

VIA ELECTRONIC FILING

June 27, 2014

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

**SUBJECT: Hawks Nest Hydroelectric Project (FERC No. 2512-069)
Glen Ferris Hydroelectric Project (FERC No. 14439-000)
Summary of Initial Study Results Meeting**

Dear Secretary Bose:

Hawks Nest Hydro, LLC (Hawks Nest Hydro, or Licensee), a subsidiary of Brookfield Renewable Energy Group (Brookfield), owns and operates the Hawks Nest Hydroelectric Project (Hawks Nest) (FERC No. 2512) and the Glen Ferris Hydroelectric Project (Glen Ferris) (FERC No. 14439) (collectively, the “Projects”) in Fayette County, West Virginia. Hawks Nest Hydro is pursuing a new license from the Federal Energy Regulatory Commission (FERC or Commission) for the continued operation and maintenance of the Projects in accordance with the Integrated Licensing Process (ILP) defined at 18 CFR Part 5. Hawks Nest Hydro may apply for separate licenses for Hawks Nest and Glen Ferris.

In accordance with 18 CFR § 5.15(c), Hawks Nest Hydro filed the Initial Study Report (ISR) with the Commission on May 30, 2014. The timely filing of the ISR was consistent with the requirements of the ILP and with the pre-filing process plan and schedule presented in Hawks Nest Hydro’s July 24, 2012 Pre-Application Document and in the Commission’s Scoping Document 1 and Scoping Document 2, dated September 20, 2012 and January 2, 2013, respectively.

The Commission’s regulations direct license applicants to convene an Initial Study Results Meeting within 15 days of filing the ISR. Therefore, concurrent with the May 30, 2014 filing of the ISR, Hawks Nest Hydro filed notification that the Initial Study Results Meeting would be held on June 12, 2014.

The Initial Study Results Meeting was held as scheduled from 9:00 a.m. to 3:00 p.m. on June 12, 2014. The Commission’s regulations at 18 CFR § 5.15(c)(3) require Hawks Nest Hydro to file this summary of the ISR Meeting, including any proposed modifications to ongoing studies or new studies proposed by the Licensee, within 15 days of the Initial Study Results Meeting.

1.0 Purpose and List of Participants

1.1 Purpose

In accordance with 18 CFR § 5.15(c)(2), Hawks Nest Hydro held an Initial Study Results Meeting with the relicensing participants and the Commission staff to discuss the study results and the Licensee's or other participant's proposals, if any, to modify the study plan in light of the progress of the study plan and data collected.

The study plan approved by the Commission directed Hawks Nest Hydro to conduct 10 studies in support of relicensing the Projects:

- Water Quality Study
- Fish Entrainment Study
- Aquatic Species Composition and Abundance Survey
- Rare, Threatened, and Endangered Aquatic Species Study
- Bypass Reach Aquatic Habitat Use and Instream Flow Study
- Wetland and Riparian Habitat Survey
- Rare, Threatened, and Endangered Terrestrial Species Study
- Recreation Flow Assessment
- Recreation Use and Needs Assessment
- Cultural Resources Study

The specific objectives of the Initial Study Results Meeting were to:

- Present status and initial results of relicensing studies to date;
- Present any upcoming or ongoing study activities; and
- Gather input on any proposed study modifications and/or proposals based on the results and data provided at the meeting.

In furtherance of these objectives, Hawks Nest Hydro and HDR Engineering, Inc. (HDR) presented information regarding the relicensing process for the Projects, and specific information regarding each approved study, including:

- Study status;
- Activities performed to date and data collected;
- Deviations from the approved study plan; and
- Scheduled activities.

A copy of the presentation is attached to this Initial Study Results Meeting Summary.

1.2 Participants

Concurrent with the May 30, 2014 filing of the ISR, resource agencies, Tribes, non-governmental organizations, and other interested parties were invited to participate in the Initial Study Results Meeting. Table 1 presents the meeting participants and their respective organization/affiliation.

**TABLE 1
 HAWKS NEST AND GLEN FERRIS PROJECTS INITIAL STUDY RESULTS
 MEETING PARTICIPANTS**

Participant	Organization / Affiliation
Casey Randolph	West Virginia Division of Energy
Wilma Reip	West Virginia Department of Environmental Protection (WV DEP)
Kerry Bledsoe	West Virginia Division of Natural Resources – Wildlife Resources Section (WV DNR)
Kevin Colburn*	American Whitewater
George Santucci	New River Conservancy
Russ Lang	WVA Manufacturing, LLC
Bobby Bower	West Virginia Professional River Outfitters
Monir Chowdhury	FERC
John Mudre	FERC
Allyson Conner	FERC
Emily Carter*	FERC
Steven Murphy	Brookfield
Michael Sabad	Brookfield
David Culligan	HDR
Sarah Kulpa	HDR
Matt McKinney	HDR
Rob Quiggle	HDR
Ty Ziegler	HDR

*Indicates participation via conference call.

