

*Via Electronic Filing*

December 28, 2017

Honorable Kimberly D. Bose, Secretary  
 Federal Energy Regulatory Commission  
 888 First Street, N.E.  
 Washington, D.C. 20426

**Bear Swamp Project (FERC Project No. 2669)**  
**Response to Comments on the October 2017 Study Report Meeting Summary,**  
**Technical Study Reports, Requests for Modifications of Approved Studies, and**  
**Requests for New Studies**

Dear Secretary Bose:

Bear Swamp Power Company LLC (BSPC) is the licensee for the 610-megawatt Bear Swamp Project (Project) (FERC No. 2669). BSPC is pursuing a new license for the Project using the Federal Energy Regulatory Commission’s (FERC or Commission) Integrated Licensing Process (ILP) as defined in 18 Code of Federal Regulations (C.F.R.) Part 5. In accordance with 18 C.F.R. §§ 5.15(c)(5) and 5.15(f), BSPC is hereby filing this response to stakeholder comments on the October 26, 2017 Study Report Meeting Summary, requests for modification of approved studies, and requests for new studies. This filing is made pursuant to the Revised Process Plan and Schedule promulgated by the Commission on September 7, 2017.

Three entities filed comments on the October 2017 Study Report Meeting Summary, the technical study reports, and/or filed requests for new or modified studies as shown in Table 1.

**TABLE 1**  
**ENTITIES FILING COMMENTS ON THE OCTOBER 2017 STUDY REPORT**  
**MEETING SUMMARY, THE TECHNICAL STUDY REPORTS, AND/OR FILING**  
**REQUESTS FOR NEW OR MODIFIED STUDIES\***

Filing Entity	Filing Date
American Whitewater, Appalachian Mountain Club, New England FLOW, Zoar Outdoor, Crab Apple Whitewater, and Berkshire Whitewater (collectively, the “Whitewater Interest Group”)	November 27, 2017
Connecticut River Conservancy (CRC)	November 29, 2017
Massachusetts Division of Fisheries & Wildlife (MADFW)	December 7, 2017 <sup>†</sup>

\*Although comments submitted may be pertinent to the Project, not all comments submitted are material to the October 2017 Study Report Meeting Summary, the technical study reports, or to requests for new or modified studies; therefore responses to all comments may not be included herein.

<sup>†</sup>The MADFW’s comments were received eight days after the Commission’s November 29, 2017 deadline for filing requests to amend the approved study plan.

BSPC has reviewed the correspondence from the CRC and Whitewater Interest Group which was received by the November 29, 2017 deadline for filing disagreements with the Study Report Meeting Summary and/or requests to amend the approved study plan. In addition, BSPC has reviewed the MADFW's letter dated December 7, 2017. BSPC's response provided herein focuses on stakeholders' requested amendments to the approved study plan. BSPC recognizes that stakeholders have provided additional comments on technical study reports that do not include requests for study modifications or additional studies. While BSPC is not specifically addressing those additional comments here, BSPC reserves the right to do so in the future.

## **Background**

BSPC has conducted 19 studies as required in the Commission's October 30, 2015 Study Plan Determination (SPD) for the Project:

1. Water Quality Study
2. Fish Assemblage Assessment Study
3. Mesohabitat Assessment and Mapping Study
4. Baseline Study of Terrestrial Wildlife and Botanical Resources
5. Wetland, Riparian, and Littoral Habitat Study
6. Recreation Survey Study Report
7. State-listed Rare Plants Baseline Data Collection Study
8. Cultural Resources Survey
9. Operations Model Study Report
10. Instream Flow Assessment
11. Fife Brook Flow Attenuation Study
12. Fish Entrainment Evaluation Study Report
13. State-listed Odonates Survey
14. Baseline Study of Freshwater Mussel Species
15. Northern Long-eared Bat Acoustic Survey
16. Fife Brook Impoundment Access and Portage Feasibility Study
17. Angler Wading Study
18. Warning System Effectiveness Study
19. Whitewater Boating Flow Study

In accordance with the Process Plan and Schedule, BSPC filed an Initial Study Report (ISR) with the Commission on October 31, 2016. BSPC held an ISR Meeting on November 14 and 15, 2016 to discuss the overall progress in implementing the study plan, data collected to date, variances from the SPD, and the results of the studies filed with the Commission as appendices to the ISR. Pursuant to the ILP, BSPC filed an ISR Meeting Summary with the Commission on November 28, 2016. Stakeholders were afforded a 30-day period to provide comments on the ISR Meeting Summary, recommend study modifications, or propose new studies. The Commission issued a Determination on Requests for Study Modification and New Studies for the Project (Study Determination) on February 27, 2017.

