

E10 Project Releases: Weiss Bypass Working Group

Meeting Summary: Alabama Power Headquarters, Birmingham, AL Wednesday, February 19, 2003

Draft 02-24-03

Ashley McVicar explained the parameters that used to perform the modeling runs:

- Terrapin Creek flow was set to a constant 120 cfs
- Neely Henry pool level was set to a constant 508 ft. msl
- Generation scenarios begun at 3 hours into run
- All model runs set for 48 hours duration

A total of 20 modeling runs were performed. These include four generation scenarios (0, 1, 2, & 3-unit generation) applied to five spillway release scenarios (300, 600, 872, 1308, and 1743 cfs). Modeling runs were performed for each spillway release and generation scenario.

APC noted that the modeling runs depict steady-state conditions. Such conditions rarely occur, especially with respect to the generation scenarios. The members agreed, but noted that these modeling runs would help them better understand the hydraulic dynamics of the Weiss bypass. Some members requested the model output data. Ashley McVicar agreed to provide this data along with some viewing software.

Henry reviewed the Proposed Transect Analysis methodology from the February 11, 2003 memo to the group. Henry noted that substrate type, depth, velocity, and wetted perimeter are the four major parameters of greatest importance when considering minimum flows. Of these, Henry pointed out that substrate type is fairly uniform throughout, consisting of gravel and sand, and can be dropped from consideration. Also, Henry noted that wetted perimeter is maximized throughout Weiss bypass at relatively low levels of spillway releases.

As for velocity and depth analyses, Henry suggested the group decide on “preferred” ranges based on habitat requirements identified in the fish and mussel spreadsheets. Once these ranges have been selected, analyses would focus on using the unsteady state model to depict the frequency at which velocity and depth are within those ranges, based on various spillway release scenarios, typical generation operations, and average water year conditions. Henry pointed out that the model outputs for velocity represent an average channel velocity for the entire transect, potentially masking the presence of higher and lower-velocity regions that occur within the transect. As such, Henry explained that the group may need to perform field measurements and observations once the potential minimum flow scenarios have been selected.

The group discussed the need to narrow down the number of transects that will be analyzed based on the proposed methodology. Henry suggested that the group limit its analysis on transects 1-9 and focus on transect 1-7. Henry also suggested that since multiple transects are located in pool sections that exhibit fairly constant characteristics under various flow scenarios, the group might select one pool transect to analyze rather than several.

Stan Cook stated that he would like to meet with his resource personnel to develop recommendations for transects and flow scenarios to be analyzed.

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One member suggested that the group investigate the impact of flow reversal and determine if it is detrimental and should be considered as an important factor. It was also suggested that the group consider some form of riparian buffer along the bypass to restrict development. Others noted that such a buffer would not be feasible since a majority of the land adjacent to the bypass is privately owned.

Conclusion

The next meeting of the Weiss Bypass Working Group will be held on March 19, 2003 in Birmingham. All meeting materials for the Working Group will be placed on the website at <http://www.southerncompany.com/alpower/hydro/home>.

**E10 – Weiss Bypass Working Group
Meeting Summary: June 18, 2003**

Final 08-21-03

Meeting Location – APC Corporate Headquarters – Birmingham, AL

Warrior and Coosa Relicensing Projects Combined

Work Group Members

Jim Crew – APC	Stan Cook – ADCNR	Dan Catchings – ADCNR
Ralph Thompson - USFWS	Malcolm Pierson - APC	Jim Lochamy - APC
Ashley McVicar – APC	Steve Rider – ADCNR	Jon Hornsby - ADCNR
Andy Sheppard – APC	Henry Mealing – KA	

Other Attendees

Larry Goldman - USFWS	Patric Harper - USFWS	Ed Tyberghein - APC
Scott Mettee – ALGS	Jason Moak – KA	Shane Boring - KA

Via phone: Kelly Schaeffer – KA, Steve Kartalia - FERC

Action Items

- Post February 19, 2003 meeting notes on website
Jason Moak: Due – July 17, 2003
- Prepare and distribute meeting summary to working group members
Jim Crew: Due – July 17, 2003
- Compare model outputs to field measurements of velocity for Transect 1
Ashley McVicar: Due – July 17, 2003

Meeting Notes

These notes summarize the major items discussed during the meeting and are not intended to be a transcript or analysis of the meeting.