2.0 Summary of Initial Study Results Meeting

As noted above, Hawks Nest Hydro and HDR presented information regarding the relicensing process, approved pre-filing schedule, and study activities to date. This information is summarized in the presentation attached to this Initial Study Results Meeting Summary. The following sections summarize the information presented and the discussion/questions in regards to the approved studies.

2.1 Introduction

Steve Murphy (Brookfield) and Dave Culligan (HDR) provided an introduction to the meeting, including Brookfield’s relicensing team, the purpose of the meeting, and an overview of the

relicensing process, activities to date for the Study Working Groups, and ILP milestones to date and next steps. At the introduction, after lunch, and at the close of the meeting Dave Culligan further explained the opportunities and timeframes for filing comments or disputes in response to the Initial Study Results Meeting Summary.

2.2 Water Quality Study

Ty Ziegler (HDR) presented the objectives of, methods for, and results of the Water Quality Study.

- The Water Quality study was conducted by HDR in 2012 and 2013. A description of the methodology and results from the study are presented in the Draft Water Quality Study Report, included as Appendix A of the ISR.
- A wide and representative range of conditions was captured by the sampling period—as 2012 was a dry, hot summer, and 2013 was a cool, wet summer—and instrumentation was deployed over a range of flows. The continuous water quality monitoring period completed in 2012 captured low (minimum) flow conditions as well as a runoff event.
- John Mudre (FERC) noted that the 2012 data was collected prior to the proposed or revised study plan or the study plan determination. Ty confirmed this but noted that the sampling conducted in 2012 (which was initiated during preparation of the PAD) employed standard methodology and was consistent with the methodology used in 2013, other than an additional two locations were added in 2013, and nutrient concentrations and total dissolved gas (TDG) were added to the study in 2013.
- Kerry Bledsoe (WV DNR) asked if any water quality data was collected (or proposed or planned to be collected) above or below Glen Ferris. Ty responded that no data was collected at locations immediately upstream or downstream of Glen Ferris, as no sampling in these locations was requested during study scoping or study planning, and none was proposed in the study plan.
- Ty explained the trends and characteristics illustrated by the graphs included in the draft study report and reviewed the key findings for the Water Quality study.
- Water quality parameters measured did not vary significantly from upstream to downstream sampling locations (i.e., from the upper Hawks Nest reservoir to below the Hawks Nest powerhouse).
- George Santucci (New River Conservancy) pointed out that pH and temperatures were generally lower when the volume of water in the system is higher. Matt McKinney (HDR) noted that atmospheric conditions were also different during this period (i.e., cooler air temperature).
- Ty explained the diurnal swings in temperature (4-6 degrees F), DO, and pH measured in locations in the bypass reach are due to photosynthetic activity. Ty noted that the state standards provide that higher pH values due to photosynthesis may be tolerated.
- Monir Chowdhury (FERC) asked about the depth of water at the bypass reach sampling locations. Matt explained that instruments were generally deployed at the stream margins

in an effort to capture “worse case” conditions. The depth of the water at this particular sampling location was approximately 2 feet.

- Ty noted that the relatively deep Hawks Nest reservoir (40-50 ft) did not exhibit stratification (or very weak stratification, at most), even during the hot, dry summer conditions of 2012.
- John asked how far upstream of the Hawks Nest intake the profiles were taken. Matt said at the buoy line, which is a few hundred yards upstream of the intake.
- Ty pointed out that while elevated TDG levels are commonly a problem at higher head dams, the measurements during this study indicate that TDG is not an issue at the Hawks Nest Project. This is likely attributable to the spillway design/plunge pool depth.
- Water quality sampling was conducted in accordance with the methods described in the approved study plan, except continuous water quality monitoring (Hydrolab deployment) was not conducted in 2013 due to persistent high river flow conditions. However, this continuous data was collected in 2012 at the sites specified in the revised study plan. Given that water quality work in 2012 and 2013 yielded sound, reliable information, it was noted that additional data collection in 2014 would not likely yield substantial new or beneficial incremental knowledge beyond that gained in 2012 or 2013.
- John asked for clarification/confirmation that the 2012 data captured “worse case” conditions. Ty confirmed that the 2012 data captured these conditions, as 2012 was representative of dry, hot conditions.
- John asked if the travel time from the intake to the powerhouse tailrace was known. Dave Culligan noted that flow through a penstock can be broadly estimated in the nominal range of 10 feet per second for initial, rough purposes. Using this assumption relative to a 3-mile tunnel, a travel time can be estimated in the sub-hour range (i.e., brief travel time).
- Kerry asked if the monitoring location in the tailrace captured spill through the main gates and not just spill through the trash gate. HDR and Brookfield explained that the trash gate capacity is only approximately 300 cfs, so the higher spills captured during the water quality study were released through the main spillway gates. Kerry pointed out that there is no plunge pool below the trash gate, where the minimum flow is typically released.
- In response to a question from George, Matt confirmed that the most upstream sampling location was the upper extent of the Hawks Nest reservoir (approximately the confluence of the New River and Marr Branch). This is the sampling location proposed in the approved study plan, and conditions here represent Project inflow conditions. Matt noted that riverine conditions in this area of the river presented challenges for safe boat access.
- Bobby Bower (WVPRO) asked if the study would include comparison of the results from the 2012 and 2013 sampling to the results from the studies for the previous relicensing. The group did not recall, during the meeting, precisely what data was collected for the previous relicensing, but thought the previous study would not likely have been as robust as the current water quality study. Dave Culligan noted that this type of comparison could be addressed in the draft license application if/as appropriate.

