156 FERC ¶ 61,106
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Norman C. Bay, Chairman;
Cheryl A. LaFleur, Tony Clark,
and Colette D. Honorable.

Grand River Dam Authority Project No. 1494-433

ORDER APPROVING REQUEST FOR TEMPORARY VARIANCE

(Issued August 12, 2016)

1. On May 6, 2016, as supplemented June 2 and June 30, 2016, Grand River Dam Authority (GRDA or licensee) filed an application to permanently amend the reservoir elevation rule curve requirements contained in Article 401 of the license for the Pensacola Project. GRDA also requests that, if the Commission cannot process its permanent amendment application by August 15, 2016, the Commission grant a temporary variance for the summer/fall of 2016 while continuing to process its amendment application. As discussed below, we grant GRDA's request for a temporary variance.[1]

I. Background

2. On April 24, 1992, the Commission issued a new license to GRDA for the continued operation of the 105.18-megawatt Pensacola Project, located on the Grand (Neosho) River in Craig, Delaware, Mayes, and Ottawa Counties, Oklahoma.[2] The project, which operates in a peaking mode, includes a 5,920-foot-long, 147-foot-high dam; a 46,500-acre reservoir (Grand Lake); a powerhouse at the base of the dam; and a 1.5-mile-long tailrace and spillway channel in the riverbed below the dam.

[1] GRDA's application did not contain sufficient information to make a decision on the permanent amendment by August 15, 2016. Commission staff continues to evaluate GRDA's request for a permanent amendment to its Article 401 rule curve.

[2] *Grand River Dam Authority*, 59 FERC ¶ 62,073 (1992).

3. Grand Lake has a surface area of about 46,500 acres at a pool elevation of 745 feet Pensacola Datum (PD),[3] with approximately 522 miles of shoreline that extends about 66 miles upstream from the dam. Grand Lake is managed for multiple purposes, including power generation, recreation, fish and wildlife enhancement, and flood control. Dedicated flood storage (the flood pool) is provided between elevations 745 and 755 feet. When reservoir elevations are within the flood pool, the Tulsa District of U.S. Army Corps of Engineers (Corps) directs GRDA's releases from the dam under the terms of a 1992 Letter of Understanding and Water Control Agreement between the Corps and GRDA that addresses flooding both upstream and downstream of Grand Lake.[4]

4. When reservoir elevations are below the limits of the flood pool, GRDA operates the Pensacola Project pursuant to license Article 401. In order to balance the multiple uses of the reservoir, Article 401, as amended in an order issued December 3, 1996,[5] requires GRDA to operate the Pensacola Project to maintain, to the extent practicable, the following seasonal target reservoir surface elevations, known as a rule curve, except as necessary for the Corps to provide flood protection:[6]

Period	**Reservoir Elevation, in Feet PD**
May through May 31	Raise elevation from 742 to 744
June 1 through July 31	Maintain elevation at 744
August 1 through August 15	Lower elevation from 744 to 743
August 16 through August 31	Lower elevation from 743 to 741

[3] Pensacola Datum (PD) is 1.07 feet higher than National Vertical Geodetic Datum (NVGD), which is a national standard for measuring elevations above sea level. Reservoir levels discussed in this order are in PD values unless otherwise specified.

[4] Section 7 of the Flood Control Act of 1944, Pub. L. No. 78-534, 58 Stat. 890, 33 U.S.C. § 709 (2012), directs the Secretary of the Army to prescribe regulations for the use of storage allocation for flood control or navigation at all reservoirs constructed wholly or in part with federal funds. A federal grant provided a substantial part of the funding for the construction of the Pensacola Project.

[5] *Grand River Dam Authority*, 77 FERC ¶ 61,251 (1996).

[6] The elevations in the rule curve were based on recommendations from the Grand/Neosho River Committee, a group formed in 1993 by the offices of U.S. Congressional delegations from Kansas and Oklahoma and consisting of representatives of towns, chambers of commerce, counties, and state resource agencies from Kansas and Oklahoma, the Kansas-Oklahoma Flood Control Alliance, the Neosho Basin Advisory Committee, and lakeshore landowners associations.

September 1 through October 15	Maintain elevation at 741
October 16 through October 31	Raise elevation from 741 to 742
November 1 through April 30	Maintain elevation at 742

5. Since issuance of the December 3, 1996 order, and prior to this proceeding, GRDA has applied to the Commission eight times for either temporary variances from, or permanent amendments of, the elevations specified in the Article 401 rule curve. Six of those applications were withdrawn by GRDA, denied, or dismissed by the Commission.[7] In July 2012, GRDA filed an application for a temporary variance so that it could operate the project to vary from the rule curve in late summer and early fall in order to alleviate effects of an ongoing regional drought. That application was approved in an order issued August 15, 2012.[8] In July 2015, GRDA applied for a temporary variance primarily to enhance recreational boating in late summer and early fall. That application, which involved the same changes to the rule curve elevations being requested in this proceeding, was approved in an order issued August 14, 2015.[9] As discussed herein, many of the factors considered in the 2015 proceeding are also present in this proceeding.

II. GRDA's Proposal

6. In its May 6, 2016 application, GRDA requests a permanent amendment of the Article 401 rule curve, and requests that, if the Commission cannot process a permanent amendment by August 15, 2016, be granted a temporary variance to begin implementing

[7] *See* June 26, 2015, Commission staff letter dismissing, for lack of adequate information, May 28, 2015 request for temporary variance to enhance recreational boating and tailwater dissolved oxygen management; July 3, 2013 Commission order denying March 20, 2013 request for temporary variance based on drought forecasts, *Grand River Dam Authority*, 144 FERC ¶ 61,007 (2013), and August 2, 2013 letter denying request for reconsideration; July 25, 2011 Commission staff letter dismissing, for lack of adequate information, April 6, 2011 request for a temporary (two-year) variance to enhance recreational boating; April 4, 2006 Commission staff letter denying March 13, 2006 request for temporary variance to respond to drought conditions, on basis that variance not warranted based on forecasted conditions; June 17, 2004 letter from GRDA withdrawing January 26, 2004 request to permanently amend Article 401 rule curve to enhance recreation, water quality, and wildlife habitat; and August 16, 1999 letter from GRDA withdrawing June 2, 1999 request for temporary variance (for calendar year 1999) to allow for alternative plan for millet seeding.

[8] *Grand River Dam Authority*, 140 FERC ¶ 62,123 (2012).

[9] *Grand River Dam Authority*, 152 FERC ¶ 61,129 (2015) (August 14, 2015 order).

the revised rule curve on August 15, 2016, while the Commission continues to process the permanent amendment. GRDA also proposes to implement a Storm Adaptive Management Plan and a Drought Adaptive Management Plan.[10] GRDA seeks the rule curve change to reduce the risk of vessel grounding at Grand Lake in late summer, improve recreation during the summer/fall peak recreation season, better balance competing stakeholder interests, and provide additional water storage, if necessary, to assist in maintaining dissolved oxygen (DO) concentrations in the river below the project, and below its Markham Ferry Project (No. 2183), located immediately downstream.