Introductions and Work Group Background

Jim Crew began the meeting by asking if any members had comments on the February 19, 2003 meeting notes. Jim also reviewed the group's progress to date. Jim then reviewed the Weiss Bypass Proposal, and Henry Mealing reviewed the proposed analysis method for the HEC-RAS data.

Ashley McVicar presented sample model outputs to the members. Ashley explained that, for the baseline (i.e., “no flow”) scenario, historical turbine operations and hourly discharge data for Terrapin Creek were used. The spill scenario was based on APC's “50% of Terrapin Creek” proposal, where the seven day average flow at Mayo's Bar was used to pick a spillway flow that is half of the same flow duration for Terrapin Creek. For example, if the seven day average flow at Mayo's Bar during the month of March falls within the 40th percentile, the spillway release would be set at whatever the corresponding 20th percentile flow is for Terrapin Creek.

Ashley explained that one of the graphs depicted the percent time that flows fall within acceptable ranges for target species. Henry noted that these ranges were based on the entire range of acceptable habitat for those target species, as described in the Preferred Habitat Memo.

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Model Questions

Some group members questioned whether the HEC-RAS model provides adequate resolution of habitat data. Specifically, some voiced concerns that since the model only shows the average velocity for an entire transect and not individual cells within the transect, microhabitat-level changes might be very difficult to discern. Ashley agreed to compare actual field measurements of individual cells to average transect velocities produced by the model to determine the level of variability within the transects. This could be done for Transect 1.

Stan Cook further explained ADCNR's proposal and indicated discomfort with using the HEC-RAS model to determine a starting point for minimum flow releases. Larry Goldman indicated he did not understand the proposed analysis methods and requested more time for review. Henry explained that the HEC-RAS model should be used as a tool to narrow the range of flow alternatives. Once this has been accomplished, the group could return to the Weiss Bypass to evaluate these alternatives prior to making any final decisions.

ADCNR personnel expressed concern that the HEC-RAS model will show large improvements in stream habitat with fairly minor increases in flow. They restated that their goal is to make the Weiss Bypass a river again.

APC recognized this position, but proposed to continue to utilize the HEC-RAS model as part of a scientific analysis of increased flows and resulting increases in stream habitat in the Weiss Bypass. The HEC-RAS model has also been useful in looking at the effects of the generation "back flow" in the Weiss Bypass. Henry pointed out that this type of analysis (flow vs. habitat) is the typical way that instream flow studies are performed.

Henry and Ashley committed to come up with a better way to present and explain the flow/habitat data generated by the HEC-RAS model for the next meeting.

Conclusion

The next meeting of the Weiss Bypass Working Group will be determined at a later date. APC will send meeting materials including an agenda and work products as well as meeting logistics to members in advance of the next meeting.

Working Group documents and materials are posted on the Internet at www.southerncompany.com/alpower/hydro.

**E10 – Weiss Bypass Working Group
Meeting Summary: August 21, 2003**

Final 12-01-03

Meeting Location – APC Corporate Headquarters – Birmingham, AL

Work Group Members

Jim Crew – APC
Patric Harper - USFWS
Ashley McVicar – APC
Andy Sheppard – APC

Stan Cook – ADCNR
Jim Lochamy – APC
Steve Rider – ADCNR
Jeff Garner – ADCNR

Dan Catchings – ADCNR
Bill Sim – APC
Jeff Powell – USFWS
Henry Mealing – KA

Other Attendees

Steve Kartalia – FERC
Jason Moak – KA

Alan Peebles – APC

Mike Akridge – APC

Action Items

- Post June 18, 2003 meeting notes on website
Jason Moak: Due – August 30, 2003
- Prepare and distribute meeting summary to working group members
Jim Crew: Due – September 5, 2003
- Provide Stan Cook with a summary of “habitat maximization” methodology
Ashley McVicar, Bill Sim: Due – September 8, 2003
- Provide Working Group members with a copy of Bill Sim’s presentation
Bill Sim: Due – September 8, 2003

Meeting Notes

These notes summarize the major items discussed during the meeting and are not intended to be a transcript or analysis of the meeting.