- Bobby noted that there is no water quality data on record that reflects pre-Project (i.e., pre-dam) conditions.

2.2 Aquatic Species Composition and Abundance Survey

Matt McKinney presented the objectives of, methods for, and results of the Aquatic Species Composition and Abundance Survey.

- The Aquatic Species Composition and Abundance Survey was conducted by HDR in 2013. A description of the methodology and results from the study are presented in the Draft Aquatic Species Composition and Abundance Survey Report, included as Appendix C of the ISR.
- Matt reviewed the methods and sampling locations for each component of this study.
- Fish
 - The persistent high flow conditions of 2013 presented challenges for the fishery survey, but all proposed sampling locations were sampled using the proposed methodology over the course of the summer of 2013.
 - Matt reviewed key findings from the fish sampling effort.
 - The sampling effort reflected a diverse and abundant fishery, with a wide range of year classes and good condition of game species.
 - The bypass reach is dominated by telescope and mimic shiner.
 - The primary difference from previous sampling in the late 1980s is the presence of variegate darter in the bypass reach. This species is known to hybridize with the endemic candy darter.
 - Bigmouth chub was the only New River endemic species collected in the bypass reach.
 - Shovelnose sturgeon and other rare species (i.e., highfin carpsucker) were documented at the base of Kanawha Falls.
 - George Santucci asked how data is presented in the study report (i.e., is it conducive to comparing species collected at different locations). Matt confirmed that the data is presented by location (e.g., see Table 4-1 in the Draft Aquatic Species Composition and Abundance Survey Report).
 - Fish sampling was conducted in accordance with the methods described in the approved study plan, except that continuous basin-wide high flows and higher-than-normal spill conditions in the Hawks Nest bypass reach limited the safe conduct of two distinct fisheries sampling events in 2013 as contemplated in the RSP. However, it was noted that the fisheries work that was conducted in 2013 spanned the early, mid and late summer periods as intended and yielded adequate, robust data to fulfill the intended study goals. Hawks Nest Hydro does not expect

that further sampling in 2014 would likely yield substantial new or beneficial incremental knowledge beyond that gained in 2013.

- **Mussels and hellbender**
 - Matt reviewed the results and key findings from the mussel and hellbender surveys:
 - 15 different sites in the study area were sampled on September 6-8, 2013, following WV DEP's Mussel Survey Protocol and by lifting large flat rocks and using dive lights to look for hellbender. No hellbenders were found during this study effort.
 - No live mussels were found in the Hawks Nest reservoir. Two live mussels were found in the bypass reach; this is similar to the results of a previous WV DNR survey of this area.
 - 190 mussels were collected in the Glen Ferris reservoir, with 184 of those from a mussel bed. Fresh shell material from green floater was found at this mussel bed. Matt pointed out the approximate location of this mussel bed on a map/aerial photo in response to a request for this information from George.
 - The mussel and hellbender surveys were conducted in full accordance with the methods described in the approved study plan.
- **Benthic macroinvertebrates**
 - Matt reviewed the results and key findings from the benthic macroinvertebrate survey, which was conducted on August 7, 2013.
 - Two 100-meter bypass reach sites (upstream and downstream of Laurel Creek) were sampled. This included collection of physiochemical, habitat, and benthic macroinvertebrate data using WV DEP's Watershed Assessment Branch 2013 Standard Operating Procedure for Benthic Macroinvertebrate Collection.
 - The sampling methods used consisted of multi-habitat jab-sweep and riffle/run kicknet sampling.
 - Laboratory analysis of the samples collected identified 1,434 benthic macroinvertebrates (representing 27 families). Black fly and small minnow mayfly were found in all samples and were often the most abundant taxa. Chironomids were not abundant in samples, but appeared to be more abundant in downstream jab-sweep samples. EPT taxa comprised a substantial portion of the benthic macroinvertebrate community but were typically more abundant in the riffle/run kicknet samples (as expected).
 - Matt noted that the laboratory analysis included, as noted on the table in the draft study report, a "Large/Rare Scan." This is a qualitative procedure conducted after a sample has been sorted according to the specified protocol, and is a way to identify any species that may have gone unnoticed by sorting procedures and provides additional information on community composition.

