Agreement and Historic Properties Management Plan. The licensee shall implement the “Programmatic Agreement Between the Federal Energy Regulatory Commission and the Indiana State Historic Preservation Officer for Managing Historic Properties that May be Affected by Issuance of a License to Northern Indiana Public Service Company for the Continued Operation of the Norway-Oakdale Project in Carroll and White Counties, Indiana (FERC No. 12514-000),” executed on March 22, 2007, and including but not limited to the Historic Properties Management Plan (HPMP) for the project. In the event that the Programmatic Agreement is terminated, the licensee shall implement the provisions of its approved HPMP. The

Commission reserves the authority to require changes to the HPMP at any time during the term of the license. If the Programmatic Agreement is terminated prior to Commission approval of the HPMP, the licensee shall obtain approval from the Commission and the Indiana State Historic Preservation Officer before engaging in any ground-disturbing activities or taking any other action that may affect any historic properties within the project's area of potential effect.

Article 416. 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 waters for which the licensee may grant permission without prior Commission approval are: (1) landscape plantings; (2) non-commercial piers, landings, boat docks, or similar structures and facilities that can accommodate no more than 10 water craft at a time and where said facility is intended to serve single-family type dwellings; (3) embankments, bulkheads, retaining walls, or similar structures for erosion control to protect the existing shoreline; and (4) food plots and other wildlife enhancement. To the extent feasible and desirable to protect and enhance the project's scenic, recreational, and other environmental values, the licensee 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. If no conveyance was made during the prior calendar year, the licensee shall so inform the Commission in writing no later than January 31 of each year.

(d) The licensee may convey fee title to, easements or rights-of-way across, or leases of project lands for: (1) construction of new bridges or roads for which all necessary state and federal approvals have been obtained; (2) sewer or effluent lines that discharge into project waters, for which all necessary federal and state water quality certification or permits have been obtained; (3) other pipelines that cross project lands or waters but do not discharge into project waters; (4) non-project overhead electric transmission lines that require erection of support structures within the project boundary, for which all necessary federal and state approvals have been obtained; (5) private or public marinas that can accommodate no more than 10 water craft at a time and are located at least one-half mile (measured over project waters) from any other private or public marina; (6) recreational development consistent with an approved report on recreational resources of an Exhibit E; and (7) other uses, if: (i) the amount of land conveyed for a particular use is five acres or less; (ii) all of the land conveyed is located at least 75 feet, measured horizontally, from project waters at normal surface elevation; and (iii) no more than 50 total acres of project lands for each project development are conveyed under this clause (d)(7) in any calendar year. At least 60 days before

conveying any interest in project lands under this paragraph (d), the licensee must 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; and (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.
- (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,

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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.

(E) 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.

(F) This order is final unless a request for rehearing is filed within 30 days from the date of its issuance, as provided in section 313(a) 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 license.

J. Mark Robinson
Director
Office of Energy Projects

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Form L-3
(October, 1975)

**FEDERAL ENERGY REGULATORY COMMISSION
TERMS AND CONDITIONS OF LICENSE FOR CONSTRUCTED
MAJOR PROJECT AFFECTING NAVIGABLE
WATERS 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 United States specifically retains and safeguards the right to use water in such amount, to be determined by the Secretary of the Army, as may be necessary for the purposes of navigation on the navigable waterway affected; and 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 Secretary of the Army may prescribe in the interest of navigation, and 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 Secretary of the Army may prescribe in the interest of navigation, or as the Commission may prescribe for the other 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. Material may be dredged or excavated from, or placed as fill in, project lands and/or waters only in the prosecution of work specifically authorized under the license; in the maintenance of the project; or after obtaining Commission approval, as appropriate. Any such material shall be removed and/or deposited in such manner as to reasonably preserve the environmental values of the project and so as not to interfere with traffic on land or water. Dredging and filling in a navigable water of the United States shall also be done to the satisfaction of the District Engineer, Department of the Army, in charge of the locality.

Article 22. Whenever the United States shall desire to construct, complete, or improve navigation facilities in connection with the project, the Licensee shall convey to the United States, free of cost, such of its lands and rights-of-way and such rights of passage through its dams or other structures, and shall permit such control of its pools, as may be required to complete and maintain such navigation facilities.

Article 23. The operation of any navigation facilities which may be constructed as a part of, or in connection with, any dam or diversion structure constituting a part of the project works shall at all times be controlled by such reasonable rules and regulations in the interest of navigation, including control of the level of the pool caused by such dam or diversion structure, as may be made from time to time by the Secretary of the Army.

Article 24. The Licensee shall furnish power free of cost to the United States for the operation and maintenance of navigation facilities in the vicinity of the project at the voltage and frequency required by such facilities and at a point adjacent thereto, whether said facilities are constructed by the Licensee or by the United States.

Article 25. The Licensee shall construct, maintain, and operate at its own expense such lights and other signals for the protection of navigation as may be directed by the Secretary of the Department in which the Coast Guard is operating.

Article 26. 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

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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 27. 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 28. 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.