

144 FERC ¶ 62,220
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Boyce Hydro Power, LLC

Project No. 2785-081

ORDER AMENDING LICENSE AND REVISING ANNUAL CHARGES

(September 9, 2013)

1. On September 11, 2012, and supplemented on January 14, 2013, Boyce Hydro Power, LLC (licensee) filed an application to amend its license for the Sanford Project No. 2785. The licensee proposes to replace the project's Unit No. 3 with a new, more efficient unit. The project is located on the Tittabawassee River in Midland County, Michigan.

BACKGROUND

2. The Commission issued a new license for the Sanford Project on December 1, 1987.¹ The project includes, in part, a 26-foot-high dam with one powerhouse that contains three turbine-generator units with a total authorized capacity of 3.3 megawatts (MW).

3. On October 16, 1998, the Commission amended the license, in part, to require new minimum flows below the dam.² This order amended Article 401 to require the licensee to release 650 cubic feet per second (cfs) during the walleye spawning period of March 15 through April 30 and 210 cfs during the rest of the year. These minimum flows were established based on the Commission's analysis contained in a Multiple Environmental Assessment (MEA) issued August 14, 1998.³

¹ Order Issuing License at 41 FERC ¶ 62,192.

² Order on Rehearing and Amending License at 85 FERC ¶ 61,066.

³ The MEA supported the licensing of the Secord Project No. 10809, Smallwood Project No. 10810, and the Edenville Project No. 10808, and the amendment of license for the Sanford Project. It also analyzed alternatives in the operating mode of the Sanford Project in support of a rehearing proceeding. All four projects are on the Tittabawassee River.

LICENSEE'S PROPOSAL

4. The licensee proposes to replace the project's turbine-generator Unit No. 3 with a new, more efficient unit that would have a broader operating range. The existing unit is 69 percent efficient and cannot operate below 530 cfs.⁴ The new unit would be 85 percent efficient and could be operated with flows as low as 150 cfs. The new unit would have the same design flow of 720 cfs and the same maximum hydraulic capacity of 750 cfs as the existing unit to be replaced. Installing the new unit would raise the project's total installed capacity from 3.3 to 3.6 MW.

5. Currently, the licensee releases minimum flows via the project's spillway. The new unit would allow the licensee to generate electricity while releasing minimum flows. An estimated 949,400 kilowatt-hours (kWh) of additional energy would be generated each year with the proposed new unit.

CONSULTATION

6. The licensee did not conduct any pre-filing consultation prior to filing its amendment application with the Commission. The licensee stated in its application that it does not believe the interests of any resource agencies or other entities are affected by its proposal.

7. The U.S. Fish and Wildlife Service (FWS) and the Michigan Department of Natural Resources (Michigan DNR) filed comments dated September 20 and October 4, 2012, respectively, saying their agencies' interests would be affected by the licensee's proposal. Both agencies ask the Commission to reject the licensee's application and require the licensee to consult with the agencies.

8. In their comments, FWS and Michigan DNR say it's obvious from the MEA that downstream fishery benefits would be maximized if the project was operated run-of-river or in a re-regulation mode if upstream peaking continues.⁵ However, due to equipment

⁴ There is some discrepancy in the record as to how low the existing Unit No. 3 can operate. In comments filed February 5, 2013, by the Michigan Department of Attorney General (discussed later), a minimum hydraulic capacity of 450 cfs is cited, whereas a minimum capacity of 530 cfs was used by Commission staff in the MEA. We use the 530 cfs minimum capacity in this order to maintain consistency with our previous analysis.