A. Rule Curve Modification

7. Under GRDA's proposal, between August 16 and September 15, the reservoir would be maintained at elevation 743 feet, which is up to two feet higher than the current rule curve. Between September 16 and September 30, the elevation would be lowered from 743 to 742 feet. Between October 1 and October 31, the reservoir would be maintained at elevation 742 feet, which is up to one foot higher than the current rule curve. After October 31, reservoir elevations would follow the project's existing rule curve. GRDA's proposed rule curve change is illustrated in Figure 1.

[10] GRDA requests that, if the Commission approves a temporary variance for the summer/fall of 2016, that the approval include its Storm Adaptive Management Plan and Drought Adaptive Management Plan for the duration of the temporary variance.

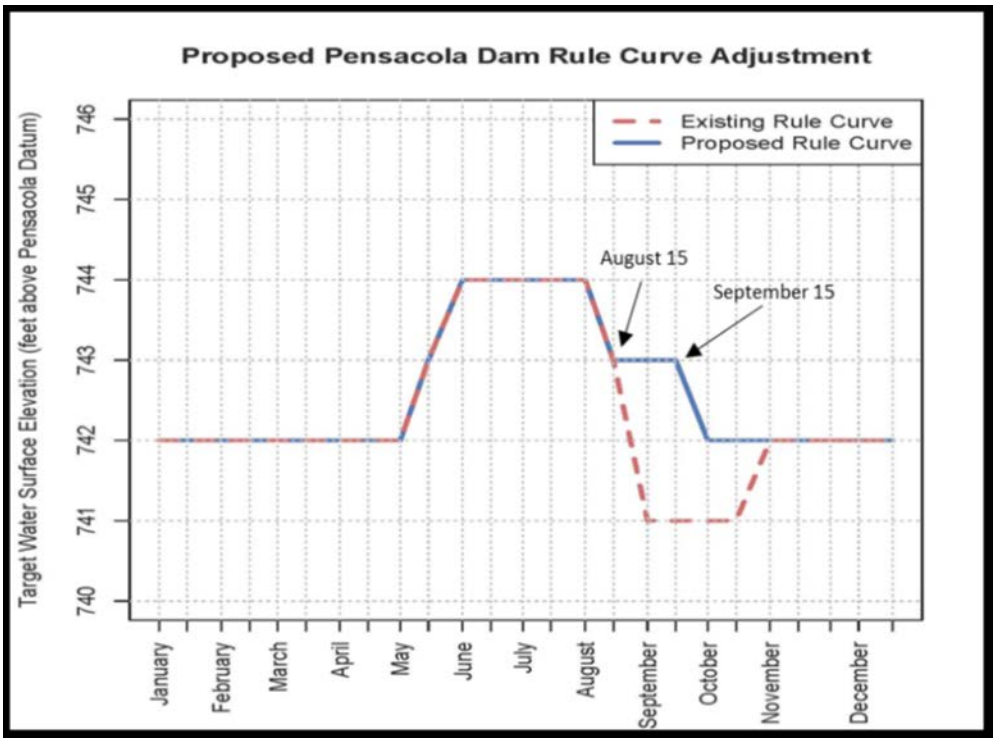

Figure 1: Proposed changes to Article 401 reservoir rule curve elevations.[11]

B. Storm Adaptive Management Plan

8. Similar to the storm adaptive management process approved in 2015 as part of the previous temporary rule curve variance, GRDA proposes to implement a Storm Adaptive Management Plan that would be used in anticipation of and during major precipitation events within the Grand/Neosho River basin that might result in high water conditions upstream or downstream of Grand Lake.

9. According to the plan, GRDA would review, at a minimum, on a daily basis the following information: (1) weather forecasts in the watershed; (2) Grand Lake surface elevation data; (3) data from U.S. Geological Survey gages upstream and downstream of the project; (4) surface elevations at the Corps' upstream John Redmond Reservoir[12] and downstream Lake Hudson (part of GRDA's Markham Ferry Project); and (5) other relevant information affecting surface elevations at Grand Lake during the potential flood period.

[11] GRDA May 6, 2016 Application, Appendix 1 at 5.

[12] This reservoir is used for flood control and is located upstream of the Pensacola Project.

10. If GRDA's daily review of the information indicates a probability of high water conditions in the Grand/Neosho River basin in the vicinity of the project, GRDA would immediately provide the information to federal and state resource agencies, local government officials, Commission staff, tribes, and other interested stakeholders.[13] In conjunction with the distribution of the information, GRDA would also schedule a conference call. Prior to the conference call, GRDA would consult with the Corps to determine whether any reservoir management actions could be taken to avoid, reduce, or minimize high water levels upstream or downstream of the project. During the conference call, GRDA would then notify the participants of any decision to take action. GRDA would continue regular communications with all participants during each event in order to keep them informed of prevailing conditions.[14]

11. GRDA notes that, although the protocols contained in the Storm Adaptive Management Plan are separate and distinct from the protocols in its Emergency Action Plan (EAP) for the project,[15] the Storm Adaptive Management Plan complements the EAP and involves many of the same entities. According to the Storm Adaptive Management Plan, if the EAP were triggered, the communication protocols in the EAP would supersede those included in the Storm Adaptive Management Plan until the emergency was resolved.

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[13] The current contact list for this plan includes: Commission staff, the Corps, National Weather Service, Oklahoma Secretary of Energy and Environment, Oklahoma Department of Wildlife Conservation, Oklahoma Water Resources Board, Oklahoma Office of Emergency Management, U.S. Fish and Wildlife Service, City of Miami, Ottawa County Office of the County Commissioner, Ottawa County Emergency Management, Modoc Tribe, United Keetoowah Band of Cherokees, Quapaw Tribe of Indians, Oklahoma State Historic Preservation Office (Oklahoma SHPO), and Oklahoma Archeological Survey (Oklahoma AS). The contact list is subject to change at any time as other entities express an interest or need for participation.

[14] Such communications would include conference calls, email messages, or other forms of communication, as appropriate for the given situation.

[15] An Emergency Action Plan is a formal document that identifies potential emergency conditions at a dam and specifies preplanned actions to be followed to minimize property damage and risk to human life. The Emergency Action Plan describes actions the dam owner will take to moderate or alleviate a problem at the dam, as well as actions the dam owner, in coordination with emergency management authorities, will take to respond to incidents or emergencies related to the dam.

12. The Storm Adaptive Management Plan also includes provisions regarding historic properties in the project area that could be adversely affected by high water levels. As discussed in Part V below, the plan specifies that, if the Oklahoma SHPO concludes that any actions to address high water levels at Grand Lake would adversely affect any archaeological site or other cultural resource in the project area, GRDA would consult with the Oklahoma SHPO to develop a site-specific plan for protection or mitigation of the site. The plan also includes a provision for the unanticipated discovery of unidentified burial sites in the project area.