Introductions and Work Group Background

Jim Crew reviewed the Working Group’s progress to date and highlighted several issues on which the group has reached consensus. Jim noted that the group has agreed that some minimum flow is needed to enhance the aquatic resources in Weiss bypass, a natural-type flow regime is preferable, and long-term monitoring of the bypass will be necessary.

Jim Crew pointed out that the group is currently struggling with some tough issues that have slowed progress recently. Jim cited several reasons, that, out of necessity, have resulted in this slowdown, including the uniqueness of the Weiss bypass, the complexity of the flow model, and the multitude of potential flow scenarios. Jim stressed that, despite these difficulties, the Group must move forward to resolve these issues. Jim explained that he asked Steve Kartalia to attend the meeting to provide a FERC perspective on the relicensing process and issue resolution.

Steve Kartalia explained the differences between the traditional and alternative licensing processes. Steve pointed out that the Working Group appears to have the appropriate type of information on which to base a recommendation for minimum flows in the Weiss Bypass. Steve noted that FERC does not resolve conflicting minimum flow recommendations by “splitting the difference.” Rather, FERC examines the entire record of information, including

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model outputs, management goals, and personal observations, and selects an alternative that provides the most benefit for the cost. Steve stressed the importance of resolving issues at the local level, and pointed out that he is available as a resource for all stakeholders.

Bill Sim presented a proposal for a new method to determine minimum flow releases. Bill explained that his approach focused first on identifying the range of habitat needs (i.e., water depth and velocity) of riffle, run, and pool-dwelling fish species. Ashley McVicar then compared these ranges to HEC-RAS model outputs to determine what spillway minimum flow releases in combination with typical operations would provide the desired habitat characteristics for the maximum amount of time in the upper section of Weiss bypass. Ashley's analysis identified target flows ranging from 100 to 300 cfs as sufficient to maximize preferred habitat. Ashley noted that, below 100 cfs, velocities begin to fall outside of preferred ranges, and above 300 cfs, riffle sections become too deep.

Bill explained that these flow ranges were compared with the 50% flow duration (median flow) at Mayo's Bar to determine a "percentage" for each month. This "percentage" would then be applied to the 7-day average real-time flow at Mayo's Bar to determine the spillway flow for the Weiss Bypass. Bill presented slides showing what the hydrograph for Weiss bypass would look like for a typical water year (2001). Bill explained that his proposed scenario would come very close to matching Terrapin Creek flows. Ashley pointed out that this scenario may have one drawback in that certain "flashy" type flood flows would be difficult to mimic when using a 7-day average, but some sort of allowance could be made to address this situation. Bill's presentation included video footage of several bypass transects at the 50 cfs and 540 cfs.

The Group discussed the potential for an adaptive management plan. Stan Cook (ADCNR) indicated that he is open to considering Bill's proposal, as long as there is some component in the new license that provides an opportunity to assess the success of the initial flow scenario and make adjustments to the flow as deemed appropriate and evaluate the adjustments. All agreed that adjustments to the flow based on management goals should be the basis of adaptive management. Bill noted that an adaptive management plan would need to allow a full hydrologic cycle (14 – 18 years) to occur before success is evaluated. Stan requested that Ashley and Bill provide a written summary showing how the 100 to 300 cfs flow range was determined.

The Group discussed the potential need for an additional float trip on the bypass at a 100 cfs spillway release. All agreed that this is a possibility since some new members have not had the opportunity to view the bypass during a release flow. The Group will discuss the need for this for later in the year as appropriate.

Conclusion

The next meeting of the Weiss Bypass Working Group will be determined at a later date. APC will send meeting materials including an agenda and work products as well as meeting logistics to members in advance of the next meeting.

Working Group documents and materials are posted on the Internet at www.southerncompany.com/alpower/hydro.

