141 FERC ¶ 62,211
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Turlock Irrigation District and	Docket No. UL11-1-000
Modesto Irrigation District	Project No. 2299-078

ORDER FINDING LICENSING OF HYDROELECTRIC PROJECT REQUIRED

(December 19, 2012)

1. On June 10, 2011, the Federal Energy Regulatory Commission (Commission) received an inquiry from the National Marine Fisheries Service (NMFS) concerning the status of the unlicensed La Grange Hydroelectric Project, located on the Tuolumne River near the town of La Grange in Stanislaus and Tuolumne Counties, California. Commission staff undertook a review of the project to determine whether it is subject to the Commission's mandatory licensing jurisdiction under Part I of the Federal Power Act (FPA). I have determined that La Grange Hydroelectric Project requires licensing.

PROJECT DESCRIPTION

2. The La Grange Hydroelectric Project, a diversion project built jointly by the Turlock and Modesto Irrigation Districts (Districts) for agricultural irrigation, was completed in December 1893. The La Grange Dam, located at river mile (RM) 52.2, was originally a 127.5-foot-high, 300-foot-long rubble masonry dam. It was constructed for the purpose of raising the level of the Tuolumne River to a height which would enable gravity flow of diverted water into the Turlock and Modesto irrigation canals. Water was first delivered through the Turlock Irrigation District's canal system in 1900. In 1923, the height of the dam was increased 18 inches by a layer of reinforced concrete, replacing temporary stop-logs, and in 1930 an additional two feet were added to the top of the dam, to increase flows into the irrigation canal system. In 1924, the Turlock Irrigation District (Turlock) constructed a powerhouse at RM 52.0, containing two turbine generating units, rated at 1,000 kilowatts (Unit 1) and 3,750 kilowatts (Unit 2), using excess water from the Turlock irrigation canal.[1] Turlock replaced the turbine generating units in 1989 with

[1] Report of Turlock Irrigation District to the Federal Energy Regulatory Commission on the La Grange Project at 1, 4 ("La Grange Report"), attached to letter from John Whittaker, Winston & Strawn LLP to Kimberly Bose, Commission Secretary (filed Oct. 11, 2011); February 1966 Turlock Irrigation District Memo on Water Rights for La Grange Power Plant Flows at 1 (included as Attachment D to the La Grange Report).

units rated at 1,231 kilowatts (Unit 1) and 3,693 kilowatts (Unit 2), increasing the project's capacity by 174 kilowatts.[2] The project is connected to an interstate grid.

JURISDICTION

3. Pursuant to Section 23(b)(1) of the Federal Power Act (FPA), 16 U.S.C. § 817(1), a non-federal hydroelectric project must be licensed if it:

(1) is located on a navigable water of the United States;

(2) occupies lands of the United States;

(3) utilizes surplus water or water power from a government dam;[3] or

(4) is located on a non-navigable stream over which Congress has Commerce Clause jurisdiction, is constructed or enlarged on or after August 26, 1935, and affects the interests of interstate or foreign commerce.

NAVIGATION

4. As defined in section 3(8) of the FPA, a river is navigable if it is used or suitable for use to transport persons or property in interstate or foreign commerce, either by itself or by connecting with other navigable waters.[4] The Tuolumne River flows into the navigable San Joaquin River, which flows into the San Francisco Bay. Therefore, in order to support a finding that the Tuolumne River is a navigable water of the United States at the site of the La Grange Project, it is only necessary to consider whether the river is navigable from its confluence with the navigable San Joaquin River (at RM 0.0) up to the lower most part of the La Grange Project (at approximately RM 51.7).[5]

5. Commission staff conducted a navigation review of the Tuolumne River and placed it in the public file on May 31, 2012. The navigation review found evidence that the Tuolumne River was used and is suitable for use to transport persons and property in interstate commerce from above, past, and below the La Grange Project site to its

[2] La Grange Report at 4; Bechtel Civil March 1987 Report at 6 (included as Attachment E to the La Grange Report).

[3] Licensing is not required under bases (1), (2), and (3) if the project is constructed, operated, and maintained in accordance with the terms of a valid federal permit issued prior to June 10, 1920.

[4] 16 U.S.C. § 796(8) (2006).

[5] *See FPL Energy Maine Hydro, LLC v. FERC*, 287 F.3d 1151 (D.C. Cir. 2002).

confluence with the San Joaquin River and on to the San Francisco Bay.[6] Much of the navigation review and the comments received on it concerned sections of the Tuolumne River upstream of the lowermost part of the La Grange Project. We address these sections of the river to provide a more complete understanding of the navigation review and the comments received. As discussed in more detail below, however, these areas of the river upstream of the project are not necessary to support a finding that the Tuolumne River is navigable at the site of the La Grange Project.

6. The navigation review found that, during the nineteenth century, miners seeking gold used whaleboats to travel from Stockton (on the San Francisco Bay) up the San Joaquin River to and from the community of Jacksonville, which was located at RM 70.5 approximately 20 miles above the present site of the La Grange Dam at RM 52.2 (and is now fully submerged under the Don Pedro Project Reservoir). The review also found that recreational boaters currently use the river starting from approximately 20 miles above the Don Pedro Dam to the Don Pedro Reservoir, omitting the 2.6-mile river section between Don Pedro Dam and the La Grange dam because of lack of public access, reentering the river at the town of La Grange (downstream of the La Grange Dam), and continuing down the river to its confluence with the navigable San Joaquin River, demonstrating its suitability for use for the simpler forms of commercial navigation.[7] Finally, field crews from the California Department of Fish and Game (California DFG) conduct Chinook salmon escapement surveys on the Tuolumne River, beginning in the first week of October and continuing weekly until the end of December or early January. Crew members using drift boats survey the area, from approximately RM 51.5 or 51.6, just below the La Grange powerhouse, downriver to RM 21.5.[8] Other filings, including those of the Tuolumne River Trust, indicate that the river is used or suitable for use by recreational boaters from the La Grange Dam and powerhouse to the San Francisco Bay, thus demonstrating its suitability for use for the simpler forms of commercial navigation.[9]

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[6] Federal Energy Regulatory Commission, "Navigation Status Report: Tuolumne River UL11-1-000" (navigation review) (filed May 31, 2012).