- Several benthic metrics, as well as West Virginia Stream Condition Index (WVSCI) scores were calculated. Habitat assessment scores were optimal for all sites. WVSCI scores were towards the upper end of the narrow “gray” zone of stream condition toward “good”. Streams that score in the “gray” zone are not considered by WV DEP to be impaired, but are typically further evaluated either with best professional judgment or with water quality sampling. Water quality data from 2012 and 2013 collected for the Water Quality Study suggest this reach of the New River is fully supporting of its designated uses.
- The benthic macroinvertebrate survey was conducted in full accordance with the methods described in the approved study plan.
- George asked how data is presented in the study report (i.e., is it conducive to comparing species collected at different locations). Matt confirmed that the data is presented by location (e.g., see Table 4-8 in the Draft Aquatic Species Composition and Abundance Survey Report).
- In response to a question from George regarding whether there were any differences evident between the two macroinvertebrate sampling locations, Matt noted that no such conclusion was made.
- George asked Matt to clarify if benthic macroinvertebrate sampling was done at the upstream location (Marr Branch). Matt confirmed that it was not, that the approved study plan did not call for this and noted that the study was conducted in accordance with the approved study plan. Dave Culligan and Matt noted that the Initial Study Results meeting summary comment period and process provide an opportunity to provide further comment.

2.3 Rare, Threatened, and Endangered Aquatic Species Study

Matt McKinney presented the objectives of, methods for, and progress of the Rare, Threatened, and Endangered (RTE) Aquatic Species Study.

- This study utilizes data collected from other studies, in particular the Aquatic Species Composition and Abundance Survey. Additional field surveys for RTE aquatic species would occur if any significant populations were found during that study.
- No federally listed RTE aquatic species were documented during the Aquatic Species Composition and Abundance Survey. Numerous WV Natural Heritage Program RTE aquatic species were documented in the 2013 aquatic species surveys, including several species of mussels that were found within a mussel bed located in the Glen Ferris reservoir.
- This study is being conducted in full accordance with the methods described in the approved study plan, except that no quantitative sampling is proposed for the mussel bed. This variance is based on feedback received to date from WV DNR that this quantitative sampling is not necessary and it is WV DNR’s preference to not disturb the mussel bed.

- George Santucci asked how potential mussel habitat would be addressed in the Instream Flow study. Matt and Ty Ziegler explained that species lacking individual habitat suitability index curves are typically captured within a habitat use guild, and the instream flow model will consider multiple guilds.

2.4 Fish Entrainment Study

Matt McKinney presented the objectives of, methods for, and results of the Fish Entrainment Study.

- The Fish Entrainment Study was conducted by HDR in 2013-2014. A description of the methodology and results from the study are presented in the Draft Fish Entrainment Report, included as Appendix B of the ISR.
- Definitions for the terms impingement and entrainment were provided. Impingement refers to the potential for fish to become trapped against the intake trashracks due to velocity conditions at the intake. Entrainment refers to the passage of fish into the powerhouse intakes and through the turbine units. Fish subjected to impingement or entrainment can be at risk for injury or mortality.
- Matt provided an overview of factors affecting entrainment. John Mudre pointed out these some of these factors only affect survival.
- Matt described the characteristics of the Hawks Nest and Glen Ferris powerhouse intakes. Hawks Nest is a more open intake and is fitted with trashracks with 3.19-inch spacing. Glen Ferris west and east intakes have more restricted flow (canal or headrace-like setting). The Glen Ferris east powerhouse intake is fitted with trashracks with 3.12-inch spacing, and the Glen Ferris west powerhouse intake is fitted with trashracks with 1.75-inch spacing.
- Matt provided explanation and interpretation of the graphics showing the ADCP velocity plot for the maximum flow measured at Hawks Nest and the plots for the Glen Ferris east and west powerhouses.
- Matt noted that the previous entrainment study in the 1980s documented that most fish move through the upper portion of the intake structure. In response to a question from John, Mike Sabad (Brookfield) explained that the trashracks do extend the full depth of the intake, but the trash-rake may not reach the lowest depth of the intake. John noted that if the debris were not built up at the lower depths, the maximum velocities recorded at other localized areas may be decreased.
- As part of the impingement and intake avoidance evaluation phase of this study, the velocity data collected was compared to available burst swim speed data, and trashrack spacing was compared to fish size to determine the minimum sizes of the target fish species that would be physically excluded or impinged on the trashracks.
- The entrainment phase of this study incorporated empirical entrainment rate data, data on site hydrology and operations, fish abundance (from the 2013 Aquatic Species

Composition and Abundance Survey) and turbine survival probability (i.e., blade strike analysis).

- Matt presented the entrainment and survival estimates for the Hawks Nest Project and for the Glen Ferris Project. The estimates derived from this study fall within the range calculated during the previous relicensing study at Hawks Nest. As stated in the report from the previous study, however, the previous study likely overestimated entrainment at Glen Ferris; this is supported by the desktop assessment results from this study.
- This study also included an assessment of fish passage alternatives and the costs of such alternatives. This included derivation of cost estimates (capital and operating/maintenance) for measures evaluated during the previous relicensing.
- In response to a question from George Santucci, Dave Culligan clarified that during the previous relicensing these fish protection measures were originally prescribed and then subsequently modified through further consultation and study.
- The Fish Entrainment Study was conducted in full accordance with the methods described in the approved study plan.
- Kerry Bledsoe asked if HDR had looked at the effect of pressure differential for the difference in head between the intake and the Hawks Nest powerhouse. Matt noted that the calculated pressure differential was 68 psi, and that this information (including assumptions on latent mortality) is included in the study report.