In response to a November 10, 2016 letter from the Commission, BSPC submitted a schedule on November 18, 2016 for filing individual study reports that were not included in the October 2016 ISR. The schedule for filing the individual study reports that were not included in the ISR was approved in FERC's January 10, 2017 Revised Process Plan and Schedule.

BSPC filed 10 technical study reports with the Commission on March 31, 2017 in accordance with the January 10, 2017 Revised Process Plan and Schedule (studies 1, 2, 4, 5, 7, 10, 13, 16, 18, and 19). An additional report, the Cultural Resources Study Report (study 8), was filed with the Commission on April 7, 2017. BSPC held a Study Report Meeting to discuss the results of those studies on April 11 and 12, 2017. Pursuant to the ILP, BSPC filed an April 2017 Study Report Meeting Summary with the Commission on April 27, 2017. Stakeholders were afforded a 30-day period to provide comments on the April 2017 Study Report Meeting Summary, recommend study modifications, or propose new studies. Based on discussions during the April 2017 Study Report Meeting and comments filed by stakeholders, BSPC filed a supplement to the Instream Flow Assessment Study Report (study 10) on July 29, 2017. The Commission issued a Study Determination on July 28, 2017<sup>1</sup>.

In the Study Determination letter, Commission staff adopted certain requested modifications to the Water Quality Study (study 1), State-listed Odonates Survey (study 13), and the Whitewater Boating Flow Study (study 19), and required BSPC to file addendums to these studies by November 30, 2017.

On August 28, 2017, BSPC filed a letter requesting that the Commission modify the Project's process plan and schedule to align the filing of the Updated Study Report (USR) and the study reports for studies 6, 9, and 12. Specifically, BSPC requested that the Commission revise the process plan and schedule to allow BSPC to file the USR on September 30, 2017, instead of October 30, 2017. BSPC requested this modification to allow the meetings and any dispute resolution processes for the USR and for the study reports on studies 6, 9, and 12 to run concurrently. BSPC also stated that it would present information on the USR, studies 6, 9, and 12, and the supplemental analysis for study 10 at the Study Report Meeting to be held in October 2017. Additionally, BSPC agreed to file the addendum information required by the Commission's July 28, 2017 Study Determination on or before September 30, 2017, in order to facilitate discussion during the October 2017 Study Report Meeting and the Commission's review of any modification requests. The Commission approved BSPC's request and issued a revised process plan and schedule on September 7, 2017.

On October 2, 2017, BSPC filed the USR pursuant to the Commission's regulations at 18 C.F.R. § 5.15(f). The study reports for studies 6, 9, and 12 and the addendum information required by the Commission's July 28, 2017 Study Determination were filed as appendices to the USR.

Pursuant to 18 C.F.R. §§ 5.15(c)(2) and 5.15(f), BSPC held a Study Report Meeting in North Adams, Massachusetts on October 11, 2017 to discuss the overall progress in implementing the study plan, data collected to date, variances from the SPD, the studies and addendum information

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<sup>1</sup> Commission staff delayed a decision on the Instream Flow Assessment Study until January 28, 2018, to provide additional time to evaluate a supplemental analysis filed by BSPC on June 29, 2017.

filed with the Commission as appendices to the USR, and the Instream Flow Assessment Study Report Supplemental Data Analysis (study 10). Pursuant to the revised process plan and schedule, BSPC filed an October 2017 Study Report Meeting Summary with the Commission on October 26, 2017. Stakeholders were afforded a 30-day period to provide comments on the October 2017 Study Report Meeting Summary, recommend study modifications, or propose new studies. BSPC did not propose any modifications to ongoing studies or new studies in the October 2017 Study Report Meeting Summary.

The Commission's regulations at 18 C.F.R. §§ 5.15(c)(4) and 5.15(f) provide that any participant or the Commission's staff may file a disagreement concerning the October 2017 Study Report Meeting Summary within 30 days, setting forth the basis for disagreement. Any such filing must also include any requested modifications to ongoing studies or proposed new studies.

Pursuant to 18 C.F.R. §§ 5.15(c)(5) and 5.15(f), BSPC is filing this response to comments on the October 2017 Study Report Meeting Summary, requests for modification of approved studies, and requests for new studies. As provided in 18 C.F.R. §§ 5.15(c)(6) and 5.15(f), the Commission's Director of the Office of Energy Projects (Director) will resolve any disagreements and amend the approved study plan (as appropriate) within 30 days of the date of this filing (i.e., on or before January 28, 2018).