⁵ In their comments, FWS and Michigan DNR refer to operating the project both in a run-of-river and in a re-regulation mode. However, the agencies' intent is for the
(continued)

limitations (i.e., the existing Unit No. 3 cannot operate below 530 cfs), the Commission decided that the cost to operate the project run-of-river was too high because the project could not generate with flows below 530 cfs. The agencies cite the Commission's decision in the October 16, 1998 order which, in part, amended Article 401 to require minimum flows instead of requiring the project to be operated run-of-river. FWS and Michigan DNR say the previous economic arguments in the MEA are no longer justified if the licensee installs the proposed new unit capable of generating with the project's minimum flows. Both agencies recommend the Commission reevaluate the project's economics with the new unit to determine appropriate minimum flows or whether the project should be operated in a re-regulation mode.

9. Commission staff held a teleconference on January 10, 2013, with the licensee, FWS, and Michigan DNR to discuss the licensee's application and the resource agencies' comments on the application.⁶ The licensee filed a response to the teleconference and a supplement to its application on January 14, 2013.

Public Notice and Responses

10. The Commission issued a public notice for the licensee's application on January 24, 2013, soliciting comments, motions to intervene, and protests by February 8, 2013. A motion to intervene was filed by the Michigan Department of Attorney General (Michigan Attorney General) on February 5, 2013, on behalf of the Michigan DNR. The Michigan Attorney General provided comments that mirror Michigan DNR's recommendations saying the Commission should revisit the issue of minimum flows and require the project to be operated in a manner to re-regulate upstream peaking flows.

ENVIRONMENTAL REVIEW

11. We reviewed the construction and operational effects of the licensee's proposal to replace Unit No. 3. The licensee indicates in its application that the work needed to replace the unit would take place in the project's powerhouse and in the powerhouse yard. There would be no in-water work and little land disturbance. The licensee states that its proposal to replace the unit would not affect water quality or have any effects to fish and wildlife, recreation, or cultural resources.

Sanford Project to release steady flows downstream of the dam to maximize fishery benefits. Therefore, we interpret their comments to mean that they recommend the project be operated solely in a re-regulation mode (not run-of-river) to re-regulate upstream peaking flows.

⁶ See Commission staff's teleconference record filed January 24, 2013.

12. We agree that construction to replace Unit No. 3 would have few environmental effects. Our one concern was whether Unit No. 3 could be considered eligible for listing on the National Register of Historic Places. The Commission's October 16, 1998 order indicates that none of the Sanford Project facilities were considered eligible for listing at that time; however, that was almost 15 years ago. So, by letter dated February 8, 2013, we asked the Michigan State Historic Preservation Officer (SHPO) for concurrence with a no effect determination. We found that replacing the unit should have no effect because the licensee intends to replace the unit in-kind, so that the licensee can maintain efficient operation of the project. We asked the SHPO to respond within 30 days or by March 10, 2013, should the SHPO disagree with our finding. The SHPO did not respond.

13. The project would continue to be operated in a peaking mode, and minimum flows required by Article 401 would continue to be released to the river downstream of the dam. However, the required minimum flows would be released through generation rather than being released as flows over the spillway. Because the project does not have a bypass reach, and because turbine releases are separated from the area below the spillway by only a short training wall, minimum flows would continue to be released in the same general area where they are released today.

14. As summarized under *Consultation*, FWS and Michigan DNR recommend the Commission revisit the project's operation to determine if, on balance, the project should be operated in a re-regulation mode. In response, we review the fishery benefits of operating the project as discussed in the MEA.⁷ According to the MEA, walleye, smallmouth bass, white bass, and white sucker ascend the Tittabawassee River during spring and early summer, and concentrations of spawning walleye have been documented downstream of Sanford Dam. As noted in the MEA, flow releases under different operating modes could affect all of these fish species, especially in the spring, by limiting potential spawning and rearing habitat and flows necessary for migration. The MEA found that releasing a minimum flow of 210 cfs would provide 68 percent of the effective fish habitat that would be provided by run-of-river operation, and releasing a minimum flow of 650 cfs March 15 through April 30 would provide 97 percent of the habitat available during the spring spawning and rearing period. Therefore, operating the project in a re-regulation mode after installation of the new turbine, as recommended by the agencies, could increase fish habitat below the project by about 32 percent most of the year, and by about 3 percent during the important springtime spawning and rearing period.