2.5 Cultural Resources Study

Rob Quiggle (HDR) presented the objectives of, methods for, and progress of the Cultural Resources Study.

- Rob reviewed activities that were completed in 2013, including consultation with the West Virginia State Historic Preservation Office (WVSHPO) and Tribes to define the Area of Potential Effect and conduct of the Phase 1 Archaeological Identification Survey Report (“Phase I Survey”).
- Rob described the consultation process to develop and refine the APE and the role of HDR’s subconsultant, Cultural Resource Analysts, Inc. (CRA) in performing the Phase 1 Survey.
- The Phase 1 Survey included (1) a review of available cultural resource reports, secondary literature, historic maps, and site files pertinent to the APE, (2) visual inspection of the Projects’ APE, including previously reported archaeological sites, and (3) a geomorphological analysis of the Projects’ APE, including the shoreline of reservoirs and the Hawks Nest bypass reach.
- The Phase 1 Survey identified 12 archaeological sites within the APE:
 - Two prehistoric period resources were identified during previous cultural resources studies that were not associated with the Projects, and one prehistoric period archaeological site was identified by CRA during field investigation. Of

these three prehistoric archaeological sites, one has previously been recommended as ineligible for inclusion in the National Register of Historic Places (NRHP), and the NRHP eligibility of the remaining two prehistoric period archaeological sites has not been evaluated.

- CRA also identified nine historic period archaeological sites within the APE during the Phase I archaeological identification survey. The NRHP eligibility of these historic period archaeological sites has not been evaluated; however, data collected by CRA indicates that one of these sites lacks integrity and therefore may be ineligible for the NRHP.
- In response to a question from George Santucci, Rob explained that whether the sites are further evaluated will be determined in part through consultation with WVSHPO. Evaluation to date suggests that there are no ongoing effects to these sites, so they may be subject to either further evaluation or management measures.
- Ongoing consultation with Tribes to identify traditional cultural properties will be done in parallel with consultation with the WVSHPO.
- The Cultural Resources Study is being conducted in full accordance with the methods described in the approved study plan, with no expected variances. The schedule for this study has been slightly modified based on the time to conduct the Phase 1 Survey as well as the extensive information that was reviewed as part of this effort.
- Kerry Bledsoe asked for clarification as to what an “archaeological” site entails within the context of this study. Rob explained that there are two types of archaeological sites: “prehistoric” (i.e., Native American), typically lithic scatters (evidence of flake stone tools, may be exposed on the surface), evidence of camp sites, or rock shelters; and “historic”, typically building foundations or other anthropogenic materials.
- Bobby Bower asked if any rock carvings or petroglyphs were found during this study. Rob noted that none were found during this study, but these are known to exist in the New River Gorge (i.e., may be located outside of the APE).
- Rob clarified that the Phase 1 Survey included, in addition to background/desktop research, field survey of safely accessible areas, a geomorphological assessment, and an architectural assessment of the project structures.
- Allyson Conner (FERC) asked how many Tribes have been consulted. Rob noted that he did not know the number or names of Tribes offhand, but that this information would be included in the meeting summary. To that end, Hawks Nest Hydro notes that FERC’s initial Tribal Consultation letter (October 26, 2011) for this relicensing was sent to 16 Tribes. Based on responses received by FERC and by Hawks Nest Hydro in response to the PAD questionnaire, as well as review of existing databases and information, Hawks Nest Hydro is consulting with 10 Tribes, included in the Projects’ mailing list, throughout this process.

2.6 Wetland and Riparian Habitat Survey

Sarah Kulpa (HDR) presented the objectives of, methods for, and results of the Wetland and Riparian Habitat Survey. Sarah noted that HDR's study lead for this study is Devin Malkin and that she was presenting on behalf of Devin.