In accordance with 18 C.F.R. § 5.15(d) of the Commission's regulations, any request to modify an ongoing study must be accompanied by a showing of good cause why the request should be approved and must include a demonstration that: (1) the approved studies were not conducted as provided for in the approved study plan; or (2) the study was conducted under anomalous environmental conditions or that environmental conditions have changed in a material way. Additionally, as further specified in 18 C.F.R. § 5.15(e), any new study requests must also show good cause and a statement explaining: (1) any material changes in the law or regulations applicable to the information request, (2) why the goals and objectives of any approved study could not be met with the approved study methodology; (3) why the request was not made earlier; (4) significant changes in the project proposal or that significant new information material to the study objectives has become available; and (5) why the new study request satisfies the criteria under 18 C.F.R. § 5.9(b).

### **Requests for New Studies**

None of the parties filed requests for new studies.

### **Requests to Modify Studies**

The CRC requested modifications to the Recreation Survey and the Fish Entrainment Evaluation. The CRC, MADFW, and Whitewater Interest Group requested modifications to the Operations Model. BSPC addresses these requests collectively by study in the following sections.

### *Recreation Survey*

The CRC stated in its comments that the “Recreation Survey Study was conducted in a manner consistent with the Revised Study Plan (RSP) dated September 30, 2015 and FERC’s Study Plan Determination dated October 30, 2015.” Despite concurring that the Recreation Survey was consistent with the RSP and the Commission’s SPD, the CRC requests that BSPC conduct additional Industry and Law Enforcement Interviews to supplement information that was presented in the Recreation Survey Study Report. Specifically, the CRC requests that the study plan be amended to require BSPC to conduct phone interviews with the Massachusetts Environmental Police (Environmental Police) and the Charlemont Police Department and to file a summary of these interviews with the Commission as an addendum to the Recreation Survey Study Report.

As the CRC noted in its November 29, 2017 comments, BSPC repeatedly contacted the Environmental Police to arrange for an interview. An interview was scheduled with a senior Environmental Police Officer (EPO) for September 5, 2017. During the initial discussion on September 5, 2017, the senior EPO indicated that he would prefer to get input on the interview questions from other Environmental Police staff which were currently out of the office on vacation. Accordingly, BSPC provided the senior EPO with a copy of the interview questions so that he could review the questions with other staff and respond via email. BSPC did not receive any further response from the Environmental Police.

The CRC stated in its November 29, 2017 comment letter that “there was also no attempt to contact the Town of Charlemont Police Department.” This statement is incorrect. BSPC notes that the Charlemont Police Department was contacted for the Industry and Law Enforcement Interviews (see Table 4-1 in the Recreation Survey Study Report). An email address for the Charlemont Police Department was not available, and BSPC contacted the department directly by phone. Calls to the Charlemont Police Department non-emergency number were forwarded to a voice messaging system. After several calls to the department went unanswered, BSPC left a message requesting to schedule a time to discuss the interview. BSPC did not receive a response from the Charlemont Police Department.

BSPC affirms that the Recreation Survey was conducted consistent with the Commission’s SPD. While BSPC conducted appropriate outreach to the Environmental Police and Charlemont Police Department, BSPC cannot compel law enforcement agencies or others to participate in interviews. BSPC believes that the Recreation Survey Study Report fully addresses the requirements of the approved study plan and that the modifications to the Recreation Survey requested by CRC are unwarranted. For these reasons, BSPC urges the Commission not to adopt the requested modifications to the Recreation Survey.

### *Fish Entrainment Analysis*

In its comments on the Fish Entrainment Evaluation, the CRC noted that the study report “only considers one unit operating at a time for entrainment at Bear Swamp.” The CRC also stated that “[w]e believe this is a significant deviation from the study as described in the RSP, although it was not identified as a deviation in the study report,” and requested that FERC require BSPC to

“provide a model of velocity vectors when both of Bear Swamp’s units are pumping at the same time.” Further, the CRC stated that neither BSPC’s December 19, 2014 Pre-Application Document (PAD) nor the October 2, 2017 Fish Entrainment Evaluation Study Report provide information on how often both units are operating at the same time. The CRC also recommended that the figures showing flow velocities and vectors be revised to include a consistent velocity scale across all figures. Finally, the CRC requested that BSPC provide a justification for calculating flow velocities 1.6 feet in front of the Bear Swamp Pumped Storage Development’s (PSD) trashracks.