C. Drought Adaptive Management Plan

13. GRDA proposes a Drought Adaptive Management Plan that is similar to the plan approved as part of GRDA's 2015 temporary rule curve variance. The plan guides project operations and flow releases in the event of significant drought conditions. GRDA notes that it is required to maintain DO concentrations below the Pensacola Project and below its downstream Markham Ferry Project. GRDA states that, during periods of drought, strict adherence to the Article 401 rule curve could prevent GRDA from maintaining downstream DO concentration requirements and maintaining downstream reservoir elevations at Markham Ferry sufficient to operate its Salina Pumped Storage Project (P-2524),[16] as well as meeting other water supply needs.

14. Under GRDA's plan, GRDA would monitor information from the National Drought Mitigation Center's (NDMC) U.S. Drought Monitor.[17] Based on this information, if GRDA determines that drought conditions appear imminent, GRDA would begin weekly teleconferences with, in general, the same federal and state resource agencies, local government officials, Commission staff, tribes, and other interested stakeholders GRDA intends to consult with under the Storm Adaptive Management Plan.[18] In the teleconferences, GRDA would keep these parties informed of prevailing conditions and any plans to begin additional releases in the event a severe to exceptional drought is declared by the NDMC U.S. Drought Monitor.

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[16] The Markham Ferry Project's reservoir, Lake Hudson, serves as the lower reservoir for the Salina Pumped Storage Project.

[17] The U.S. Drought Monitor is a weekly map of drought conditions that is produced jointly by the National Oceanic and Atmospheric Administration, the U.S. Department of Agriculture, and the National Drought Mitigation Center at the University of Nebraska-Lincoln. *See* United States Drought Monitor, http://droughtmonitor.unl.edu.

[18] The only participant not listed for both plans is the National Weather Service, Tulsa Forecast Office, which is only included in the Storm Adaptive Management Plan.

15. Under the plan, if the NMDC U.S. Drought Monitor declares a severe to exceptional drought for the Grand/Neosho River basin, GRDA may, at its discretion and based on input received during the weekly teleconferences, commence additional releases from Pensacola Dam, regardless of the prevailing levels at Grand Lake and Article 401 rule curve target elevations. Such releases would not exceed a rate equal to 0.06 feet of reservoir elevation per day, which is equivalent to approximately 837 cubic feet per second per hour over a 24-hour period.

16. During the drought, GRDA would conduct weekly teleconferences to discuss project operations and would address the following issues in each teleconference: (1) current and forecasted drought conditions and planned project operation; (2) maintenance of water levels and flows sufficient to maintain downstream DO concentrations for water quality and to prevent fish kills; (3) maintenance of reservoir elevations at Markham Ferry sufficient to operate its Salina Pumped Storage Project for system reliability; and (4) based on available information, when the severe to exceptional drought period is expected to end. When severe to exceptional drought conditions are over, GRDA would cease releases under the plan, return to operating the project to target Article 401 rule curve elevations, and notify federal and state resource agencies and other stakeholders involved in the teleconferences.

D. Other Information Included in Application

17. GRDA also includes in its application: (1) an environmental report; (2) a preliminary review by Mead & Hunt, dated May 6, 2016, of a hydraulic modeling study conducted by Tetra Tech dated February 3, 2016 (2016 Tetra Tech Study);[19] (3) a 2014 rule curve analysis performed by Alan C. Dennis (2014 Dennis Study);[20] (4) the independent modeling analysis performed by Commission staff as part of its review of GRDA's 2015 temporary variance request (2015 Staff Analysis);[21] (5) letters from the

[19] The 2016 Tetra Tech Study was completed for the City of Miami, Oklahoma. *Hydraulic Analysis of the Effects of Proposed Rule Curve Change at Pensacola Dam on Neosho River Flooding in the Vicinity of Miami, Oklahoma*, Docket No. P-1494-433 (filed April 14, 2016) (2016 Tetra Tech Study). This and other relevant studies of flood effects are discussed in Part IV of this order.

[20] The 2014 Dennis Study is a graduate thesis submitted to the University of Oklahoma graduate program in 2014 by Alan C. Dennis. *Floodplain Analysis of the Neosho River Associated with Proposed Rule Curve Modifications for Grand Lake O' the Cherokees*, Docket No. P-1494-432 (filed May 29, 2015) (2014 Dennis Study).

[21] Commission staff's independent analysis performed for GRDA's temporary variance request was filed under Docket No. P-1494-432 on August 31, 2015 (2015 Staff Analysis).

University of Oklahoma regarding the 2014 Dennis Study and the 2016 Tetra Tech Study; (6) a letter from the Corps regarding the 2014 Dennis Study; (7) a summary report on a hydraulic modelling technical conference held December 16, 2016, at the University of Oklahoma; and (8) copies of comments GRDA received on a draft of its application and GRDA's responses to the comments.

E. Staff Additional Information Request and Response

18. On May 18, 2016, Commission staff issued a letter to GRDA identifying additional information necessary for staff to continue evaluating GRDA's application, including: (1) a report on the results of Mead & Hunt's review of the 2016 Tetra Tech Study; (2) an analysis of the effects to property and structures resulting from the water surface elevations estimated in the 2016 Tetra Tech Study; and (3) an analysis of the effects on fisheries and aquatic resources that would occur under the proposed rule curve change. On June 2, 2016, GRDA filed additional information on fisheries and aquatic resources. On June 30, 2016, GRDA filed additional information addressing the 2016 Tetra Tech Study and the impacts on property and structures.

III. Public Notice, Interventions, Comments

19. The Commission issued public notice of GRDA's application for a temporary variance on July 8, 2016, and published the notice in the *Federal Register* on July 14, 2016.[22] The notice established July 22, 2016, as the deadline for submitting comments, motions to intervene, and protests. The notice was also published in five newspapers in the project area.

20. The U.S. Department of the Interior (DOI) filed a timely notice of intervention.[23] The City of Miami, Oklahoma (City of Miami), the Inter-Tribal Council of Northeast Oklahoma and its member tribes[24] (collectively, Tribal Council), and Mr. N. Larry Bork (on behalf of citizens and businesses located in Ottawa County, Oklahoma) filed timely

[22] 81 Fed. Reg. 45,461 (July 14, 2016).

[23] A timely notice to intervene filed by the U.S. Department of the Interior is granted by operation of Rule 214(a)(2). 18 C.F.R. § 385.214(a)(2) (2015).

[24] The Tribal Council member tribes are the Miami Tribe of Oklahoma, the Wyandotte Nation, the Ottawa Tribe of Oklahoma, the Peoria Tribe of Oklahoma, the Eastern Shawnee Tribe of Oklahoma, the Shawnee Tribe, Modoc Tribe, Quapaw Tribe, and the Seneca-Cayuga Tribe. However, the Modoc Tribe and Quapaw Tribe did not join the motion to intervene and protest.

motions to intervene and comments opposing GRDA's application.[25] The Modoc Tribe of Oklahoma also filed comments opposing the application.[26] Oklahoma Water Resources Board filed comments in support of GRDA's application. The comments raised are addressed below.