[7] A river is navigable if "(1) it presently is being used or is suitable for use, or (2) it has been used or was suitable for use in the past, or (3) it could be made suitable for use in the future by reasonable improvements." *Rochester Gas & Electric Co. v. FPC*, 344 F.2d 594, 596 (2nd Cir. 1965) (emphasis in original).

[8] Letter from Jeffrey Single, California DFG, to Kimberly Bose, Commission Secretary (filed Sept. 24, 2012).

[9] Letter from Patrick Koepele, Tuolumne River Trust, and Chris Shutes, California Sportfishing Protection Alliance, to Kimberly Bose, Commission Secretary (filed Aug. 2, 2012).

A. Response to the Navigation Review

7. The Commission published a "Notice of Availability of Navigability Report for the Tuolumne River, Request for Comments, and Notice of Pending Jurisdictional Inquiry" on May 31, 2012. Comments were due within 30 days, or by July 2, 2012. On June 4, 2012, Turlock requested an additional 30 days to respond, which Commission staff granted on June 7, 2012. On August 2, 2012, Turlock filed its response, arguing that the navigation review was flawed and should be withdrawn,[10] and attaching a report prepared by Dr. Alan Paterson (Paterson Report).

8. The Tuolumne River Trust and the California Sportfishing Protection Alliance jointly filed comments in support of the staff's navigation review.[11] The U.S. Department of the Interior filed a motion to intervene but did not file comments. On September 24, 2012, the California DFG filed additional information in response to Turlock's comments on the navigation review in order to clarify the record regarding the department's use of the Tuolumne River to conduct salmon escapement surveys.[12] On October 2, 2012, the Tuolumne River Trust filed comments in response to Turlock's comments on the navigation review and provided additional information in support of the staff's navigability finding. That same day, NMFS filed comments in response to Turlock's comments on the navigation review and the Tuolumne River Trust's additional information on navigability.

9. As set forth in the Paterson Report, Turlock's response points out that the navigation review incorrectly placed the town of Jacksonville two miles above the La Grange Dam, instead of its actual location twenty miles above the dam. Although this is correct, it does not disprove the information included in the navigation review. The navigation review correctly placed Jacksonville at the confluence of Woods Creek and the Tuolumne River, erring only in its distance from the dam. The Paterson Report also argues that the navigation review fails to establish that the Tuolumne River is navigable because it fails to prove that the river was or is used for commercial navigation, or that there is sufficient evidence that private boating use renders the river a navigable water. These and other issues are discussed below.

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[10] Letter from John A. Whittaker, Winston & Strawn, LLP, to Kimberly Bose, Commission Secretary, at 1-2 (filed Aug. 2, 2012), attaching Paterson, Alan M., Ph.D., "Report on Navigability of the Tuolumne River" (Paterson Report).

[11] Letter from Patrick Koepele, Tuolumne River Trust, and Chris Shutes, California Sportfishing Protection Alliance, to Kimberly Bose, Commission Secretary (filed Aug. 2, 2012).

[12] Letter from Jeffrey Single, California DFG, to Kimberly Bose, Commission Secretary (filed Sept. 24, 2012).

10. The Paterson Report disputes the validity of the navigation review by challenging incidental items such as the location of downstream towns, the importance of missions, the routes of steamboats, and mentions of logging on the river. These items do not relate to the finding of navigability; rather, they provide an overview of the history of the area, based on period source materials. The Paterson Report also states that some information concerning the height and construction history of the La Grange Dam was incorrect. Commission staff prepared the navigation review using the information that Turlock provided in the La Grange Report. As the Paterson Report acknowledges, the height of the dam varies depending on how it is measured. This order corrects any discrepancies and reflects the correct height and construction history for the La Grange Project.

11. The Paterson Report disputes the evidence in the navigation review that whaleboats were used to travel to and from the town of Jacksonville (RM 70.5). In support, it relies in part on descriptions of the Tuolumne River in the U.S. Army Corps of Engineers Annual Reports of 1881, 1882, and 1892.[13] These later descriptions of the river corridor provided in the Army Corps Annual Reports are of questionable relevance to an understanding of the river in the winter of 1849-1850, when the whaleboats were reported to be in use. There is evidence that a massive flood, "the great freshet of '61," substantially altered the river. This flood is mentioned in most historical sources. The town of Sonoma, for example, received more than 72 inches of rain between November 1861 and January 1862. Prentice Mulford's history of the area,[14] cited in the Paterson Report, discusses this event and its effect. However, the Paterson Report did not include

[13] Paterson Report at 2-4, 14. In its cover letter to the Paterson Report (at 3), Turlock argues that the Army Corps' failure to include the Tuolumne River in any of its lists of bridges over navigable rivers for the years 1927, 1935, 1941, 1948, and 1961 indicates that the Corps "had repeatedly determined in the past that the Tuolumne River was non-navigable." Later in the letter (at 4), Turlock acknowledges that the Corps "has now determined that the Tuolumne River is navigable, but only up to Brasso Bridge at RM 47," which is about 5 miles downstream of La Grange dam. The Commission must make its own determination and is not bound by a navigability determination by another federal agency. *Pennsylvania Water and Power Co. v. FPC*, 123 F.2d 155, 161-162 (D.C. Cir 1941); *cert. denied*, 315 U.S. 806 (1942); *Island Power Co.*, 47 FERC ¶ 61,355 at p. 62,252 n. 14 (1989).

[14] Prentice Mulford, "Knapsack and Blanket," *Overland Monthly and Outback Magazine*, vol. 3, No. 4, 1869, pp. 297-305. Mulford returned to the area in 1869, and reminisced on what the area had been in the 1850s, but, as he admitted, he only surveyed the area from Hawkins Bar (RM 66) downriver to Indian Bar (RM 64).