In October 2016, BSPC collected field velocity and vector data in front of the Bear Swamp PSD’s Unit 2 intake/outlet structure during pumping operations. Velocity and vector data was not collected in front of Unit 1, as the unit was undergoing a scheduled rebuild for several months in 2016. BSPC notified stakeholders during the ISR Meeting that velocity and vector data would only be collected at Unit 2. BSPC also notified stakeholders in the ISR Meeting Summary and in subsequent study progress reports. None of the stakeholders objected to this methodology, as Unit 1 and Unit 2 at the Bear Swamp PSD are essentially identical. CRC has this approach as “a significant deviation from the study as described in the RSP.” This statement is incorrect. In fact, the methodology described in the RSP and the Commission’s approved Fish Entrainment Evaluation Study Plan directed BSPC to “confirm pumping velocities (as presented in amendment application materials) at and near the Bear Swamp PSD intake/outlet structure located within the Fife Brook impoundment (which may include certain field data collection).”<sup>2</sup> The approved study methods did not require any field data to be collected, nor did it prescribe that any data that was collected be collected at both Unit 1 and Unit 2. As such, the field verification of velocity and vector data in front of Unit 2 only does not represent a deviation from the approved study plan.

The CRC stated in comments on the Fish Entrainment Evaluation Study Report that, with both units operating, “the velocities in the rest of the river may change in nature,” and without velocity data from both units under simultaneous operation, “stakeholders are unable to determine if the study fully shows the entrainment potential at the facility.” BSPC disagrees with this comment. In the first instance, intake velocities recorded during Unit 2 pumping were all less than one foot-per-second (fps). The CRC has offered no evidence of or explanation for how the existing operations and velocities at less than 1 fps could impact the “nature” of flows elsewhere in the river. Further, there is no apparent need to collect flow velocity and vector data from both units, as the operating capabilities of both units are essentially identical. Pursuant to the approved study plan, the purpose of data verification was specifically to confirm calculated intake velocities; this was completed as detailed in the Fish Entrainment Evaluation Study Report. Additional data collection would not inform the qualitative entrainment analysis presented in the study report as the entrainment analysis was based on the calculated velocities which were confirmed in the field.

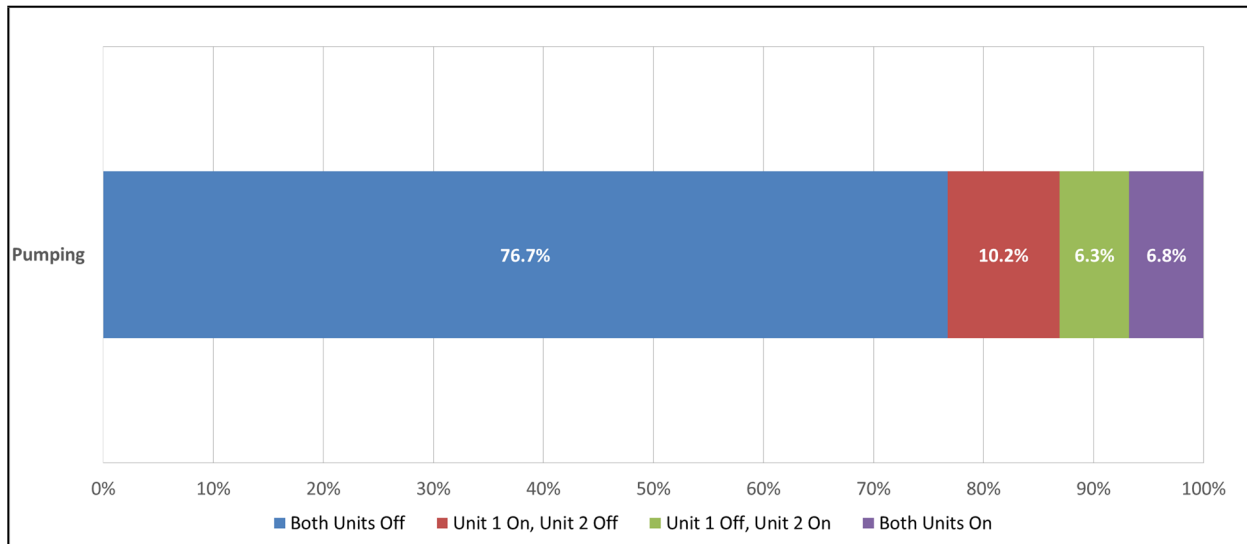
The CRC correctly noted that BSPC did not provide information in the PAD or in the Fish Entrainment Evaluation Study Report regarding how often both units at the Bear Swamp PSD are in operation. This information was not previously requested by stakeholders, nor was it a

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<sup>2</sup> See Section 15.6 of BSPC’s Revised Study Plan filed with the Commission on September 30, 2015

requirement of the approved Fish Entrainment Evaluation study plan. Further, it is not clear how such information would meaningfully inform the results of the qualitative entrainment analysis presented in the Fish Entrainment Evaluation Study Report. The qualitative entrainment analysis is based on factors such as clear-bar spacing, seasonality, fish size and length, life-stage, and intake velocities. The timing of unit operation (i.e., which unit is on or off) is not necessary for the analysis. Nonetheless, BSPC is providing summary information on historic pumping operations in Figure 1 (generation is not relevant to entrainment potential at the Bear Swamp PSD).