21. On June 8, 2016, the Tribal Council formally requested consultation with the Commission regarding the rule curve proceeding and early notice to be included as an interested party in the project's re-licensing matters.[27] The Commission granted the Tribal Council's request, and after providing notice to the public of the meeting on July 8, 2016, Commission staff and the Tribal Council and its member tribes met in Miami, Oklahoma, on August 3, 2016. The comments made by the Tribal Council at the meeting are addressed below.

IV. Flood Analysis

A. Summary of the 2015 Review of Studies

22. As discussed in the August 14, 2015 order, Commission staff reviewed the 2014 Dennis Study and a report dated January 27, 2004, by Dr. Forrest M. Holly Jr. (2004 Holly Study),[28] both of which analyzed the flooding impacts, particularly upstream in the area of Miami, Oklahoma, that would occur if the Grand Lake reservoir elevation were lowered at later dates than permitted by the rule curve. Additionally, as part of its review of GRDA's 2015 temporary variance request, Commission staff performed an independent analysis of three historic storm events (October 1986, September 1993, and October 2009) that occurred at the same time of year as the proposed variance. The 2004 Holly Study and the 2014 Dennis Study did not analyze potential downstream flooding impacts. However, because flooding during storm events is known to occur downstream of the dam, the 2015 Staff Analysis evaluated the potential impacts due to the proposed

[25] Timely, unopposed motions to intervene are granted by operation of Rule 214(b) of the Commission's Rules of Practice and Procedure. 18 C.F.R. § 385.214(b) (2015).

[26] The Modoc Tribe filed comments in response to the Commission's March 16, 2016 notice of request to reduce the comment period on GRDA's draft amendment application from 60 to 30 days. The tribe's comments pertained to the overall rule curve proceeding and not the reduction of the comment period, and are addressed herein.

[27] All member tribes joined the Tribal Council's June 8, 2016 request.

[28] *Analysis of Effect of Grand Lake Power-Pool Elevations on Neosho River Levels During a Major Flood* (2004 Holly Study), Docket No. P-1494-000 (filed Jan. 29, 2004).

rule curve change downstream of Pensacola Dam in the location of the U.S. Geological Survey streamflow gage No. 07190500, on the Neosho River near Langley, Oklahoma, several miles downstream of Pensacola Dam (Langley gage).

23. The 2015 Staff Analysis found that the maximum incremental flooding increase at the City of Miami occurs during the October 2009 storm, and is approximately 0.2 foot if the Grand Lake reservoir elevation is raised from 741 to 743 feet. These results are similar to those in the 2004 Holly Study (approximately 0.2 to 0.1 foot) and the 2014 Dennis Study (less than 0.2 foot).

24. To assess the potential flooding impacts of the proposed rule curve change at Miami, the 2015 Staff Analysis evaluated the number of additional structures that could be impacted during a storm similar to the October 2009 storm. Although a precise number of impacted structures could not be determined due to the lack of surveyed structure data and the coarseness of the available topographic data, review of aerial photographic data in the vicinity of Miami indicated that there would be increased flooding of 11 structures already inundated with a reservoir starting elevation of 741 feet and an additional 22 structures that are located within a 30-foot horizontal buffer of the flood inundation zone that could also be impacted.

25. The 2015 Staff Analysis also quantified the increased physical danger to residents due to the incremental increase in inundation that would occur under the temporary variance. Using standard Bureau of Reclamation flood danger graphs, the 2015 Staff Analysis found no increase in danger in the vicinity of Miami.[29] Because many inundated structures are located at the edge of the inundated area, where flood depths are minor and the incremental flooding impacts are minimal, the 2015 Staff Analysis determined that the increase in the probability for risk to human life is negligible at Miami.[30]

[29] The U.S. Department of the Interior, Bureau of Reclamation, Assistant Commissioner, Engineering and Research Technical Memorandum No. 11 (ACER 11), Downstream Hazard Classification Guidelines (December 1988) procedure describes the danger posed to inundated structures based on flood depth and flood velocity.

[30] The 2015 Staff Analysis also determined that the increase in the probability for risk to human life downstream of the dam during storm events would be negligible under the proposed rule curve change.

B. 2016 Tetra Tech Study

26. The 2016 Tetra Tech Study evaluated the effects of the proposed rule curve on flooding upstream of Grand Lake, specifically in the vicinity of Miami, that would occur during the October 1986, September 1993, and October 2009 historic storm events. The study was performed using a HEC-RAS hydraulic model and incorporated new bathymetric survey data to account for sedimentation that has occurred in the Neosho River channel upstream of the reservoir.[31]

27. The 2016 Tetra Tech Study confirmed that during the three modeled storm events, the maximum incremental increase in water surface elevation at Miami, which occurs during the October 2009 storm, is less than 0.2 foot if the Grand Lake reservoir elevation is raised from 741 to 743 feet. However, even though the incremental increase would be the same, the 2016 Tetra Tech Study indicates that the water surface elevations at Miami during the modeled historic flood events are higher than determined in the 2015 Staff Analysis – for both the 741 and 743 feet Grand Lake reservoir elevations.[32]

C. Responses to the 2016 Tetra Tech Study

28. On June 30, 2016, GRDA filed a response, prepared by its consultant Mead & Hunt, to Commission staff's May 18, 2016 request for additional information, which included a review of the 2016 Tetra Tech Study and an evaluation of the effects to property, structures, and human life as a result of the higher water surface elevations indicated in the 2016 Tetra Tech Study. Mead & Hunt stated that the differences in water surface elevations at Miami determined in the 2015 Staff Analysis and the 2016 Tetra Tech Study are primarily due to a difference in selected model input parameters and the new bathymetric survey data. Mead & Hunt concluded that the 2016 Tetra Tech Study contained various hydraulic modeling deficiencies, and recommended that further investigation be completed before relying on the higher water surface elevations determined in the study.

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[31] HEC-RAS refers to the Corps' Hydrologic Engineering Center's River Analysis System, a software package that allows the performance of one-dimensional and two-dimensional steady and unsteady flow, sediment transport, and water quality analysis. Bathymetric survey data reflects the shape of underwater terrain, such as that in a river channel.

[32] Specifically, the water surface elevations at Miami for the October 1986, September 1993, and October 2009 storm events, as determined in the 2016 Tetra Tech Study, are approximately 2.4 feet, 2.5 feet, and 0.1 foot higher, respectively, than the water surface elevations determined in the 2015 Staff Analysis.