Mulford's description of the effects of the flood.[15] The report does mention that "a massive flood in 1862 reshaped the river corridor below La Grange." [16]

12. The Paterson Report quotes John Audubon's description of the Tuolumne River above Hawkins Bar (RM 66) in March 1850 as a "troubled river . . . tossed and dashed over rocks and shallow bars."[17] The report acknowledges that there are no streamflow or rainfall records for the area from that early period, but suggests that late 1849 and early 1850 was a wet period in the region and states that it "seems likely that during the period when whaleboats were claimed to have visited Jacksonville the Tuolumne River experienced high flows that would have added to the difficulty of navigating the swift water in the canyons above La Grange."[18] The report states that, because of the falls that existed at La Grange, the steep gradient of the river, the presence of upstream falls or rapids, and the river canyon's topography, "it seems safe to conclude that navigation by whaleboats above La Grange was virtually impossible."[19]

13. In an attempt to cast doubt on the history of the area by George Tinkham,[20] the Paterson Report quotes an 1892 Army Corps Annual Report stating that "steamboats and barges can only navigate this river when it is at half-flood stage or higher; this lasts from three weeks to three months during a season."[21] The Corps document states that during the summer there is not enough water in the river "to float a skiff; in winter, when the river is up, there is plenty of water for steamboat navigation." This seasonal use of the lower Tuolumne River for steamboat navigation during the winter months corresponds to the reported December and January time frame of whaleboat use on the river in 1849-1850. While the Paterson Report only discusses the possibility of whaleboats going up to Jacksonville, it does not address the downriver traffic from Jacksonville, also mentioned in the historical sources.

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[15] *Id.* at 303.

[16] Paterson Report at 4-5.

[17] *Id.* at 3, *quoting* Audubon, John W., *Audubon's Western Journal, 1849-1850* at 218-221 (Cleveland, Arthur H. Clark Co., 1906).

[18] *Id.* at 12.

[19] *Id.*

[20] George Henry Tinkham, *A History of Stanislaus County California*, 1921, Historic Record Company, Los Angeles, California. Tinkham visited the area in 1854.

[21] Paterson Report at 15.

14. The Paterson Report states that "to the forty-niners, then, the river was an industrial site, not a commercial artery,"[22] suggesting that the river was incidental to the miners, and not used for navigation. Mulford, quoted in the Paterson Report, was not talking about the river in 1849-1850, but rather "a few years later." His description of the forty-niners at Hawkins Bar in 1849-1850 is of men anxious to seek gold anywhere and everywhere. Hydraulic mining, dams, and diversions were later configurations of the area.

15. The Paterson Report also attempts to prove that "Jacksonville" mentioned in the source materials was really Jackson's Ranche, a ferry crossing at river mile 39.5, not Jacksonville at river mile 70.5.[23] This is unlikely because Jacksonville was the second largest town in the county, not a place easily confused by individuals and newspapers at the time.

16. To summarize, the Paterson Report argues that historical evidence shows that the Tuolumne River was not navigable at the site of La Grange Dam and Reservoir. In its cover letter to the Paterson Report, Turlock further argues that, because the Tuolumne River upstream of the Don Pedro Reservoir is composed primarily of Class IV and V rapids, which can be navigated only by highly skilled kayakers and raft guides, the Commission should regard this area of the river as non-navigable.[24] As a result, Turlock requests that the Commission reject the staff's finding of navigability, withdraw the navigation review, and determine that the Tuolumne River at the site of the La Grange Project is not a navigable water of the United States under section 3(8) of the FPA.

B. Discussion

17. In its cover letter to the Paterson Report, Turlock argues that "the single and highly questionable historical reference to commercial navigation" by whaleboats past the La Grange Dam site "has virtually no probative value and most certainly does not constitute the substantial evidence required to support a navigability determination."[25]

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[22] *Id.* at 7

[23] *Id.* at 11.

[24] Turlock's letter at 6 (filed Aug. 2, 2012). In support, Turlock cites *PacifiCorp Electric Operations*, 73 FERC ¶ 61,365 at 62,140-41 (1995), and *Pennsylvania Electric Co.*, 56 FERC ¶ 61,435 at 62,549-50 (1991). Turlock is correct that the Commission does not generally recognize these types of difficult rapids as providing evidence of navigability. However, Turlock overlooks the fact (discussed below) that much of the whitewater use of the upper Tuolumne River is commercial, because it involves guided rafting trips in exchange for a fee, and the Commission does consider such use as indicative of navigability.

[25] Turlock's letter at 4 (filed Aug. 2, 2012).

However, historical evidence of navigation is often scarce, and the volume of evidence of past use need not be large to sustain a finding of navigability.[26] Turlock also suggests that the December 1849 through January 1850 time period was a high flow period and that the courts have held that the exceptional use of a river by boats during high flow periods does not make a river navigable.[27] However, a river need not be navigable at all times of the year or at all stages of water; regular or seasonal navigability is sufficient.[28] As noted earlier, other sources suggest that the river was usually high during the winter months and spring freshets. This suggests that high flows during the December 1849 to January 1850 time period were seasonal rather than exceptional, and their use by whaleboats during that period would thus support a finding of navigability.

18. While acknowledging that the Army Corps has now determined that the Tuolumne River is navigable to river mile 47, Turlock contends that there is insufficient evidence to conclude that the river is navigable at the site of the La Grange Project.[29] Turlock also argues that there is no evidence of commercial traffic on the river. The evidence of recreational boating, cited in the navigation review, confirms that the river has been used, is being used, and is suitable for use for the simpler forms of commercial navigation.[30] As indicated in the navigation review, the upper Tuolumne River was used by the "Paddle to the Sea" participants, who were required to pay in order to participate in the event.[31] The river is also used by several commercial whitewater companies above the

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[26] *See United States v. Appalachian Electric Power Co.*, 311 U.S. 377, 416 (1940); *Connecticut Light and Power Co. v. FPC*, 557 F.2d 349, 356 (2nd Cir. 1977); *Rochester Gas & Electric Co. v. FPC*, 344 F.2d 594, 597 (2nd Cir. 1965); *Puget Sound Power and Light Co. v. FERC*, 644 F.2d 785, 789-90 (9th Cir. 1981).

[27] Turlock's letter at 5 (filed Aug. 2, 2012).

[28] *See Economy Light & Power Co. v. U.S.*, 256 U.S. 113, 121-122 (1921); *City of Centralia, Washington v. FERC*, 851 F.2d 278 (9th Cir 1988); *Wisconsin Public Service Corp. v. FPC*, 147 F.2d 743 (7th Cir.), *cert. denied*, 325 U.S. 880 (1945). *Cf. Washington Water Power Co. v. FERC*, 775 F.2d 305, 327-29 (9th Cir. 1985) (navigation impractical and uneconomical even during times of high water).

[29] Turlock's letter at 4, 5-7 (filed Aug. 2, 2012).