- The Wetland and Riparian Habitat Survey was conducted by Environmental Solutions & Innovations, Inc. (ESI) and HDR in the summer and fall of 2013. A description of the methodology and results from the study are presented in the Draft Wetland and Riparian Habitat Report, included as Appendix D of the ISR.
- Sarah presented the objectives of, methods for, and results of the Wetland and Riparian Habitat Survey.
- Sarah noted that wetland and riparian habitat mapping is a common baseline study conducted in support of hydropower relicensings.
- This study encompassed the entire project area and included wetland mapping and characterization (using standard references and methodologies, and including assessment of functions and values), riparian habitat mapping and characterization (defined using Vanderhorst et al.'s 2007 publication, *Vegetation Classification and Mapping of New River Gorge National River, West Virginia*, as recommended during the study scoping and planning stage of the ILP), and upland habitat mapping and characterization, to provide context for wetland and riparian data.
- ESI completed the field investigations for this study.
- Sarah presented a summary of the cover types observed in the field and the corresponding percent of the study area for each cover type. The majority of the study area can be classified as Oak-Hickory-Sugar Maple Forest (upland habitat) and Sycamore-Ash Floodplain forest (riparian habitat). Wetlands comprised only 0.5 percent of the study area. Palustrine emergent was the primary wetland type mapped within the study area.
- Sarah noted that wetland and riparian habitats within the study area were found to be vigorous in growth and healthy, and they reflect and are in equilibrium with existing project operations (i.e., stable reservoirs and variable flows in the bypass reach). These habitats provide numerous benefits and support a number of occurrences of state-listed plant species (as will be discussed in the RTE Terrestrial Species Study).
- The potential for development of additional wetland and riparian habitat is limited by adjacent topography (i.e., steep-walled gorge) and to a slightly lesser extent, substrate.
- The Wetland and Riparian Habitat Survey was conducted in full accordance with the methods described in the approved study plan.
- There were no questions or additional discussion regarding the Wetland and Riparian Habitat Survey by meeting participants.

2.7 Bypass Reach Aquatic Habitat Use / Instream Flow Study

Ty Ziegler presented the objectives of, methods for, and progress of the Bypass Reach Aquatic Habitat Use / Instream Flow Study.

- The objective of this study is to provide information for an analysis relative to the existing minimum flow release and ramping rate schedule for the protection of aquatic habitat in the bypass reach.
- The instream flow model developed will be used to assess a range of flow releases from Hawks Nest dam and their impacts on aquatic habitat.
- Ty reviewed the process and criteria for selection of the 2-D study site (the Cotton Hill study site, located just downstream from the Cotton Hill Bridge). The data described below is being collected throughout the entire study site.
- The fieldwork component for this study has three main parts:
 - Channel survey (LiDAR data, bathymetric survey, topographic survey)
 - Substrate mapping (high resolution aerial imagery plus ground-truthing of delineated substrate during topographic survey)
 - Model calibration data at different flow conditions (200, 500, 1000 cfs), including water surface elevations and velocity profiles, discharge, and stage. (Ty noted that this data is not used to build the model—which is based on channel geometry—but rather will be used to compare model results to actual conditions.)
- Study activities are still focused on data collection. No variances are expected at this point. Data collection is expected to be completed later this summer, with model development expected this fall. The draft study report is expected to be available by early 2015.
- Bobby Bower asked if there were additional opportunities for Study Working Group participation in this study. Dave Culligan explained that so far, much of these activities for this study (and the other studies) were front-loaded (e.g., the study site selection). During the Study Working Groups plenary meeting last April there was discussion of outfitters potentially assisting with river access. However, because HDR was able to self-perform the in-river work, there was not a need for this type of assistance during the study execution stage. There will be further opportunities for consultation and input at the draft study report stage, as it is expected that the Study Working Group members will receive the draft study report in advance of the Updated Study Report (to be filed in May 2015).

2.8 Rare, Threatened, and Endangered Terrestrial Species Study

Sarah Kulpa presented the objectives of, methods for, and results of the RTE Terrestrial Species Study. Sarah noted that HDR's study lead for this study is Devin Malkin and that she was presenting on behalf of Devin.

- The RTE Terrestrial Species Study was conducted by ESI (field survey component) and HDR in 2013. A description of the methodology and results from the study are presented in the Rare, Threatened, and Endangered Species Study Report, included as Appendix E of the ISR.
- Sarah presented the objectives of, methods for, and results of the RTE Terrestrial Species Study.
- Four threatened or endangered species are known to occur in Fayette County (Indiana bat, Virginia big-eared bat, running buffalo clover, and Virginia spiraea). This study also encompassed state species of concern and bald eagles (protected under the Bald and Golden Eagle Protection Act).
- The study area included terrestrial and appropriate aquatic floodplain and scourzone habitats within the project boundary.
- Pedestrian surveys were conducted by qualified botanists to identify RTE plant species.
- ESI conducted habitat assessments for bats and conducted acoustic surveys at 23 sites following U.S. Fish and Wildlife Service (USFWS) protocols.
- Wildlife surveys were also conducted, focusing on locations of previously reported RTE species or species of concern, including green salamander and Alleghany woodrat.
- Surveys for bald eagle nests were conducted in conjunction with the wildlife surveys.
- The plant surveys identified 23 occurrences of West Virginia species of concern. No federal RTE species were identified during the surveys. The one known occurrence of running buffalo clover in the study area is the subject of separate monitoring and reporting under the existing Project license.
- John Mudre asked whether the existing running buffalo clover program was considered a success. Kerry Bledsoe explained that there were no rooted crowns reported in 2012, but there was evidence of crowns in 2013. Kerry noted that the WV DNR may be pursuing seed sources for reestablishing the species. The viability of the rooted crowns at this site are not threatened by human disturbance or project operations or activities, but rather by natural succession. Sarah noted that under the existing management plan, Brookfield meets annually with the WV DNR (USFWS is invited to participate as well but typically does not attend) to inspect the site where the plant occurs and discuss any recommended management measures or protections. Brookfield in turn implements management measures, namely vegetation clearing, if recommended by WV DNR.
- Eight bat species were identified by the acoustic bat surveys, including Indiana bat. Suitable roosting and foraging habitat is present in the study area, but no Indiana bat maternity colonies are known to occur in the project area or in Fayette County.
- No bald eagles were observed during the 2013 relicensing studies and no evidence of current or historic stick nests were observed. Bald eagles are known to occur, but not to nest, in the study area. Suitable nesting habitat is, however, present in the study area.