**FIGURE 1**  
**SUMMARY OF BEAR SWAMP UNIT 1 AND UNIT 2 PUMPING OPERATIONS FROM**  
**APRIL 2005 THROUGH OCTOBER 2016**



The CRC recommended that the figures showing flow velocities and vectors be revised to include a consistent scale across all figures. BSPC believes that the individual scales used for each figure are appropriate and can easily be interpreted. BSPC is not proposing to revise the figures.

With respect to the calculated flow velocities, the CRC requested additional information to explain why BSPC calculated velocities 1.6 feet in front of the Bear Swamp PSD trashracks. For purposes of entrainment evaluations, velocities are often (although not exclusively) calculated approximately one foot in front of the trashracks. The geometry of the Bear Swamp PSD's intakes is such that a pier supporting the trashracks extends approximately 1.6 feet beyond the face of the trashracks. Water velocities within the 1.6 feet between the face of the trashracks and the edge of the support pier would be essentially the same, as the area is constrained by the geometry of the intake structure. Calculated velocities at the face of the trashracks are presented in the Fish Entrainment Evaluation Study Report. Using the velocities within the 1.6 feet between the face of the trashracks and the edge of the pier would not be an appropriate method to evaluate entrainment, as it would be based on the assumption that all fish susceptible to entrainment would be physically present within the constrained space between 0 – 1.6 feet from the trashracks. Therefore, to assess entrainment potential and intake velocities within Lower

Reservoir proper, BSPC calculated the water velocities at a point 1.6 feet in front of the trashracks.

The Fish Entrainment Evaluation was conducted consistent with the Commission's SPD and there were no anomalous environmental conditions that would necessitate any revision to the study plan or methodology used. BSPC believes that the Fish Entrainment Evaluation Study Report fully addresses the requirements of the approved study plan and that the requested modifications to the Fish Entrainment Evaluation are unwarranted. For these reasons, BSPC urges the Commission not to adopt the requested modifications to the Fish Entrainment Evaluation.

### *Operations Model*

The CRC, Whitewater Interest Group, and MADFW requested amendments to the approved study plan to require BSPC to conduct additional model runs. During the October 2017 Study Report Meeting, BSPC agreed to review and consider a limited number (2) of additional model scenarios to be submitted by stakeholders. However, stakeholders have now requested that BSPC model different scenarios that would equate to more than 250 additional model runs when considering the combinations and iterations requested (70 model runs have been conducted to-date). BSPC addresses the requests for additional model runs below.

### **Whitewater Interest Group Model Scenarios**

The Whitewater Interest group contends that BSPC's Operations Model maintains a constant 4,600 acre-feet of storage between the Upper and Lower Reservoirs, "never dipping into that 'box' of water to meet minimum flows or recreational releases." The Whitewater Interest Group's statement is incorrect. As detailed in Section 6 of the Operations Model Study Report, the Settlement<sup>3</sup> established the Fife Brook Development 125 cfs minimum flow (guaranteed from storage), as well as the 106 whitewater releases within specific seasonal and daily timeframes. BSPC currently manages the volumetric disconnect between inflow from the Deerfield River Project's (FERC No. 2323) (DRP) Station No. 5 development and the current Fife Brook Development minimum flow and whitewater flow release requirements by retaining a certain level of additional storage in the Lower Reservoir. As described in Section 6 of the study report, BSPC carries an average total of approximately 4,750 acre-feet between the Upper and Lower reservoirs, or an average of 150 acre-feet (referred to as "safety volume" in the report) to manage the minimum flow and whitewater flow release requirements.