[30] As Turlock recognizes (*id.* at 5), lack of commercial traffic is not a bar to a conclusion of navigability where personal or private use of boats demonstrates the availability of the stream for simpler types of commercial navigation. *United States v. Appalachian Electric Power Co.*, 311 U.S. 377, 416 (1940); *City of Centralia v. FERC*, 851 F.2d 278, 282 (9th Cir. 1988); *Puget Sound Power and Light Co. v. FERC*, 644 F.2d 785, 788 (9th Cir. 1981).

[31] In 2012, participants were charged a per day fee of $15 for members and $30 for (continued)

Don Pedro Reservoir. Sierra Mac River Trips, for example, offers Class IV whitewater trips, 18 miles from Meral's Pool to Ward's Ferry (approximately RM 88 to RM 71), and Class V whitewater rafting 8 miles above Meral's Pool.[32] The Commission has recognized that a river used for commercial whitewater boating trips is navigable, because transporting people in exchange for money is "the very essence of commercial navigation."[33]

19. Turlock dismisses this evidence of recreational use, citing the fact that the "Paddle to the Sea" participants who traveled the entire length of the Tuolumne River were required to hike seven miles to bypass the inaccessible area between the Don Pedro Dam (RM 54.8) and the La Grange Dam (RM 52.2), a 2.6-mile section of river, reentering the river farther downstream at the La Grange Bridge (RM 50.5) in the town of La Grange. Turlock fails to mention that the participants were required to make this detour because landowners prohibit boaters from using the stretch of river between the dams. This lack of access would not prevent a finding of navigability if that section of the river is otherwise navigable.[34]

20. More importantly, however, even without considering the evidence of past whaleboat use above the La Grange Project and current whitewater recreational use above the Don Pedro Project, there is substantial evidence to support a finding that the Tuolumne River is a navigable water of the United States at the site of the La Grange Project. In order to so find, it is only necessary to consider whether the river is navigable

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non-members, and were required to raise at least $60 for the event. Tuolumne River Trust letter at 3 (filed Oct. 2, 2012).

[32] Rates for a one-day, 18-mile trip on the main Tuolumne River are $245 on weekends and $235 on weekdays, with two- and three-day trips available for $440 and $585, respectively. *See* the Sierra Mac River Trips web site, available at: http://www.sierramac.com/rates.html.

[33] *PacifiCorp*, 79 FERC ¶ 61,130 at 61,563 (1997). Commercial whitewater use is distinguishable from purely private, non-commercial recreational use of Class III and higher rapids, which provides an insufficient basis from which to infer suitability for commercial navigation. *Id*.

[34] Navigable waters are generally those streams which in their natural or improved condition are used or suitable for use for the transportation of persons or property in interstate or foreign commerce, including any interrupting falls, shallows or rapids compelling land carriage. *Upper Peninsula Power Co*., 53 FERC ¶ 61,038 (1990). The Tuolumne River Trust states that, if public access were granted, the Trust would include the section of the Tuolumne River between Don Pedro Dam and La Grange Dam in its Paddle to the Sea event. See Letter from Patrick Koepele, Tuolumne River Trust, to Kimberly Bose, Commission Secretary, at 2 (filed Oct. 2, 2012).

from its confluence with the navigable San Joaquin River up to the lowermost part of the La Grange Project.[35]

21. As the Paterson Report acknowledges, in 1851 the California Legislature declared the head of navigation on the Tuolumne River to be at the "cañon or foot of the rapids" that then existed at what is now the site of La Grange Dam.[36] Thus, the river was considered navigable at that time and location in its ordinary condition, before its flow was dammed and diverted for irrigation and other uses.[37] This supports historical evidence that the Tuolumne River was navigable by whaleboats and other small craft at least as far as the La Grange Dam site (RM 52.5), and perhaps above that site as far upstream as Jacksonville (RM 70).[38] In addition, both the California DFG and the Tuolumne River Trust filed evidence indicating that the Tuolumne River is navigable up to at least the La Grange Project tailrace and, with a short portage, to the base of the La Grange Dam. Specifically, Timothy Heyne of the California DFG states that his field crews have conducted spawning and carcass surveys on the Tuolumne River from early October to mid-January using a 15-foot drift boat equipped with a 15 horsepower outboard motor, launching the boat at the La Grange Bridge and traveling upstream to RM 51.5, just below the La Grange powerhouse, and then traveling downstream to just above the Geer Road Bridge (RM 26) or the Santa Fe Bridge (RM 22).[39] Crews have

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[35] *See FPL Energy Maine Hydro, LLC v. FERC*, 287 F.3d 1151 (D.C. Cir. 2002).

[36] Paterson Report at 13-14, *citing* California Attorney General Opinion No. SO71-42, July 31, 1972, in Attorney General Opinions, vol. 55, p. 300.

[37] A river that was navigable in the past remains so, even if its condition changes as a result of artificial obstructions or diversions. *See United States v. Appalachian Power Co.*, 311 U.S. 377, 408, *citing Economy Light Co. v. United States*, 256 U.S. 113, 123-24 (1921).

[38] Navigation Review at 8; George Henry Tinkham, *History of Stanislaus County California*, at 61, 81 (Historic Record Company, Los Angeles, California, 1921); Elliot H. Koeppel, *The California Gold Country: Highway 49 Revisited*, La Grange Town History (Malakoff and Co., La Habra, CA, 2000).

[39] Declaration of Timothy Heyne, California DFG, at 2, included as Exhibit 4 to letter from Jeffrey Single, California DFG, to Kimberly Bose, Commission Secretary (filed Sept. 21, 2012). The cover letter states (at 1) that the California DFG field crews take the drift boats upstream at least as far as RM 51.6, whereas the Heyne declaration (at 2) states that they have driven the boats "upstream to RM 51.5, just below the powerhouse." In its October 11, 2011 report on the La Grange Project, Turlock states (at 5) that the tailrace joins the Tuolumne River about one-half mile below La Grange Dam, which would be at about RM 51.7, but later states (at 6) that the tailrace rejoins the river at approximately RM 51.8. These locations are approximate. Thus, it is unclear whether boats have navigated up to the project tailrace. As noted earlier, however, in 1853 the

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occasionally traveled in boats all the way from the powerhouse to the mouth of the Tuolumne River (RM 0), and the only known portage would be a 200-foot section immediately upstream of the powerhouse to get to the pool at the foot of La Grange Dam.[40] Similarly, the Tuolumne River Trust states that John Dye, a sea-kayaking instructor and guide, paddled a kayak from the La Grange Bridge put-in to the base of the La Grange Dam in June 2012, during a period of very low water in the Tuolumne, and was able to paddle this entire section of the Tuolumne River except for one small rock island 300 meters below La Grange Dam that was exposed because of low water levels.[41]