29. In order to determine the effects to property and structures that could result from the higher water surface elevations indicated in the 2016 Tetra Tech Study, Commission staff also requested that GRDA evaluate the impact to structures that would occur with and without the proposed rule curve change for the three historic storm events (October 1986, September 1993, and October 2009) modeled in the 2016 Tetra Tech Study and 2015 Staff Analysis. Even though Mead & Hunt recommended further investigation before relying on the 2016 Tetra Tech Study results, it prepared inundation mapping for the three historic storm events based on the elevations in the 2016 Tetra Tech Study. The results of the inundation mapping, which used the 2016 Tetra Tech Study water surface elevations, show no additional structures would be impacted by the proposed rule curve change.[33]

30. To quantify the increased physical danger to residents due to the incremental increase in inundation, Mead & Hunt conducted a hazard analysis for the three historic storm events using the ACER 11 procedure. The analysis indicates that there would be no increased danger under October 1986 and October 2009 storm conditions. Under September 1993 storm conditions, two structures, a commercial building and a recreational building, may experience an increase in danger. For the commercial building, the ACER 11 danger zone would change from the low danger zone to the judgment zone;[34] however, the hazard increase is due to a slight increase in flood depth of 0.1 foot. For the recreational building, the ACER 11 danger zone would change from the judgment zone to high danger zone; however, the hazard increase is due to a slight increase in flood depth of 0.1 foot. Therefore, despite the change in danger zone classification for these two structures, the actual change in hazard is insignificant and there would be no increased risk to human life.

31. The City of Miami filed comments on July 22, 2016, which included a new study performed by Tetra Tech, dated April 26, 2016, that evaluated the effects of the proposed rule curve change on structure inundation (2016 Tetra Tech Inundation Study).[35] Tetra Tech developed flood inundation mapping using water surface elevation results from both the 2015 Staff Analysis and the 2016 Tetra Tech Study.

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[33] According to Mead & Hunt's inundation mapping, for starting reservoir elevations of both 741 and 743 feet, the number of structures impacted under the October 1986, September 1993, and October 2009 storm conditions is 394, 201, and 22, respectively.

[34] The ACER 11 graph includes three hazard zones: a low danger zone, a judgment zone, and a high danger zone.

[35] *Neosho River Flooding in the Vicinity of Miami, Oklahoma* (2016 Tetra Tech Inundation Study), Docket No. P-1494-433 (filed July 22, 2016).

32. The 2016 Tetra Tech Inundation Study concluded that the 2015 Staff Analysis underestimated the number of structures inundated, due to the staff's lower computed water surface elevations.[36] However, similar to Mead & Hunt's results, no additional structures would be impacted by the proposed rule curve change.

D. Conclusions Regarding Studies

33. Under GRDA's proposed rule curve change, the maximum incremental flooding increase of less than 0.2 foot at Miami determined in the 2016 Tetra Tech Study is similar to other studies that considered this issue, including: (1) the 2015 Staff Analysis [0.2 foot]; (2) the 2014 Dennis Study [less than 0.2 foot]; and (3) the 2004 Holly Study [approximately 0.2 to 0.1 foot]. In addition, there would be little increase in the probability of human risk. As stated in the August 14, 2015 order, there is also little increase in the probability of human risk downstream of the dam.[37]

34. The City of Miami's July 22 comments argue that the 2015 Staff Analysis underestimates the number of structures impacted during the historic storm events. This argument, even if correct, has no weight because although both the 2016 Tetra Tech Inundation Study and the inundation mapping conducted by Mead & Hunt show a greater number of structures impacted, both studies also determined no additional structures would be impacted by increased flooding due to the proposed rule curve change. Further, as discussed above, the Mead & Hunt hazard analysis using the 2016 Tetra Tech Study found no additional risk to human life.

V. Environmental Analysis

35. In this section, we summarize information on the existing environmental resources in the project area and present our analysis of effects of approving a temporary variance to the rule curve. We also address relevant comments received from resource agencies, Indian tribes, and other stakeholders.[38] Because the elevations, duration, and timing of

[36] Using the flood elevations in the 2015 Staff Analysis, the number of structures impacted under the October 1986, September 1993, and October 2009 storm conditions is 108, 41, and 4, respectively; whereas using the 2016 Tetra Tech Study, the number of structures impacted under the October 1986, September 1993, and October 2009 storm conditions is 234, 99, and 7, respectively.

[37] *Grand River Dam Authority*, 152 FERC ¶ 61,129 at P 32.

[38] Unless cited otherwise, the information on existing environmental resources in this section comes primarily from the August 14, 2015 order, the environmental report contained in GRDA's May 6, 2016 application, and additional information GRDA filed June 2, 2016.

the proposed temporary variance are the same as GRDA's temporary variance evaluated in our August 14, 2015 order, we expect similar environmental effects. Specifically, we find that there is no change from the environmental analysis conducted last year concerning the following resources: Water Quantity[39] and Terrestrial, Wetland, and Wildlife Resources.[40] Therefore, we incorporate our environmental review from last year and discuss any new information or differences in expected effects in 2016.[41]

36. Because this year's temporary variance is expected to have the same effects to electric generation as evaluated in our August 14, 2015 order, we also incorporate that analysis and do not include any further discussion of generation effects in this order.[42]

A. Water Quality

37. As discussed in staff's analysis for GRDA's temporary variance issued last year, operation under the proposed rule curve would not have any significant effects on water quality in Grand Lake and may provide some benefits to water quality by reducing the magnitude of water level changes that may cause shoreline erosion and by reducing the exposure of some shallow water areas.[43] Downstream water quality would not be negatively affected and holding more water in Grand Lake would help ensure that water is available to maintain downstream DO concentrations in late summer and early fall to avoid fish kills.[44] Last, if a severe to exceptional drought were to occur during the

[39] *Grand River Dam Authority*, 152 FERC ¶ 61,129 at PP 38-39.

[40] *Id.* PP 49-52.

[41] *Id.* PP 37-65

[42] Specifically, the August 14, 2015 order found that the temporary variance would result in a total loss of approximately 123 MWh and would have a total cost of about $190,000. *Id.* PP 66-69.

[43] Any reduction in erosion rates would reduce turbidity in near-shore areas and could reduce exposure and resuspension of pollutants, such as heavy metals, in sediment. *Id.* PP 40-41.

[44] Downstream releases are managed to maintain Oklahoma water quality criteria for DO in the tailrace pursuant to plans approve under license Article 403. *Grand River Dam Authority*, 151 FERC ¶ 62,098 (2015). Before institution of the program now used to manage releases to maintain downstream DO, low DO concentrations in the Pensacola tailrace resulted in several documented fish kills. *Grand River Dam Authority*, 152 FERC ¶ 61,129 at P 42.

variance period, approval of the licensee's Drought Adaptive Management Plan should provide further benefits because more water would be available for DO maintenance.

38. On June 30, 2016, the Oklahoma Department of Environmental Quality (Oklahoma DEQ) issued a water quality certification under section 401 of the Clean Water Act for GRDA's request to permanently amend its Article 401 rule curve elevations.[45] The water quality certification will be considered in any action the Commission takes on the permanent amendment request. However, specific to the temporary variance this year, we will require GRDA to provide a copy of its 2016 Article 403 DO mitigation report to Oklahoma DEQ at the same time that it is provided to the agencies already specified under its DO mitigation plan, and include evidence that it has provided the report to Oklahoma DEQ in its final report filed with the Commission. We will also require that GRDA notify Oklahoma DEQ, at the same time it notifies the other agencies pursuant to the plan, of any significant DO deficiencies or mitigation actions, as defined in the approved mitigation plan, so that Oklahoma DEQ can track GRDA's progress in maintaining state water quality standards.