- No Alleghany woodrats were observed, although evidence of habitat use (i.e., woodrat latrines and food caches) was observed. No green salamanders were observed, although suitable habitat is present.
- George Santucci asked about the presence (or lack thereof) of Virginia spiraea in the project area, notably the bypass reach. Sarah explained that this species is considered by WV DNR as extirpated in the project area, and that it has not been observed since the single observation below Hawks Nest dam in 1961. Botanists did not record any occurrences of spiraea during the plant surveys. No further evaluations related to Virginia spiraea are planned, proposed, or required under the existing approved study plan.
- The RTE Terrestrial Species Study was conducted in accordance with the methods described in the approved study plan, except for a single variance: bald eagle stick nest searches were conducted in September in conjunction with other terrestrial studies, instead of in the early spring, as initially proposed. Sarah noted that bald eagle nests in the study area have not been previously observed, and that the stick nests remain intact after the spring season and are large enough that they would be readily visible during the survey conducted in September.

2.9 Recreation Flow Assessment

Rob Quiggle presented the objectives of, methods for, and progress of the Recreation Flow Assessment.

- This study is ongoing, as survey data is still being collected, and collected data is still being compiled and analyzed/summarized.
- Rob reviewed activities completed to date for the controlled flow evaluation study. All six of the controlled flow releases required by the approved study plan are complete. Rob thanked the whitewater outfitters and community for their assistance with and participation in the controlled flow evaluations.
- The final survey (flow comparison survey) is underway, and responses have been requested by June 30, 2014.
- The Extended Whitewater Evaluation is ongoing and is scheduled to continue through July 31, 2014. Only one completed survey has been received to date.
- General information/guidance on how to estimate flows in the bypass reach has been posted to the public relicensing website (<http://www.hawksnestandglenferris.com>), including a description of existing Hawks Nest operations (station capacity) and the preliminary stage-discharge curve that has been developed by Brookfield for the USGS gauge below Hawks Nest dam.
- Rob explained that the only variance for this study has been that the four controlled flow releases in the range of 1,500 to 3,000 cfs were conducted over a 2-day period instead of over 4 days. This schedule modification was driven primarily by requests from study participants/the Study Working Group, and no members of this group expressed disagreement with this variance when it was proposed prior to the final four releases.

- The draft study report is expected to be completed in the fall of 2014.
- Allyson Conner asked about the process for development and use of the preliminary stage-discharge curve, and whether this process included verification that the controlled flows evaluated were consistent with the flows proposed. Dave Culligan explained that this curve was developed based on extensive and numerous flow verification measurements collected over the course of 2012 and 2013. Dave noted that the actual flow releases were very close to the intended releases, and they checked well with station records and the gage readings. Lastly, Dave noted that the curve had not been fully vetted with the USGS yet, and that this curve will likely continue to be refined as needed with additional, relevant information that arises.
- Bobby Bower commented that ideally this curve would be linked or made available from the website for the USGS gauge. Sarah Kulpa and Ty Ziegler noted that further consultation with USGS is still needed and planned for USGS to review this curve, and for USGS to evaluate its use (and that this consultation is expected occur after additional flow measurements this summer). The preliminary curve will remain available on the relicensing website.
- The group discussed several issues relevant to the Extended Flow Evaluation Survey:
 - Kevin Colburn (American Whitewater) requested modification of the method for submitting a completed extended flow evaluation survey. Kevin stated that the existing methodology (i.e., download the Word or pdf form and submit via email) is not facilitating participation.
 - Steve Murphy noted that the existing methodology was driven largely by Brookfield's need to receive the completed liability waiver and the pre-run survey prior to receiving a completed post-run survey.
 - Kevin noted that a liability survey was not conventional for this type of online survey. Dave explained that the act of the survey may be viewed as an implied request on behalf of Brookfield to participate in the study and use the bypass reach, therefore liability waiver is needed.
 - Rob noted that the existing methodology does not present an unreasonably high bar for participation and is consistent with the approved study plan.
 - Kevin suggested that the Study Working Group further pursue/discuss this issue, potentially separately from the ISR process/comment period.
- Kevin reminded the group that the comparative flow survey for the controlled whitewater releases is still in process and requested that HDR continue to follow up with participants to obtain responses, including sending out at least 2 reminders before the close of the survey period.
 - Rob noted that HDR's subconsultant conducting the survey, IntelliQ, would be sending out such reminders.
- Kevin stated that from American Whitewater's perspective overall the Recreation Flow Assessment has gone pretty well.