22. Thus, the Tuolumne River at the site of the La Grange Project is a navigable water of the United States. Steamboats navigated the lower Tuolumne River during the mid-nineteenth century,[42] and there is evidence that the river was used during the period 1849-1850 to transport men and supplies in whaleboats between Stockton (on the San Joaquin River at the San Francisco Bay), Crescent City (RM 30), French Bar (near La Grange) and perhaps as far upstream as Jacksonville (RM 70.5), past the site of the current La Grange Dam (RM 52.2).[43] The Tuolumne River is also used today by recreational canoers, from just below the La Grange Dam to the river's confluence with the navigable San Joaquin River, and by staff of the California DFG in motorized drift boats, from just below the La Grange Project Dam and powerhouse downriver to RM 22, thus demonstrating the river's suitability for the simpler forms of commercial navigation.[44]

California legislature designated the site where La Grange Dam was later built as the upper limit of navigability, and the Heyne declaration clearly states (at 2) that the pool at the base of the dam can be reached by portaging a 200-foot rocky section of the river immediately upstream of the powerhouse. The river is therefore navigable up to the base of the dam.

[40] *Id*.

[41] Letter from Patrick Koepele, Tuolumne River Trust, to Kimberly Bose, Commission Secretary, at 4 (filed Oct. 2, 2012).

[42] Navigation Review at 10-11.

[43] *See* notes 36 and 38, *supra*, and accompanying text.

[44] Even if we were to conclude that the Tuolumne River is not navigable at the lowermost project feature (the tailrace), we would still find that the project requires licensing based on its location on a non-navigable Commerce Clause stream, effect on interstate commerce through its connection to the interstate electrical grid, and the post-1935 construction that occurred when the project's generating capacity increased in 1989. As noted earlier, Turlock replaced the project's turbine generating units in 1989, increasing the project's installed capacity by 174 kilowatts. An increase in installed capacity constitutes post-1935 construction within the meaning of FPA section 23(b)(1).

(continued)

FEDERAL LANDS

A. Background

23. On July 26, 2011, Commission staff requested that Turlock provide information on the La Grange Project to assist the staff in its jurisdictional review. In response, Turlock filed a report that includes results of a water elevation survey from La Grange Dam to Don Pedro Dam and a backwater analysis.[45] Based on this survey and analysis, Turlock states that the La Grange reservoir ends somewhere between 4,700 and 5,300 feet upstream of the dam, which is about 400 to 500 feet below the closest federal lands that the U.S. Department of the Interior's Bureau of Land Management (BLM) administers.[46]

24. On October 18, 2011, NMFS filed information for the Commission to use in its jurisdictional review.[47] Among other things, NMFS included geographic information system (GIS) output, satellite imagery, and mapping evidence, stating that this demonstrates that the La Grange reservoir occupies BLM lands.[48] On November 17, 2011, Turlock filed a response to NMFS's filing, stating that NMFS's filing "does not 'demonstrate' in any way" that the La Grange Reservoir occupies BLM lands,[49] and reiterating the results of Turlock's own water elevation survey and backwater analysis discussed in its October 11, 2011 filing.

25. Commission staff requested all data associated with Turlock's water elevation survey and backwater analysis via electronic mail on November 28, 2011. On December 15, 2011, NMFS filed a supplement to its October 18, 2011 filing, including more detailed GIS data and projecting the documented crest elevation of La Grange Dam onto the topography of the area upstream of the dam. NMFS states that the results of this

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See L.S. Starrett Co. v. FERC, 650 F.3d 19, 27 (1st Cir. 2011) (licensing required based on installed capacity increase of 86 kilowatts); *Puget Sound Power & Light Co. v. FPC*, 557 F.2d 1311, 1316 (9th Cir 1977).

[45] *See* Turlock's La Grange Report at 11 (filed Oct. 11, 2011). A backwater analysis is a standard method of conducting hydrologic and hydraulic analyses.

[46] *Id*.

[47] Letter from Steve Edmondson, NMFS, to Kimberly Bose, Commission Secretary (filed Oct. 18, 2011; same letter also appears in Commission's eLibrary system with filing date of Nov. 2, 2011).

[48] *Id*. at Appendix 1.

[49] Letter from John Whittaker, Winston & Strawn LLP, to Kimberly Bose, Commission Secretary, at 2 (filed Nov. 17, 2011).

analysis define the upstream extent of the reservoir and its inundation of BLM lands.[50] Also on December 15, 2011, Turlock filed a report on its backwater analysis, including computer input and output data,[51] and on December 22, 2011, Turlock provided the Commission with a compact disk containing the computer data and model runs in electronic format.[52] On January 5, 2012, Turlock filed a response disputing the information in NMFS's December 15, 2011 filing, arguing that NMFS's analysis and projection of a contour line on a topographical map did not demonstrate that the La Grange Reservoir inundates BLM land, and referencing the information Turlock filed on December 15 and 22, 2012, as justification for the conclusion that the reservoir does not inundate any BLM land.[53]

26. On April 12, 2012, NMFS filed supplemental information on the federal lands issue, including a backwater analysis at flows of 10 and 100 cfs, and arguing that at these flows, the La Grange Reservoir occupies BLM lands.[54] On May 14, 2012, Turlock filed a response disputing NMFS's arguments and conclusions, arguing that the extent of the reservoir should be determined under conditions of normal maximum water surface elevation, defined by considering the backwater effects under conditions of normal maximum flow at a project.[55]

B. Commission Staff's Review

27. To assist in resolving this dispute, Commission staff prepared a report that reviews Turlock's backwater analysis and subsequent filings concerning whether the La Grange Reservoir occupies federal lands. The report, which staff is making available

[50] Letter from Steve Edmondson, NMFS, to Kimberly Bose, Commission Secretary (filed Dec. 15, 2011) and attached map (Appendix 1).

[51] Letter from John Whittaker, Winston & Strawn LLP, to Kimberly Bose, Commission Secretary, attaching Turlock's La Grange Backwater Analysis (filed Dec. 15, 2011).

[52] *See* Letter from John Whittaker, Winston & Strawn LLP, to Kimberly Bose, Commission Secretary (filed Dec. 22, 2011).