B. Fisheries and Aquatic Resources

1. Grand Lake

39. Grand Lake supports a robust warm water fishery, with populations of largemouth and smallmouth bass, white bass, striped bass and hybrid striped bass, crappie, sunfish, catfish, paddlefish, and a number of species of suckers, minnows, and darters. Grand Lake is one of the top bass fishing destinations in the nation, consistently attracting national fishing tournaments. Largemouth bass, and many of the other sport fishes present, spawn in springtime in relatively shallow waters, and their young use shallow water areas with submerged and emergent aquatic vegetation or other structure as primary habitat through the summer and fall. Gizzard and threadfin shad are important forage species that sustain the sport fishery in Grand Lake. The water elevation regime under the current rule curve adequately supports these seasonally-important fish habitats at Grand Lake.

[45] Oklahoma DEQ granted the Water Quality Certification subject to four conditions: (1) the certification does not authorize any discharge or dredging; (2) the reservoir will be maintained between elevations 742 and 744 feet PD; (3) emergency and routine maintenance will be as permitted by the Corps; and (4) results of ongoing testing of DO mitigation measures under the project license shall be submitted annually to Oklahoma DEQ.

40. Maintaining a higher water surface elevation in Grand Lake between August 15 and October 31 would result in less fluctuation in water elevations during the late summer and early fall. This would provide young fishes with more stable shallow-water habitat, including shallows with aquatic vegetation, which are important for providing cover and feeding areas for young fishes as they mature. Therefore, recruitment of fish into the Grand Lake fishery should be enhanced by eliminating the full drawdown to 741 feet between September 1 and October 15 because aquatic vegetation that becomes established between 741 and 742 feet would be protected.

41. The rule curve variance would therefore have minor positive effects on fisheries in Grand Lake. Further, DO concentrations in Grand Lake may also benefit from a reduction of exposed, decomposing aquatic vegetation in shallow-water areas.

2. Downstream

42. The tailrace area below the Pensacola Project supports a popular fishery that includes many of the species found in Grand Lake, and this fishery depends on water releases from Pensacola Dam. Flows discharged from Pensacola dam originate in the hypolimnion[46] and are low in DO. GRDA increases DO in the tailrace through vacuum breaker bypass valves, which inject air into flows discharged through the project turbines. Project operation under the proposed variance would allow GRDA to store more water during the late summer and early fall period for releases to maintain downstream DO, which would benefit the fishery below the dam. Approval of the Drought Adaptive Management Plan would provide environmental benefits by increasing GRDA's ability to maintain downstream DO concentrations through releases from Pensacola Dam, if significant drought conditions occur during the variance.

C. Threatened and Endangered Species

43. Several federally listed species occur at the Pensacola Project. The gray bat *(Myotis grisescens*) and the Neosho mucket *(Lampsilis rafinesqueana*) are listed as endangered, while the Ozark cavefish *(Amblyopsis rosae*) and the Neosho madtom *(Noturus placidus*) are listed as threatened. As discussed in staff's analysis for GRDA's temporary variance issued last year, no effects to these four species are expected.

[46] The hypolimnion is the lower, cooler layer of a lake during summertime thermal stratification.

44. There should be no effects to gray bats that use the nearby Beaver Dam Cave because, although this cave is affected during flood conditions, gray bats generally leave the cave by mid-August.[47] Further, higher passage exits have been created in the cave that allow any remaining bats safe exit.[48] Therefore, the proposed temporary variance is not likely to adversely affect gray bats.

45. The Neosho mucket is a freshwater mussel that lives in nearshore habitat, but does not occur in inundated areas.[49] Because approval of GRDA's request for a temporary variance would not inundate any new areas during non-flood conditions and would only result in minor incremental inundation during flood conditions, approval of the temporary variance is not expected to affect the Neosho mucket.

46. With respect to Ozark cavefish, there are two locations where the Ozark cavefish are found, Twin Cave and Jailhouse Cave, both of which are outside the area influenced by Grand Lake.[50] Similarly, the Neosho madtom occurs only within a 14-mile reach of the Neosho River well upstream of Grand Lake.[51] Thus, the temporary variance would not affect Ozark cavefish or Neosho madtom.

47. In its April 21, 2016 comments on GRDA's application, U.S. Fish and Wildlife Service (FWS) states that GRDA's proposal would not adversely affect any listed species. FWS further explained that the increased risk of flooding at Beaver Dam Cave is not a concern because listed bats are not using the cave at that time. Therefore, no further consultation is needed pursuant to the Endangered Species Act.

D. Cultural Resources

48. On March 15, 2016, GRDA provided the Oklahoma SHPO a draft copy of its application containing its draft Storm Adaptive Management Plan and draft Drought Adaptive Management Plan. In an April 22, 2016 letter to GRDA, the Oklahoma SHPO recommended GRDA develop a Historic Properties Management Plan (HPMP) to address potential impacts to archeological sites located along and near shorelines and

[47] The other cave used by gray bats, Twin Cave, is located more than a mile from Grand Lake at elevation 840 feet, well above the elevation affected by Grand Lake.

[48] *Grand River Dam Authority*, 152 FERC ¶ 61,129 at P 56.

[49] *Id*. P 57.

[50] *Id*. P 58.

[51] *Id*. P 59.

recommended GRDA add the Oklahoma SHPO to the list of consulting parties for both plans. GRDA added the Oklahoma SHPO to the consulting party lists for both plans and, rather than developing an HPMP, added provisions in each plan for consulting with the Oklahoma SHPO about potential impacts to cultural resources when the plans are in effect. On April 29, 2016, GRDA provided updated versions of both plans to the Oklahoma SHPO for review and comment.

49. In an email to GRDA dated May 2, 2016, the Oklahoma SHPO reiterated its recommendation for a project-wide HPMP saying GRDA's proposal to develop an HPMP during a storm or drought event, as described in the revised plans, would be difficult. The Oklahoma SHPO also recommended adding the Oklahoma Archeological Survey (Oklahoma AS) to the consulting party lists for both plans and recommended GRDA include a provision for addressing any unanticipated discoveries of human remains or burials in accordance with state law. GRDA incorporated these additional recommendations into its two plans but declined to prepare a project-wide HPMP saying instead that it could use the HPMP for its Markham Ferry Project as a framework to address any effects to historic properties.

50. GRDA has agreed that if Oklahoma SHPO or Oklahoma AS determines that reservoir conditions during the temporary variance period adversely affect historic properties, GRDA would develop a site-specific plan to address these agencies' concerns. This provision for a site-specific plan, along with the consultation and unanticipated discovery provisions added to the Storm and Drought Adaptive Management Plans, provide adequate protection. GRDA need not develop a project-wide HPMP for a 2.5-month temporary variance.