- Allyson asked about coordination with WVA Manufacturing, LLC (“Alloy” or WVAM) regarding execution of this study and did WVAM intend to file comments about the impacts of the controlled whitewater releases on their operations. Russ Lang (WVAM) indicated that Alloy was consulted during the planning and coordination for this study and that they did intend to file comments.

2.10 Recreation Use and Needs Assessment

Rob Quiggle presented the objectives of, methods for, and progress of the Recreation Use and Needs Assessment.

- There are numerous data collection components of this study (literature review and Study Working Group formation, recreation facility inventory, supplemental recreation facility data, County Resident Survey, Recreation Activities and Facilities Survey, and area event survey). All have been completed or are in process. No additional surveys or survey activities are proposed or planned.
- Bobby Bower asked about the methods for selecting recipients for the County Resident Survey, noting that he has not encountered anyone who received one and asked if a list of recipients was available. Rob explained that HDR worked with an outside firm experienced with survey design and administration, IntelliQ, to administer this survey. IntelliQ derived a list of 2,000 random households in Fayette County to receive this survey.
- Rob noted that a separate Recreation Activities and Facilities Survey had been designed and distributed (and that the response period for this survey is ongoing). Rob noted that as this survey targets outfitters, recreation facilities managers, and other recreational stakeholders, it complements the data collected from the County Resident Survey and other surveys.
- Rob explained the types of information collected for the recreation facility inventory task of the Recreation Use and Needs Assessment. This included collection of data (including GPS coordinates and photographs) for each recreation site in the Project area, including, for example, the type of recreation provided, vehicular access and parking, and suitability to provide opportunities for access for persons with disabilities.
- The survey period for the survey box locations (Cotton Hill and Kanawha Falls recreation sites) was extended through the end of February 2014 per the request of the New River Alliance of Climbers (NRAC). The surveys collected at the survey boxes (approximately 570) reflect a broad range of recreational uses and are not dominated by any one user group or activity.
- Kevin Colburn noted that the upcoming Gauley Fest provides a potential future opportunity to collect data from the whitewater community (via an additional area event survey).
- Bobby expressed concern that the survey efforts are biased toward rock climbers and local residents/fishermen and against members of the whitewater community. Rob noted

that the surveys were designed and intended to capture the full range of recreational users and potential users. Sarah Kulpa added that the surveys collectively provide data from a wide and comprehensive range of users and provide a robust body of data to evaluate existing and potential recreational uses and needs.

- George Santucci expressed concern that whitewater study participants have been asked to sign a liability waiver, but not rock climbers. Steve Murphy acknowledged this concern and that recreation at the Hawks Nest and Glen Ferris Projects present some unique challenges and concerns for Brookfield. Steve explained that based on his understanding of Brookfield's liability concerns and potential exposure, in-water recreation is the highest concern. Additionally, the success of the Recreation Use and Needs Assessment does not require, and thereby "invite", rock climbers to evaluate climbing conditions.
- The Recreation Use and Needs Assessment is being conducted accordance with the methods described in the approved study plan. The schedule for completion of the data collection and analysis and the development of the draft study report has been modified to allow for additional time to complete the survey activities.
- The draft study report will be distributed to the Recreation Use and Needs Study Working Group (expected in the fall of 2014). In response to a question from Bobby as to how the survey data (responses) would be made available, Rob explained that the data will be presented in the draft study report.

3.0 Conclusion

Hawks Nest is filing this Initial Study Results meeting summary in accordance with 18 CFR § 5.15(c)(3) of the Commission's regulations. As provided in 18 CFR § 5.15(c)(4), any participant or the Commission's staff may file a disagreement concerning Hawks Nest Hydro's meeting summary within 30 days of the filing of this meeting summary (on or before July 27, 2014).

Any such filing must set forth the basis of the disagreement and must also include any modifications to ongoing studies or new studies proposed by the Commission or other participants. Pursuant to the ILP, proposals for modifications of approved studies must meet the criteria described at 18 CFR § 5.15(d) of the Commission's regulations. Any request for new or proposed studies must be accompanied by a showing of good cause why the proposal should be approved, and must include, as appropriate to the facts of the case, a statement explaining:

- Any material changes in the law or regulations applicable to the request;
- Why the goals and objectives of any approved study could not be met with the approved study methodology;
- Why the request was not made earlier;
- Significant changes in the Project proposal or that significant new information material to the study objectives has become available; and

- Why the new study request satisfies the Commission's criteria for study requests under the ILP, found at 18 CFR § 5.9(b).

As always, I welcome the opportunity to discuss this matter with you further. Should you have any additional questions or concerns, please do not hesitate to contact me at (315) 598-6130.

Very truly yours,

A handwritten signature in black ink, appearing to read "Steven P. Murphy". The signature is cursive and somewhat stylized.

Steven Murphy
Eastern Region – Atlantic Operations

Attachment