[53] Letter from John Whittaker, Winston & Strawn LLP, to Kimberly Bose, Commission Secretary (filed Jan. 5, 2012).

[54] Letter from Richard Wantuck, NMFS, to Kimberly Bose, Commission Secretary (filed April 12, 2012).

[55] Turlock Letter at 3 (filed May 14, 2012).

concurrently with issuance of this order, provides a more detailed discussion of the upstream extent of La Grange Reservoir than what appears here.[56]

28. The Commission has defined backwater as the amount the depth of flow has been increased by an obstruction such as a dam.[57] This definition focuses on the depth of the water surface elevation. In contrast, as explained below, Turlock's analysis incorrectly focuses on the gradient of the water surface elevation. According to the Commission's definition of backwater, the upstream extent of the reservoir is the point where the water surface elevations for "with-dam" and "without-dam" conditions for a given flow are equal.

29. Turlock prepared its backwater analysis using the U.S. Army Corps of Engineers' Hydrologic Engineering Center River Analysis System (HEC-RAS). Staff examined the HEC-RAS model that Turlock provided and did not make any changes to the model or the assumptions used. Staff reviewed the outputs of Turlock's model and determined that for both flow conditions that Turlock examined, 2,350 cubic feet per second (cfs) and 4,000 cfs,[58] the water surface elevations for "with-dam" and "without-dam" conditions are equal at river station 11,352.5 feet upstream of the dam.[59] This location is well beyond the current BLM property boundary, which is located at river station 5,853 feet. Thus, using the Commission's definition of backwater, Turlock's backwater analysis demonstrates that the La Grange Reservoir occupies federal lands.

30. Turlock states that it conducted a water level survey to determine the approximate end of the La Grange Reservoir.[60] Turlock argues that, based on the abrupt change in gradient from about 1.5 feet per mile to 7 to 8 feet per mile, Turlock identified the upstream limit of the reservoir to be about 5,400 feet above La Grange Dam. Turlock adds that to confirm this conclusion, it developed a backwater model of this section of the Tuolumne River and compared "with-dam" and "without-dam" water surface profiles at normal river flows. Turlock argues that this backwater model showed that the transition

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[56] Federal Energy Regulatory Commission, Staff Analysis of La Grange Backwater Model, Docket No. UL11-1-000 (Dec. 2012).

[57] *Public Utility District No. 1 of Pend Oreille County, Washington*, 77 FERC ¶ 61,146 at 61,543 n. 11 (1996).

[58] Turlock chose these flows because they represent the amounts that the Turlock and Modesto Irrigation Districts are permitted to divert under their water rights; that is, 2,350 cfs year round and 4,000 cfs for 60 days each spring.

[59] La Grange Dam is station 0 feet.

[60] La Grange Report at 11 (filed Oct. 11, 2011).

from reservoir to river occurs generally between 4,700 and 5,300 feet upstream of the dam, further corroborating its survey data.[61]

31. As noted, however, Turlock's analysis improperly focuses on the gradient of the water surface elevation, and thus does not account for the full backwater effect of the dam. Turlock's approach assumes that reservoir water surface gradients generally appear flat and uniform, whereas river gradients in steeper areas appear higher and follow the river bed. However, reservoirs are influenced by the terrain and can have a gradient such that their surface level varies, depending on where it is measured.[62] For this reason, focusing on gradient can be misleading and can lead to incorrect conclusions about the extent of the reservoir.

32. Turlock argues that NMFS's projection of the crest elevation of La Grange Dam on a topographical map showing a continuation of the contour line does not demonstrate that the La Grange Reservoir inundates BLM lands, and does not "undermine the scientific and data-supported analyses" that Turlock provided.[63] As noted, however, while staff accepts the assumptions and output of Turlock's backwater analysis, the conclusion that Turlock draws from that analysis is incorrect, because Turlock does not use the Commission's definition of backwater. Moreover, Commission regulations permit the use of contour lines, including the contour elevation, to describe the boundary around a project impoundment.[64] Thus, this method provides additional support for the conclusion that the La Grange Reservoir inundates BLM lands.

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[61] *Id*.

[62] For example, the surface level of the Box Canyon Project reservoir differs by more than 10 feet, depending on whether it is measured at the dam or at the town of Cusick, more than 35 miles upstream. *See Public Utility District No. 1 of Pend Oreille County, Washington*, 112 FERC ¶ 61,055 at 61,407 n. 11 (2005).

[63] Letter from John Whittaker, Winston & Strawn LLP, to Kimberly Bose, Commission Secretary, at 2 (filed Jan. 5, 2012).

[64] *See* 18 C.F.R. § 4.41(h)(2)(i)(A)(1) (2012). In a later letter, Turlock notes that, under subsection (h)(2)(i)(B) of that section, the project boundary must be located no more than 200 feet (measured horizontally) from the exterior margin of the reservoir, defined by the normal maximum surface elevation, thus making it clear that the extent of the reservoir "is determined by examining the lands needed under conditions of normal maximum water surface elevation." *See* Letter from John Whittaker, Winston & Strawn LLP, to Kimberly Bose, Commission Secretary, at 3 (filed May 14, 2012). Turlock then suggests (at 5) that the starting elevation for evaluating normal flows of 2,350 cfs and 4,000 cfs should not be the spillway crest elevation of 296.46 ft mean sea level (msl), as Turlock assumed in its analysis, but rather should be about two feet lower, to reflect the Districts' normal operating practice at the La Grange Project. This is incorrect. The

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33. Staff's review of Turlock's backwater analysis demonstrates that the La Grange Reservoir occupies lands of the United States. Therefore, the project requires licensing under FPA section 23(b)(1).

COMPLETE UNIT OF DEVELOPMENT

34. On November 18, 2011, Conservation Groups[65] filed a copy of their comments on the Districts' proposed study plan for relicensing the Don Pedro Project No. 2299.[66] Conservation Groups state that these comments are relevant to the Commission's determination of whether it has mandatory licensing authority over Turlock's La Grange Project. Among other things, they request that the Commission determine whether the La Grange Project is used and useful for making fish flow releases required under the Districts' license for the Don Pedro Project, and must therefore be licensed either separately or as part of the complete unit of development comprising the Don Pedro Project. They also request that the Commission determine whether the La Grange Project is used and useful for regulating peaking flows resulting from power operations at the Don Pedro Project.[67]

35. Under FPA section 4(e),[68] the Commission licenses hydroelectric "project works," which are defined in FPA section 3(12) as "the physical structures of a project."[69] A "project" is defined in FPA section 3(11) as "a complete unit of improvement or development," which consists of:

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exterior margin of the reservoir is defined by the normal maximum surface elevation, not some lower elevation that a project operator may choose to maintain for operational reasons. In this case, because the top of the dam is almost entirely a spillway, the spillway crest defines the reservoir's normal maximum surface elevation.