By carrying an average total of 4,750 acre-feet of water between the upper and lower reservoirs, the 4,600 acre-feet that resides in the Upper Reservoir cannot fully "fit" into the Lower Reservoir since the 4,600 acre-foot Lower Reservoir is already partially filled with some 150 acre-feet of water needed to manage today's minimum flow disconnect and whitewater flows. As such, BSPC already dips into the 4,600 acre-foot "box of water" (as opposed to routinely utilizing the

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<sup>3</sup> DRP Relicensing Offer of Settlement (Settlement; filed with the Commission by letter dated October 5, 1994 and authorized by FERC's 1997 Order Approving Offer of Settlement and Issuing New License for the DRP), 79 FERC ¶ 61,006, Order Approving Offer of Settlement and Issuing New License (1997).



full 4,600 acre-feet as originally licensed). The Operations Model incorporates this management of the volumetric disconnect in the model runs, and BSPC directly addressed this concept in the Operations Model Study Report.

To examine the effects of increasing the safety reserve volume (i.e., dipping even further into the “box of water”), BSPC modeled the “FERC\_Rec1000\_Min175” scenario by increasing the existing 150 acre-foot reserve to 300, 400, and 500 acre-feet. As shown in Table 6-1 in the Operation Model Study Report, the existing 150 acre-foot reserve cannot support the higher whitewater and minimum flows of the FERC\_Rec\_1000\_Min175 scenario without days when flows are not met, and neither can higher reserves (only a modicum of reduction in the number of days when flows are not met results and higher reserves do not eliminate or substantially reduce this number).

The Whitewater Interest Group requested that FERC amend the approved study plan to require BSPC to conduct an extensive suite of additional model runs that utilize an even higher reserve volume in the Lower Reservoir in an attempt to define an additional volume of storage to provide for increases to the whitewater flow releases and additional release days beyond the 106 required under the existing license. The Whitewater Interest Group also requested that BSPC provide an analysis that includes “the length of time required to replace the water” from Lower Reservoir storage utilized to provide these flows. The requested scenarios would also require that BSPC manage the Lower Reservoir to ensure that the Showtime whitewater feature is exposed during the 32 annual Monroe Section whitewater releases.

These requests by the Whitewater Interest Group ignore the limitations of the existing flow regime of the Deerfield River that was initiated by the Settlement and the fact that there is no new or additive “replacement water” coming into the Bear Swamp Project that would allow BSPC to make up a volume deficit.

The DRP’s Station No. 5 outflows since implementation of the Settlement have been established specifically to provide for the Settlement terms and conditions. That is, the totality of Station No. 5 outflows is the representation of that which is needed to meet the terms and conditions of the Settlement, and what Station No. 5 has, and continues to release, does not contemplate higher demands. This is why all model runs with Fife Brook Development outflow demands greater than existing Settlement outflow requirements result in some level of volume deficit (i.e., what additional water would be needed from upstream). Similarly, all model runs exploring levels of reserve storage higher than 150 acre-feet also result in volume deficits since having a higher level of reserve does not address the fundamental issue that total Fife Brook Development outflow demands under alternate flow regimes sought by stakeholders still exceed the historical Station No. 5 inflow hydrology that is calibrated and tuned to achieving Settlement outflow demands only.

In other words, it is not unexpected that the DRP inflow to the Bear Swamp Project cannot support Fife Brook Development outflow demands greater than the Settlement because it was never intended or designed to, and there is not excess water within the Bear Swamp Project to sustainably support higher demands. As demonstrated through 70 Operation Model runs, the Bear Swamp Project simply does not have the ability to sustainably pass more water downstream

than that which is received from upstream, and BSPC does not have control over the quantity of flow being released from the upstream DRP into the Fife Brook Development. While it may be theoretically possible that BSPC may be able to maintain higher outflows from the Fife Brook Development for a very limited time on a given day by dipping even further into the “box of water”, this method of operating is simply not sustainable, as it will create cumulative, ever-increasing volume deficits and delay over time that cannot be relieved by an inflow regime from Station No. 5 that was not intended to support higher whitewater or minimum flow releases from the Fife Brook Development.

BSPC has already demonstrated in the Operations Model Study Report that any increases in the existing minimum flow or recreational releases will result in water volume deficits. Further, the report already demonstrates that reserve volumes higher than 150 acre-feet do not provide a remedy to the basic inflow/outflow deficit. The scenarios requested by the Whitewater Interest Group will not provide any new information since they are simply a re-packaged set of increased outflow demands which have already been shown as unsustainable in the context of the Settlement and inflow from Station No. 5 which is intended to meet the conditions of the Settlement. For these reasons, BSPC urges the Commission not to adopt the Whitewater Interest Group’s requested modifications to the Operations Model and Operations Model Study Report.