**E-10 – Weiss Bypass Work Group
Meeting Summary: November 12, 2003**

Revision 11-30-03

Meeting Location – APC – Birmingham Offices

Work Group Members

Jim Crew	APC	Steve Rider	ADCNR	Jeff Powell	USFWS
Henry Mealing	KA	Stan Cook	ADCNR	Jim Lochamy	APC
Andy Sheppard	APC	Larry Goldman	USFWS	Dan Catchings	ADCNR
Ashley McVicar	APC	Malcolm Pierson	APC	Bill Sim	APC
Kelly Schaeffer	KA				

Other Attendees

Ed Tyberghein	APC	Jason Moak	KA	April Hall	ARA
Jon Hornsby	ADCNR	Shane Boring	KA	Keith Floyd	ADCNR
Jason Redmond	APC	Viki Jenkins	APC		

Action Items

- Literature Review of existing Weiss Bypass Data
Henry Mealing and Jason Moak
Dec. 20, 2003
- Provide Examples of Adaptive Management Approaches
Kelly Schaeffer and Jason Moak
Dec. 20, 2003
- Develop Agency Goals to meet in Weiss Bypass
ADCNR and USFWS
January 14 or 15, 2004
- Develop Monitoring Plan for Weiss Bypass
Malcolm Pierson, Henry Mealing, and Independent consultant
end of February 2004
- Draft Adaptive Management Plan or Approach
Weiss Bypass Working Group members
end of March 2004

Meeting Notes

These notes summarize the major items discussed during the meeting and are not intended to be a transcript or analysis of the meeting.

Jim Crew opened the meeting by reminding the group that we have less than a year to develop an agreement if it is to be filed with the license application and as part of the Applicant Prepared Environmental Assessment (APEA). Kelly then reviewed the options for the NEPA document (i.e., the APEA) that APC will file in July 2005.

NEPA Requirements

NEPA requires that the Environmental Assessment (EA) include:

- A discussion of the affected environment;
- A discussion and analysis of the alternatives; and
- A discussion of the environmental effects or consequences as a result of the project alternatives.

The EA would also contain a finding of “no significant impact” or “finding of significant impact”, which would then require the preparation of an environmental impact statement.

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The APEA that APC will prepare and which will be reviewed by stakeholders may contain the following elements:

- A “consensus based” proposal, which would virtually be a Settlement Agreement.
- Multiple competing recommendations -- “APC’s proposal versus the Agency proposal”.
- The EA can also contain a plan that includes an Adaptive Management Plan as part of the proposed operating scenario.

Adaptive Management Plan

The basic things that an Adaptive Management Plan (AMP) needs are:

1. Determine the goals for the resource. What are we trying to accomplish in the Weiss Bypass through additional flows? APC, USFWS, ADCNR have different perspectives. * (The group members agreed to have this completed by mid-January 2004.)
2. Method to test or evaluate flows.
3. Ability to change based on evaluation

The group agreed to shift their focus to working on the AMP since we are in some disagreement on how to exactly determine the “starting flow” for the Weiss Bypass.

The Group identified several items to develop as part of the AMP:

- develop an implementation schedule
 - how to handle dispute resolution
 - establish monitoring criteria – this might best be developed by a smaller independent group
- key species of focus – T&E species, fish, mussels, snails, etc.
- develop an accurate baseline as the first step – collect data on fish, mussel, invertebrate, water quality, etc.
 - determine how often to collect evaluation data
 - plan for on-going consultation
 - What are the AMP goals
 - What are realistic thresholds for measuring enhancements to determine success?
 - Is there a target when we can say we have met the goal.

Based on requests from group members, Kelly agreed to distribute examples of adaptive management approaches used at other FERC projects.

Monitoring Plan

If APC wanted to collect baseline data in 2004, how fast can we develop through goals and monitoring plan? Group members proposed that APC consult with an independent party, such as Elise Irwin (Auburn) or Scott Metee (GSA) regarding monitoring in 2004.

Group members stated that a concise literature review would be helpful for formulating the AMP goals. Kleinschmidt will pull together the existing information for the Weiss Bypass by Dec. 20, 2003 and send it out to the group.

The group asked if there are existing examples of another project where an AMP was successful. Kelly will get copies of other AMP’s available through the FERC.

Each agency agreed to determine “what is success for their agency” and bring that back to the group at a January 14 or 15, 2004 meeting.

The group will focus on working out an Adaptive Management Plan (or approach) by the end of March 2004.

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Meeting Summary: November 12, 2003**

Revision 11-30-03

Conclusions

APC will schedule the next meeting of the Weiss Bypass Working Group for January 14 or 15, 2004. APC will send meeting materials including an agenda and work products as well as meeting logistics to members in advance of the next meeting.

Working Group documents and materials are posted on the internet at www.southerncompany.com/alpower/hydro.