[65] Conservation Groups are: American Rivers, American Whitewater, California Sportfishing Protection Alliance, California Trout, Inc., Central Sierra Environmental Resource Center, Environmental Defense Fund, Friends of the River, Golden West Women Flyfishers, Northern California Council Federation of Fly Fishers, Merced Fly Fishing Club, Pacific Coast Federation of Fishermen's Associations, Trout Unlimited, Tuolumne River trust, and Water 4 Fish.

[66] Conservation Groups' Comments (filed Nov. 18, 2011 in Docket No. UL11-1-000) (attaching a copy of their study plan comments filed on Oct. 24, 2011, in the docket for Project No. 2299).

[67] *Id*. at 2 and attached study plan comments at 9-13.

[68] 16 U.S.C. § 797(e) (2006).

[69] 16 U.S.C. § 796(12) (2006).

> a powerhouse, all water conduits, all dams and appurtenant works and structures (including navigation structures) which are a part of said unit, and all storage, diverting, or forebay reservoirs directly connected therewith, the primary line or lines transmitting power therefrom to the point of junction with the distribution system or with the interconnected primary transmission system, all miscellaneous structures used and useful in connection with said unit or any part thereof, and all water rights, rights-of-way, ditches, dams, reservoirs, lands or interest in lands the use and occupancy of which are necessary or appropriate in the maintenance and operation of such unit.[70]

Under this definition, a complete unit of development includes, among other things, any reservoirs that are directly connected to a powerhouse, all miscellaneous structures that are used and useful in connection with a project, any reservoirs directly connected with the project, and any dams and reservoirs that are necessary or appropriate in the maintenance and operation of the project.[71]

A. Minimum Flows for Fish

36. The La Grange reservoir is not directly connected with the Don Pedro Project. However, the existing license for the Don Pedro Project requires the Districts to release minimum flows for fish from the Don Pedro Project and maintain them in the lower Tuolumne River, as measured at the La Grange Bridge about 1.7 miles downstream of the La Grange Dam.[72] In order to maintain these minimum flows in the river at that location,

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[70] 16 U.S.C. § 796(11) (2006).

[71] The statutory test for dams and reservoirs that are not directly connected to the part of a unit of development that contains the generating facilities is whether they are necessary or appropriate in the maintenance and operation of such unit. *See Union Water Power Co.*, 73 FERC ¶ 61,296 at 61,824 n.13 (1995), *Pyramid Lake Paiute Tribe of Indians*, 12 FERC ¶ 61,150 at 61,134 (1980).

[72] Specifically, Article 37 requires the Districts to "maintain minimum stream flows in the Tuolumne River at La Grange Bridge for fish purposes" in accordance with a schedule set forth in the article. Article 38 requires the Districts to limit fluctuations in the height of the Tuolumne River at La Grange Bridge to protect fish spawning and incubation. *See Turlock and Modesto Irrigation Districts*, 31 FPC 510, 526 (1964). In issuing a license for the enlarged Don Pedro Project in 1964, the Commission stated that the "basic question" in the case was whether to condition the license to require specified releases from the project to protect fall run king salmon in the Tuolumne River below La Grange Dam. *Id.* at 512. On judicial review, the court upheld the Commission's authority to require these minimum flows for fish protection. *California v. FPC*, 345 F.2d 917, 924 (9th Cir. 1965). In 1996, the Commission approved a settlement agreement and amended the license to require the Districts to maintain increased flows for fish in the (continued)

the Districts can either pass them over the La Grange Dam as spill or use them for hydroelectric power generation at the La Grange powerhouse and then release them into the project's tailrace, which joins the Tuolumne River just below the powerhouse. There are also release structures on either side of the dam that the Districts can use to release water to the Tuolumne River without first sending it through the La Grange powerhouse.

37. Based on these facts, it could be argued that the La Grange Dam, reservoir, powerhouse, and related release structures are used to release minimum flows for fish from the Don Pedro Project into the lower Tuolumne River. As such, they could be considered structures that are necessary or appropriate in the maintenance and operation of the Don Pedro Project, and thus would be part of the complete unit of development comprising the Don Pedro Project[73]

38. However, it could also be argued that the La Grange Project is operated primarily for irrigation, and the Districts are able to maintain the minimum flows required by their license for the Don Pedro Project by simply passing the flows through the La Grange Project, without the need to include those project structures as part of the Don Pedro Project. The Commission recognized this when it licensed the Don Pedro Project without requiring that the La Grange Project structures be included as licensed project works, noting that the Districts would continue to operate the La Grange facilities after construction of the enlarged Don Pedro Project.[74] Commission licenses sometimes require licensees to maintain minimum flows at specified locations downstream of their projects. This does not necessarily mean, however, that any intervening structures that might divert water out of the river or pass water downstream must be considered project works of the upstream project.

39. The Commission has stated that, while it does not license facilities that are unrelated and only incidental to the power generation facilities, it must license all project works that are related to, and necessary for, power generation.[75] In this case, the La

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lower Tuolumne River, to be released from the Don Pedro Project and measured at La Grange Bridge downstream of the La Grange Project. *Turlock and Modesto Irrigation Districts*, 76 FERC ¶ 61,117 (1996).

[73] If the Commission or Commission staff were to so find, the La Grange Project would require licensing, either separately or as part of the Don Pedro Project. The Commission has stated that, although all parts of a complete unit of development must be licensed, they do not necessarily have to be included in a single license. *See, e.g.*, *Hudson River-Black River Regulating District*, 100 FERC ¶ 61,319 at 62,455 n. 8 (2002); *Orange and Rockland Utilities*, 44 FERC ¶ 61,236 at 61,869 n.30 (1988).

[74] *Turlock and Modesto Irrigation Districts*, 31 FPC 510, 512 (1964).

[75] *Big Bear Area Regional Wastewater Agency*, 33 FERC ¶ 61,115 at 61,246 (1985).