51. The Modoc Tribe and the Tribal Council assert GRDA is already causing unauthorized flooding of Tribal trust lands and any temporary variance would only make matters worse. The Tribal Council and the City of Miami argue that the unauthorized flooding of Tribal trust lands requires an amendment to the project license and consideration under sections 4(e), 10(a), and 10(e) of the Federal Power Act. These comments are addressed in the Discussion Section below.

52. Commission staff met with the Tribal Council on August 3, 2016, in Miami Oklahoma to hear the Council's concerns and gather any additional information the Council or its member tribes wish to present for Commission consideration. In summary, the Tribal Council reiterated its concerns that the project already floods Tribal trust lands and other areas in the Miami region. The Tribal Council provided more detailed information concerning the whereabouts of individual tribal lands and facilities affected by flooding in the past, their desire to be compensated for the flooding, and their concerns about the project in general. Commission staff's August 3rd meeting with the Tribal Council and its member tribes was transcribed and transcripts will be filed with the Commission Secretary.

53. Finally, the Tribal Council argues that consultation under section 106 of the National Historic Preservation Act is not complete because GRDA has not engaged the tribes in any consultation, only providing the tribes with a draft of the amendment application for review, and GRDA has not agreed to complete a project-wide HPMP as recommended by the Oklahoma SHPO.

54. GRDA's proposed temporary variance would not cause Grand Lake to exceed its normal maximum (or minimum) water surface elevations under the rule curve specified by Article 401. Water levels would remain within existing fluctuation limits within the rule curve. Thus, no new lands would be affected under normal operating conditions. If anything, the proposed change would temporarily reduce fluctuating water levels during the variance period, which could help protect environmental and cultural resources. Therefore, we find that the proposed temporary variance would have no effect on historical properties, and section 106 consultation is not required.

E. Recreation Resources

55. Grand Lake is a major recreation resource in northeastern Oklahoma, providing over a million recreation user days during 2014. Boating, fishing, and waterfowl hunting are popular recreation activities conducted on the lake. Recreational access to Grand Lake is provided through public, commercial, and private facilities such as boat ramps, marinas, and boat docks. Grand Lake has 22 public boat ramps, 439 private boat ramps, and 53 commercial boat ramps, and has a total of 11,782 boat slips (4,021 are available at commercial marinas whereas 7,761 are located at private residential boat docks).

56. Boating on Grand Lake occurs year-round, although the primary recreation season extends from April 1 until October 1. Fishing is a year-round activity on Grand Lake and an average of 117 fishing tournaments were held on the lake each year between 2011 and 2015. Waterfowl hunting occurs from September through January primarily in the riverine (i.e., uppermost) sections of the lake. Hazards that lead to boats running aground exist more often at lower lake levels. According to information filed by GRDA, nearly 80 percent of all boat groundings during the high recreation season (May 1 until September 30) in 2013-2014 occurred while the lake was being drawn down pursuant to the rule curve or maintained at elevation 741 feet. In contrast, GRDA reports that, despite more boats using the lake in 2015 than in 2014,[52] substantially fewer boats ran

[52] GRDA's aerial boat counts on Labor Day weekend counted nearly 2,000 boats during Labor Day weekend 2015 compared with fewer than 500 boats during Labor Day weekend 2014.

aground during the August 16 to October 31, 2015 timeframe during last year's temporary variance compared to the same timeframe in 2013 and 2014.[53]

57. Operation under the proposed rule curve would allow GRDA to maintain higher reservoir elevations from August 15 to October 31. These higher reservoir elevations would increase the amount of area available for boating in the reservoir,[54] and would likely provide easier public and private access to numerous boat ramps and docks located at the project.[55] Because more boatable acres and improved recreational access would occur during the recreational season, operation under the proposed rule curve would result in recreation benefits. Higher reservoir elevations would also likely decrease boating hazards in Grand Lake. Based on GRDA's data, the vast majority of boat groundings in 2013 and 2014 occurred during the tail end of the high recreation season when recreational boating use was still high but Grand Lake was lowered to 741 feet. Such a pattern did not occur in 2015 when Grand Lake was held to 742 feet or above. Thus, we expect the proposed rule curve to contribute to a decrease in boat groundings at the project.

VI. Discussion

58. The City of Miami, Mr. Bork, the Modoc Tribe, and the Tribal Council all assert that the operation of the Pensacola Project under the current Article 401 rule curve results in flooding and significant adverse effects to the Miami region. These parties argue that the Commission should not evaluate the proposed temporary variance based solely on its incremental effects, but should also look at how the project usually affects upstream properties. The parties contend that GRDA's proposed temporary variance would make existing flooding worse and should therefore, be denied. Each party says the upcoming

[53] In 2013 and 2014 combined, 75 percent (i.e., 24 of 32 reported incidents) of all reported boat groundings throughout the year occurred during the August 16 to October 31 timeframe. In 2015, 29 percent (i.e., 2 of 7 reported incidents) of all reported boat groundings throughout the year occurred during the August 16 to October 31 timeframe.

[54] In its December 23, 1985 license application for the Pensacola Project, GRDA estimated that each additional foot of water surface elevation would result in an additional 1,000 acres of surface area.

[55] In its May 6, 2016 application, GRDA reported that at 741 feet, hundreds of private docks are unusable (i.e., the lake-side of the dock is entirely on dry land) and the usefulness of an additional unquantified number of docks would be adversely affected at elevation 741 feet (i.e., although not completely dry, low water may preclude boat launching or retrieving).

relicensing proceeding is the proper forum to address any changes to the project's rule curve.

59. Last year, the Commission evaluated GRDA's request for a temporary variance by examining the incremental effects the variance would have on flooding, recreation, power generation, and environmental resources.[56] Similarly, in this proceeding, the parties have submitted information regarding the proposed variance's effects. As discussed above, four studies[57] have shown that GRDA's proposed temporary variance would result in negligible incremental upstream flooding (about 0.2 foot higher) if approved by the Commission.[58] Further, the incremental increase in upstream flooding would not affect any additional structures nor would it cause any increased risk to human life.[59] Given these findings, and the substantial agreement among the studies, we believe the temporary variance can be approved without resulting in additional significant flooding.[60]

60. Moreover, the proposed temporary variance would have some benefits including improved boating conditions on Grand Lake, fewer boat groundings during the late summer, an extended recreation season resulting in more economic activity in local communities, and improved DO conditions downstream of the project should a drought occur. Further, as discussed above, there would be no significant environmental impacts associated with the proposed variance and relatively little electric generation lost.

61. GRDA proposes to ameliorate any risk of upstream and downstream flooding during the temporary variance period by implementing its proposed Storm Adaptive Management Plan. This plan could help if GRDA is able to forecast and implement pre-releases effectively (i.e. releasing water in Grand Lake to lower the reservoir prior to a storm). However, uncertainties in forecasting and storm dynamics do not always permit pre-releases.[61] Notwithstanding these concerns, the Storm Adaptive Management Plan

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[56] *Grand River Dam Authority*, 152 FERC ¶ 61,129.