⁷ The MEA reviewed the effects of run-of-river operation for all four projects on the Tittabawassee River (Secord, Smallwood, Edenville, and Sanford). Run-of-river would have produced steady flows below the Sanford Project. Likewise, the agencies' current proposal for re-regulation is to produce steady flows below the Sanford Project.

ECONOMIC ANALYSIS

15. We compared the economics of project operation with the existing Unit No. 3 to project operation following installation of the new unit as proposed by the licensee. Estimates for energy generation under the most likely scenarios were obtained from the MEA, and updated energy values for peak and off-peak generation were acquired from the Midwest Independent System Operator's 2012 Monthly Market Assessment Reports. The updated energy values equate to \$34.86/megawatt-hour (MWh) for peak generation and \$25.52/MWh for off-peak generation. The table below compares energy generation and value for the existing Unit No. 3 operated in the current peaking mode while releasing the minimum flows required under Article 401, operation of the proposed new unit in the same mode, and operation of the proposed new unit with re-regulation.

	Current Peaking Operation without New Turbine	Current Peaking Operation with New Turbine	Re-Regulation Operation with New Turbine
Annual kWh	8,260,591	9,210,000	9,210,000
Energy Value (2012 dollars)	\$253,020	\$281,140	\$273,390

16. Based on this information, operation of the project in its current peaking mode following installation of the new unit would increase the value of the project's generation by approximately \$28,120 annually, or about 11 percent. If the project were to operate in a re-regulation mode with the new unit, the increased value of annual generation would be approximately \$20,370, or about 8 percent. Therefore, peaking operation would result in generation being more valuable by about \$7,750 annually, or about three percent of the generation based on current operation. This analysis includes only the differences in the value of generation and does not include civil costs that may be associated with installing or programming equipment necessary for different operating modes. It is assumed that these types of civil costs would be similar or equal.

DISCUSSION AND CONCLUSIONS

17. We reviewed the economic and environmental issues as requested by the resource agencies commenting in this proceeding. As shown under *Economic Analysis* above, operation of the Sanford Project following installation of the new unit, using the project's current operating mode, would increase annual project revenues by about 11 percent; operation in a re-regulating mode following installation of the new unit would increase annual revenues by about 8 percent. As discussed under *Environmental Review*, operation of the project with the new unit, with no operational changes as proposed by the licensee, would maintain the environmental status quo. Operation with re-regulation

would provide a 3 percent increase in fish habitat downstream of the project during the spawning and rearing period and an estimated 32 percent increase during the rest of the year.

18. Requiring the project to operate in a re-regulation mode would provide some additional fishery habitat downstream of the project, although existing minimum flows under Article 401 already provide 97 percent of available habitat during the important springtime fish spawning and rearing period. In recommending operation of the Sanford Project to re-regulate fluctuations from upstream projects, the resource agencies did not identify the effects such operation would have on reservoir levels and shoreline-dependent resources. For over 14 years reservoir levels at the project have been maintained within a 0.7-foot range as specified in Article 411, except during the winter drawdown period. Midland County Park, a popular park located adjacent to the project, has an established swimming beach, boat launching area, and a dock with mooring slips. There are also a large number of private docks located around the lake's shoreline. All of these facilities could be affected to some degree by fluctuating reservoir levels. Fluctuating water levels could also affect shallow-water fish spawning areas that currently support a good fishery for a variety of species.⁸ Further, fluctuating water levels could affect shoreline wildlife habitat, including sensitive areas like wetlands. Staff would need additional information in order to accurately determine these effects to shoreline-dependent resources.⁹

19. As a final point, we note that the issue of generating using minimum flows has been examined before at the Sanford Project. The October 16, 1998 amendment order contemplated the use of a turbine-generator unit to release the project's required minimum flows. Such a unit was proposed by the licensee in a Minimum Flow Release Plan which received resource agency review and was approved by Commission order dated February 16, 2001.¹⁰ The following year the licensee changed direction and filed an application to amend the Minimum Flow Release Plan so it could release minimum

⁸ Status of the Fishery Report - Sanford Lake, 2007-40, available at www.michigan.gov/dnr; Environmental and Public Use Report, Federal Energy Regulatory Commission, Chicago Regional Office, dated September 22, 2010.