### **CRC and MADFW Model Scenarios**

The CRC filed timely commented on the Operation Model Study Report and requested that FERC amend the approved study plan to require BSPC to conduct additional model runs. The CRC requested that BSPC re-run all completed model scenarios to (a) prioritize non-exceedance of the defined ramping rates, (b) prioritize minimum flows over recreational releases, (c) report results by the number of hours that minimum flows or recreational releases would be missed due to insufficient water (number of hours by year and by month), and (d) model the runs with and without utilizing an increased reserve volume from the Lower Reservoir.

Additionally, the CRC requested that BSPC conduct additional modelling based on both the existing 125 cfs minimum flow, and a seasonal minimum flow of 125 cfs for the period of June 1 – October 15 and 275 cfs for the period of October 16 – May 30. Within these minimum flow parameters, the CRC requested that BSPC model different ramping rates for recreation and generation releases from May 15 – June 21 and June 21 – August 31<sup>4</sup>.

The MADFW filed a request to modify the approved study plan for the Operations Model on December 7, 2017. While the MADFW’s request was filed more than a week after the deadline for requests to amend the approved study plan, the MADFW’s request was nearly identical to the CRC’s. As such, BSPC will discuss both requests here.

BSPC notes that 70 model runs have been completed to date; these model runs were developed in consultation with the Flow Regime Working Group (FRWG), including the CRC and MADFW. Despite the FRWG’s involvement in the development of model scenarios, the CRC and MADFW are now requesting that BSPC complete additional runs, including re-running

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<sup>4</sup> The CRC did not define a specific recreation release; therefore, BSPC assumes that the 800 cfs recreation release proposed for the new license is the only recreation release that would apply to these model scenario requests.

dozens of completed scenarios using different assumptions and stipulations. This request for additional model scenarios is not based on new information; indeed, BSPC detailed the model parameters during FRWG Meetings in February 2016 and April 2017, repeatedly sought input from FRWG participants on model scenarios and stipulations, and presented preliminary model results at the FRWG Meeting on July 28, 2017<sup>5</sup>. The CRC and MADFW had repeated opportunities to identify specific model parameters over the course of 2016 and 2017. Neither the CRC nor MADFW have demonstrated that the Operations Model was developed inconsistent with the approved study plan; in fact, the CRC stated in its November 29, 2017 comments on the Operations Model Study Report that “the CRC believes the Operations Model was developed in a manner consistent with the Revised Study Plan (RSP) dated September 30, 2015 and FERC’s Study Plan Determination dated October 30, 2015.” BSPC notes that the scope of the approved study plan is intended to “keep the total number of scenario runs/combinations to a manageable, sensible level so as to facilitate reporting on bounding and primary, select scenarios.” BSPC believes that the completed model runs achieves the intent of reporting on “bounding and primary, select scenarios,” including examining the effects of using even more Bear Swamp water (increased reserve volume).

With respect to reporting, BSPC provided the FRWG with flow exception tables that reported on the number of days per month and year (over the period-of-record) that the minimum flow or recreation release requirements could not be met for each model scenario. The CRC and MADFW are now requesting that FERC require BSPC to refine this reporting further to present the output results in the number of hours per year and by month. BSPC does not believe this level of reporting is useful; as described during the October 2017 Study Report Meeting, BSPC views any instance where required flows cannot be met as a “miss” and a potential non-compliance event. This is true whether the “miss” is for one hour or 24 hours. Modifying the model criteria as requested by the CRC and MADFW would not change the fact that a miss occurred because the water was unavailable. BSPC recognizes that the CRC and MADFW are seeking to identify instances where using even more Bear Swamp water (increased reserve volume) in the Lower Reservoir could be used to make up a temporary volumetric shortfall and meet flow requirements until replacement water arrives from Station No. 5. However, as described above, there is no “replacement water” in the system that would predictably allow BSPC to make up a volume deficit since higher outflow demands sought by stakeholders still exceed the historical Station No. 5 inflow hydrology that is calibrated and tuned to achieving Settlement outflow demands only.

BSPC concurs with the CRC’s stated assessment that the Operations Model was conducted in accordance with the study plan approved in the Commission’s SPD. The requested additional model runs would be inconsistent with the intent and scope of the approved study plan, and would not meaningfully inform the license conditions. BSPC has already demonstrated in the Operations Model Study Report that all alternate flow regimes which require additional water will exceed the hydrology that is calibrated and tuned to achieving Settlement outflow demands. Re-running the existing model, regardless of assumptions, stipulations, or priorities, will not change the basic inflow/outflow deficit. BSPC requests that the Commission not adopt the CRC

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<sup>5</sup> Both the CRC and MADFW were invited to attend the July 28, 2017 FRWG Meeting. The CRC participated in the meeting, but the MADFW did not attend.

and MADFW's requests to re-run completed models using different assumptions, stipulations, or priorities.