Grange Project generates power and thus requires licensing based on its location on a navigable river and its use of federal lands, regardless of any possible connection to the Don Pedro Project. Because the La Grange Project requires licensing on other grounds, I need not now determine whether the La Grange Project might also require licensing as part of a complete unit of development with the Don Pedro Project.

B. Re-Regulation of Flows

40. Commission staff also examined whether the La Grange Dam is used to re-regulate flows from the Don Pedro Project. To do this, staff requested that Turlock provide information on Don Pedro Project and La Grange Dam operations. According to Turlock, releases are made from the Don Pedro Project to meet demand for irrigation water, minimum flow requirements for fishery purposes, and for flood control purposes.

41. In a September 5, 2012 e-mail, Turlock's consultant stated that the LaGrange Dam is mainly operated as a run-of-river facility and the reservoir has only enough storage to balance any allocation of flow (water rights) between Turlock and Modesto Irrigation District (Modesto) and avoid spilling any water above the required minimum flow.[76] According to Turlock's LaGrange Reservoir Elevation-Storage curve,[77] the amount of storage between 292 feet msl, the point at which a low alarm is triggered, and 296 feet msl, at which a high alarm sounds, is about 300 acre-feet. Turlock's and Modesto's intakes are between those elevations. The headwater duration curve provided for the reservoir levels of the LaGrange reservoir indicates that, when not in spill mode (i.e., above elevation 296.5 feet), the reservoir is operated 90 percent of the time between elevations 296 feet and 294 feet, and the storage amount between those elevations is about 80 acre-feet.

42. To further assist in determining whether the La Grange Dam re-regulates releases from the Don Pedro reservoir, staff requested in a September 17, 2012 letter that Turlock provide hourly operation data for the Don Pedro and La Grange Projects for the years 2009, 2010, and 2011, which according to Turlock's consultant correlates with years that are hydrologically below normal, normal, and wet, respectively. In an October 17, 2012 letter, Turlock provided the hourly data on: (a) total releases from the Don Pedro Reservoir, (b) releases for Turlock's and Modesto's irrigation requirements, (c) minimum

[76] See additional information Turlock and Modesto provided to Commission staff by email on Sept. 5, 2012 (placed in eLibrary on Dec. 3, 2012). A run-of-river project is one for which inflow equals outflow; i.e., the project does not hold flows for release at a later time. By this definition the La Grange Project is not a run-of-river project, because it diverts most inflow for irrigation and ordinarily releases only a minimum amount of flow to the Tuolumne River.

[77] See Figure 25, included in additional information Turlock and Modesto provided to Commission staff on Sept. 5, 2012 (placed in eLibrary on Dec. 3, 2012).

flow requirement plus buffer, (d) flood management releases, (e) La Grange pool elevations, (f) river flow at the La Grange gage located below the dam, and (g) La Grange powerhouse releases and generation.

43. A review of the hourly data indicates that for the majority of the time during the period from 2009 to 2011, the La Grange reservoir elevation was between 293 feet and 296 feet msl, which equates to a storage volume between the two elevations of approximately 200 acre-feet. The amount of time the La Grange Reservoir can hold back the average hourly Don Pedro Reservoir releases, with the 200 acre-feet of storage during years 2009 through 2011, is shown in the table below:

Year	Average Hourly Don Pedro Releases (cfs)	Holding Time in LaGrange Reservoir (hrs)
2009	1,330	1.81
2010	2,382	1.01
2011	4,159	0.58

44. This shows that the amount of available storage in La Grange Reservoir is not sufficient to re-regulate releases from the Don Pedro Project reservoir. Therefore, the La Grange Project does not require licensing as a re-regulating reservoir for the Don Pedro Project.

CONCLUSION

45. The evidence cited in the above discussion shows that the La Grange Project is located on a navigable water of the United States and occupies federal lands. In accordance with section 23(b)(1) of the FPA, the Turlock Irrigation District (or both the Turlock and Modesto Irrigation Districts) must obtain a license (or an exemption, if the project qualifies) for the continued operation of the La Grange Hydroelectric Project.

The Director orders:

(A) Pursuant to section 23(b)(1) of the Federal Power Act, the La Grange Hydroelectric Project is required to be licensed.

(B) Within 90 days of the date of this order, Turlock Irrigation District (or both Turlock and Modesto Irrigation Districts) must file a schedule, and send a copy to the San Francisco Regional Office, for submitting, no later than 36 months after the issuance of this order, a license or exemption application conforming to Part 4 or Part 5 of the Commission's Regulations.[78] Turlock Irrigation District (or both Turlock and Modesto

[78] Under the Commission's Integrated Licensing Process, an applicant must file a notification of intent and pre-application document to begin the pre-filing consultation and study process, and must file a preliminary licensing proposal no later than 150 days (continued)

Irrigation Districts) will be relieved of this filing requirement if any other party files a license application for this site within the 36-month time period, as long as that license application remains pending before the Commission.

(C) Turlock Irrigation District (or both Turlock and Modesto Irrigation Districts) must file with the Secretary of the Commission and send a copy to the San Francisco Regional Office, within 90 days of the date of this order, a schedule for complying with Part 12 of the Commission's regulations for the La Grange Hydroelectric Project. The schedule must provide for filing an emergency action plan, in accordance with section 12.20 of the Commission's regulations, 18 C.F.R. § 12.20 (2012), no later than six months from the date of this order, unless an exemption for filing an emergency action plan is requested and granted by the Commission's Dam Safety and Inspections' San Francisco Regional Office.[79]

(D) This order constitutes final agency action. Any party may file a request for rehearing of this order within 30 days from the date of its issuance, as provided in section 313(a) of the FPA, 16 U.S.C. § 825*l* (2006), and the Commission's regulations at 18 C.F.R. § 385.713 (2012). 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.

Edward A. Abrams
Director
Division of Hydropower Administration
and Compliance

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prior to the deadline for filing a license application. See 18 C.F.R. §§ 5.1(d), 5.16(a) (2012). An applicant may elect to file a draft license application. *Id.* at § 516(c); *see also* 18 C.F.R. §4.32(h) (2012).

[79] A copy of the schedule must be submitted to the Secretary of the Commission, along with one copy to the San Francisco Regional Office. Three copies of the Emergency Action Plan must be submitted to the San Francisco Regional Office.