⁹ Commission staff performed a preliminary analysis to estimate fluctuations in reservoir elevations under a re-regulating mode of operation. We determined that over the course of a week, re-regulation could cause reservoir surface elevations to fluctuate as much as 2.7 feet. To perform a more accurate analysis, staff would need stage-storage relationships, the desired target re-regulating releases from the Sanford Project, and detailed hourly discharge data for the upstream Edenville Project.

¹⁰ 94 FERC ¶ 62,157

flows, in part, through a gate instead of using the approved turbine-generator unit. The amendment to the plan was approved by Commission order dated November 13, 2001¹¹ and the licensee continues to release flows according to that plan today. At no point during the review, approval, and amendment of the Minimum Flow Release Plan did the resource agencies recommend the project be operated in a re-regulation mode.

20. In summary, the licensee's proposal to replace Unit No. 3 is a maintenance action that would have few environmental effects and while requiring the project to be operated in a re-regulation mode would result in some improvement in fishery habitat, there could be adverse effects to reservoir-based recreation, fisheries, and sensitive shoreline habitats. On balance, we do not recommend changing the project's mode of operation under these circumstances. Therefore, we recommend that this order approve the licensee's application to replace Unit No. 3 without requiring the project to be operated in a re-regulation mode.

CHANGES IN CAPACITY AND ADMINISTRATIVE ISSUES

Annual Charges

21. The proposed amendment would increase the capacity of the project from 3.3 to 3.6 MW. The United States requires reimbursement from licensees for the cost of administering Part I of the Federal Power Act through annual charges paid by the licensee. These charges are based on the project's authorized installed capacity and the amendment of such requires the revision of the project's annual charges under Article 201. Therefore, ordering paragraph (C) of this order amends Article 201 to reflect the change to the project's installed capacity. In accordance with the Commission's regulations at 18 C.F.R. § 11.1 (c)(5), the assessments for new authorized capacity start on the date of commencement of construction of such new capacity. Accordingly, ordering paragraph (D) of this order requires the licensee to file with the Commission the date construction started, which would be used to revise license Article 201.

Project Description

22. The licensee did not include a revised Exhibit A in its filing. Because the proposal changes the type and rated capacity of one of the project's turbine-generator units, the project's approved Exhibit A needs to be revised. Therefore, ordering paragraph (E) requires the licensee to file a revised Exhibit A describing the new unit along with photographs showing the unit's nameplates within 90 days of completion of construction to reflect and verify as-built conditions.

¹¹ 97 FERC ¶ 62142

Exhibit Drawings

23. The licensee filed four Exhibit F drawings with its September 11, 2012 amendment application. We have reviewed these drawings and determine that they conform to the rules and regulations of the Commission and will be approved as shown in ordering paragraph (G) of this order. Ordering paragraph (H) requires the licensee to file the drawings in aperture card and electronic file formats.

The Director orders:

(A) Boyce Hydro Power, LLC's application to amend the license for the Sanford Project No. 2785 filed on September 11, 2012 and supplemented January 14, 2013 is approved, effective the day this order is issued.

(B) Item (c) of the project description under ordering paragraph (B)(2) of the license is revised to read as follows:

... (c) a masonry powerhouse housing three generating units for a total installed capacity of 3,600 kilowatts;...