[57] The 2004 Holly Study at 4, the 2014 Dennis Study at 133, the 2015 Staff Analysis at 7, and the 2016 Tetra Tech Study at viii.

[58] Also, up to 0.7 foot higher downstream of the project at the Langley gage.

[59] The 2015 Staff Analysis at 7, the 2016 Mead & Hunt inundation mapping at 5, and the 2016 Tetra Tech Inundation Study at 2.

[60] *See supra* P 30.

[61] For example, a pre-release may not be advisable if such a release would spill water into an already flooded section of the Neosho River downstream.

would help GRDA coordinate with federal, state, local, and tribal governments during a storm event while the temporary variance is in effect. Therefore, we will require GRDA to implement this plan.

62. Also noted above is GRDA's proposed Drought Adaptive Management Plan. This plan would help GRDA maintain downstream DO requirements and downstream reservoir elevations at the Markham Ferry Project sufficient to operate its Salina Pumped Storage Project[62] and meet other water supply needs.[63] Therefore, we will require GRDA to implement this plan as well.

63. The Tribal Council and the City of Miami argue that the unauthorized flooding of Tribal trust land requires the Commission to investigate whether GRDA has the proper authority to use and occupy Tribal trust lands. The Tribal Council and the City of Miami contend that GRDA's use and occupancy of Tribal trust lands require an amendment to GRDA's license, where the Commission must address substantive issues arising under sections 4(e), 10(a), and 10(e) of the Federal Power Act. The Tribal Council and the City of Miami note that these issues include whether it would be in the public interest to authorize the use and occupancy of federal trust lands, the development of mandatory Bureau of Indian Affairs conditions, and the annual charge that GRDA would be required to pay for the use of Tribal trust lands. The Tribal Council and the City of Miami aver that the Commission should reject GRDA's request for a temporary variance until these issues are addressed.

64. The Tribal Council also argues that the Commission's trust responsibility to the tribes requires the Commission to deny GRDA's proposal because it would increase unauthorized flooding of Tribal trust lands. The Tribal Council asserts that meaningful consultation with the tribes and resolution of the issues presented in its protest must occur prior to the Commission's approval of GRDA's proposed temporary variance. The Tribal Council further contends that the Commission has a responsibility to investigate the current unauthorized flooding of tribal lands and require GRDA to amend its license for the use and occupancy of these lands.

[62] The Salina Pumped Storage Project is used to maintain regional energy reliability.

[63] Local municipalities withdraw water from both Grand Lake and Markham Ferry's Lake Hudson.

65. As stated above, GRDA does not propose to alter the project boundary or exceed its maximum water surface elevation target under the Article 401 rule curve.[64] Thus, because no new lands would be affected by the proposed temporary variance, the arguments regarding unauthorized flooding are not germane here, and are more appropriately addressed in other related proceedings. We also note that Commission staff has required GRDA to revise its project boundary to address discrepancies in its Exhibit G drawings. On March 6, 2014, GRDA filed its first set of corrections to its Exhibit G drawings. Those corrections were approved by Commission staff on November 13, 2014. With respect to the remaining corrections, Commission staff granted GRDA an extension of time that allows GRDA to file the remaining corrections to its Exhibit G drawings with its draft relicense application on November 1, 2019. In the event that GRDA's filings do not dispose of the property issues raised by the Tribal Council and the City of Miami, Commission staff will take further steps to resolve the matter.[65]

VII. Conclusion

66. We have considered GRDA's application for a temporary variance, flood analysis studies, comments received, environmental analysis, and generation analysis, and we find that the proposed temporary variance would have some benefits and should not significantly affect flooding upstream or downstream of the project. Therefore, we do not believe that deferring action on the proposed temporary variance until relicensing is warranted and approve GRDA's temporary variance subject to the conditions described in this order.

67. Last, we note that our approval of GRDA's request for temporary variance in no way requires GRDA to deviate from the rule curve in Article 401. Rather, we simply approve GRDA's request to deviate from the rule curve, which it does at its own risk. Regardless of this temporary variance, section 10(c) of the FPA provides that GRDA is

[64] The maximum water surface elevation target of 744 feet PD occurs from June 1 through July 31 each year.

[65] On August 3, 2016, Commission staff attended a meeting with the Tribal Council and individual tribes. At the meeting, tribal representatives provided a map and other information regarding tribal lands in close proximity to the project and stated that they would be filing information regarding land ownership and the status of tribal lands as part of a federal reservation. While, as noted above, arguments regarding unauthorized flooding are not germane to this temporary variance proceeding, we will consider this new information in any future proceedings in which it is relevant, including the relicensing proceeding.

liable for damages caused by its operation of the Pensacola Project.[66] Accordingly, should GRDA flood lands on which it has no flowage rights, it may be liable for any damages that result.

The Commission orders:

(A) Grand River Dam Authority's (licensee) May 6, 2016 request for a temporary variance from the rule curve requirements of Article 401 at the Pensacola Project is approved. The temporary variance expires October 31, 2016.

(B) *Storm Adaptive Management Plan*: The licensee's proposed Storm Adaptive Management Plan is approved for the duration of the temporary variance.

(C) *Drought Adaptive Management Plan*: The licensee's proposed Drought Adaptive Management Plan is approved for the duration of the temporary variance.

(D) The Commission reserves the right to modify the Storm Adaptive Management Plan or the Drought Adaptive Management Plan based upon information provided by the licensee, any federal, state, local, or tribal government, other entity, or upon its own determination.

(E) The licensee shall provide a copy of its annual 2016 dissolved oxygen (DO) mitigation report to the Oklahoma Department of Environmental Quality (Oklahoma DEQ) at the same time that it provides that report to agencies pursuant to the approved Article 403 DO mitigation plan. When the licensee files its final DO mitigation report with the Commission, by April 1, 2017, it shall include evidence that has provided the report to Oklahoma DEQ. In addition, the licensee shall notify Oklahoma DEQ, at the same time it notifies the other agencies pursuant to the approved plan, of any significant DO deficiencies or mitigation actions, as defined in the approved mitigation plan.

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[66] *See* 16 U.S.C. § 803(c) (2012) ("Each licensee hereunder shall be liable for all damages occasioned to the property of others by the construction, maintenance, or operation of the project works or of the works appurtenant or accessory thereto, constructed under the license, and in no event shall the United States be liable therefore."); *also, e.g.*, *Pacific Gas & Electric Company*, 115 FERC ¶ 61,320, at P 21 (2006) (observing that while Congress intended for the Commission to ensure that hydroelectric projects were operated and maintained in a safe manner, Congress intended for section 10(c) of the FPA to preserve existing state laws governing the damage liability of licensees) (citing *South Carolina Public Service Authority v. FERC*, 850 F.2d 788, 795 (D.C. Cir. 1988)).

(F) 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 Federal Power Act, 16 U.S.C. § 825*l* (2012), and the Commission's regulations at 18 C.F.R. § 385.713 (2015). 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.

By the Commission.

(S E A L)

Nathaniel J. Davis, Sr.,
Deputy Secretary.