BSPC now turns to address the CRC and MADFW's request for new model scenarios. The new scenarios requested by the CRC and MADFW are generally volumetrically equivalent to, or bounded by the 70 model runs already conducted to date. For example, the seasonal minimum flow in the requested scenarios (125 cfs for the period of June 1 – October 15, and 275 cfs for the period of October 16 – May 30) equates to the volume associated with year-round minimum flow of about 220 cfs. BSPC has already modeled a scenario with nearly this volumetric equivalent ("FERC\_800\_225") which demonstrates a volumetric deficit would occur with this higher minimum flow. Re-running this volume in the requested re-distributed fashion (125/275 cfs seasonally, as opposed to 220 cfs year round) would lead to results nearly identical to the "FERC\_800\_225" scenario which demonstrated that over the nine-year period-of-record, the minimum instantaneous flow requirement could not be met on 88 days, and the recreation flow requirement could not be met on 70 days.

In addition to the seasonal minimum flow requirements, the CRC and MADFW have also requested that new model runs incorporate different ramping rates for all generation or recreation releases from May 15 through August 31. As an example, the CRC and MADFW requested that BSPC model a ramping rate up to generation or recreation releases not to exceed 197 cfs/hour for the period of May 15 – June 21, with a one-hour hold point at 400 cfs during ramp-up and ramp-down. BSPC calculated the volume of water necessary to ramp up to a scheduled 800 cfs three-hour whitewater release, sustain the 800 cfs release, and ramp down to a minimum flow. This ramp-up/ramp-down scenario represents the equivalent of a three-hour whitewater release at 1,315 cfs.

Under the same model scenario, the CRC and MADFW requested that BSPC model a 346 cfs/hour ramping rate up to generation or recreation release flows for the period of June 21 – August 31, with a one-hour hold point at 400 cfs during ramp-up and ramp-down. Volumetric calculations indicate that this scenario is the equivalent of a three-hour whitewater release at approximately 1,373 cfs.

The seasonal minimum flow release requirements and the ramping rates described above can generally be represented and bounded by the existing "FERC\_1300\_225" or the "FERC\_1400\_225" model scenarios. As described in the Operations Modeling Study Report, these model scenarios utilized the existing baseline with a minimum instantaneous flow of 225 cfs and a recreational flow requirement of either 1,300 cfs or 1,400 cfs, respectively. The model run output demonstrated that under either scenario, the minimum instantaneous flow requirement and the recreation flow requirement could not be met for more than 140 days over the nine-year period-of-record.

In addition to the request to re-run all existing 70 scenarios with new stipulations as noted above (which BSPC requests the Commission not adopt), BSPC notes that the CRC/MADFW request also includes at least 10 new model scenarios that relate to the existing minimum flow and a

suggested new seasonal minimum flow combined with a series of ramping requests.<sup>6</sup> BSPC does not believe these additional runs are necessary or will provide new information since they have near-equivalency to any one of, or are bounded by, the 70 model runs already performed as noted above. As such, BSPC does not believe that any modifications to the approved Operations Model study plan are warranted based on the CRC and MADFW's requests. None-the-less, and to further demonstrate and confirm volumetric shortfalls, BSPC proposes to, in the context of the existing reserve volume of 150 acre-feet (i.e. not trying to reserve additional volume from the Bear Swamp storage), perform two additional model runs consisting of applying the requested seasonal minimum flow in conjunction with the requested two seasonal ramping rate schemes. BSPC believes this to be within the context of focusing on "bounding and primary, select scenarios" as identified in the approved study plan. BSPC will provide the findings of these two additional model runs in the Final License Application for the Project.

### Conclusion

For the reasons described above, BSPC does not believe that any new studies, or modifications to the approved study plan, are warranted and respectfully requests that the Director take BSPC's responses to these comments into consideration in his decision regarding whether it is appropriate to amend the approved study plan.

BSPC appreciates this opportunity to respond to comments and provide additional information to the Commission, and looks forward to continuing to work with agencies, Tribes, other relicensing participants, and FERC staff during the remainder of the ILP. Should you have any question regarding this filing, please contact either Steve Murphy at (315) 598-6130 or me at (207) 755-5603 or Frank.Dunlap@BrookfieldRenewable.com.

Sincerely,



Frank H. Dunlap  
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Cc: Distribution List  
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<sup>6</sup> If these requests apply to all prior modeled whitewater release as opposed to just the 800 cfs, the number of new model runs would be much higher.

**Bear Swamp Project (FERC No. 2669)**  
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