(C) Article 201(1) of the license is revised, in part, to read as follows:

... For the purpose of reimbursing the United States for the cost of administration of Part I of the Federal Power Act, a reasonable amount as determined in accordance with the provisions of the Commission's regulations in effect from time to time. The authorized installed capacity for that purpose is:

- a. 3,300 kilowatts based on the authorized and currently existing capacity.
- b. 3,600 kilowatts upon commencement of construction for the new turbine-generator unit.

(D) Within 60 days of the start of construction, the licensee shall file with the Commission, the date construction started, which will be used to revise the project's annual charges under license Article 201.

(E) Within 90 days of completion of construction, the licensee shall file with the Commission, for approval, a revised Exhibit A including a description of the new turbine-generator unit to reflect as built conditions. The licensee shall also file, with the Commission and the Division of Dam Safety and Inspection's Chicago Regional Office, photographs of the new Unit No. 3 turbine and generator nameplates.

(F) The licensee shall start construction to replace Unit No. 3 within two years from the issuance date of this order and shall complete construction within four years from the issuance date of this order.

(G) The following exhibit drawings, filed with the amendment application on September 11, 2012, conform to the Commission’s rules and regulations, and are approved and made part of the license, as labeled and numbered below:

EXHIBIT	FERC DRAWING No.	SUPERSEDED FERC DRAWING No.	FERC DRAWING TITLE
F-1	P-2785-17	P-2785-1	General Plan
F-6	P-2785-18	---	Existing Powerhouse Installation - Plan
F-7	P-2785-19	---	New Turbine & Generator Installation - Section
F-8	P-2785-20	---	Tailrace Slab Modification

(H) Within 45 days of the date of issuance of this order, 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-2785-17, etc.) 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 order shall be typed on the upper left corner of each aperture card. See Figure 1.

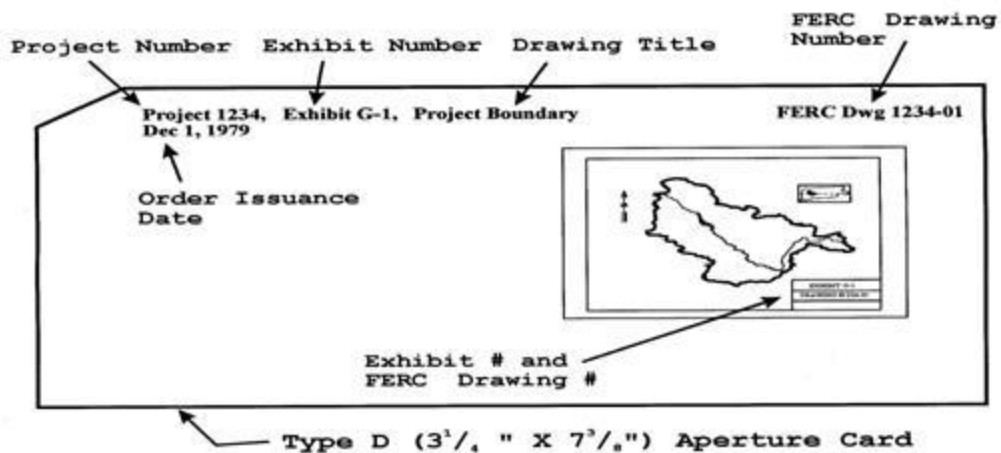


Figure 1 Sample Aperture Card Format

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 Confidential 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 order, and file extension in the following format [P-2785-9, F-1, General Plan, 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 MB desired

(I) This order constitutes final agency action. Requests for rehearing by the Commission may be filed within 30 days of the date of issuance, as provided in section 313(a) of the Federal Power Act, 16 U.S.C. § 825*l* (2012), and the Commission's regulations at 18 C.F.R. § 385.713 (2013). The filing of a request for rehearing does not operate as a stay of the effective date of this order, or of any other date specified in this order. The licensee's failure to file a request for rehearing shall constitute acceptance of this order.

Steve Hocking
Chief, Environmental Review Branch
Division of Hydropower Administration
and Compliance