134 FERC ¶ 62,123
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

PPL Montana, LLC Project No. 1869-054

ORDER APPROVING FIVE-YEAR RESERVOIR MONITORING PLAN

(February 9, 2011)

1. On June 22, 2010, PPL Montana, LLC, licensee for the Thompson Falls Project, filed its Five Year Reservoir Monitoring Plan (plan), pursuant to the Commission's Order Approving Construction and Operation of Fish Passage Facilities (passage order)[1] and term and condition 5a of the U.S. Fish and Wildlife Service's (FWS) Biological Opinion.[2] The Thompson Falls Project is located on the Clark Fork River in Sanders County, Montana.

LICENSE REQUIREMENTS AND BACKGROUND

2. The Commission's passage order requires the licensee to follow the FWS' terms and conditions numbers 1 through 7 in order to be exempt from the take prohibitions of Section 9 of the Endangered Species Act (ESA). Term and condition 5a of the FWS' Biological Opinion requires, in part, that the licensee conduct a prioritized 5-year evaluation of factors contributing to the potential loss or enhancement of migratory bull trout passage through the Thompson Falls Reservoir. At a minimum, the plan objectives should focus on gaining a better understanding of temperature and water current gradients through the reservoir, movement and residency patterns of juvenile and sub-adult bull trout, and impacts of nonnative predators on juvenile and sub-adult bull trout.

LICENSEE'S PLAN

3. The goal of the licensee's plan is to gather information that will assist in developing recommendations to maximize survival of out-migrant juvenile and adult bull

[1] 126 FERC ¶ 62,105 (February 12, 2009).

[2] Filed with the Commission on November 4, 2008.

trout through the reservoir. To achieve this, the licensee proposes two key objectives: 1) characterization of bull trout in the Thompson River drainage (drainage), and 2) characterization of the influence of the Thompson Reservoir (reservoir) on bull trout emigrating from the drainage (or elsewhere upstream) and migrating downstream in the Clark Fork River. After information is gathered to address these objectives, the licensee will consult with the Technical Advisory Committee (TAC) and FWS to develop study or resource recommendations for implementation from 2016 to 2020.

4. To address the first objective, the licensee will coordinate with the TAC and FWS to review historic data and literature and identify data gaps to develop an annual work/study plan for data collection in the drainage. Potential study topics that could be investigated include: characterization of bull trout life stages; comparison of migratory and resident life histories; determining movement patterns and habitat use; assessing the carrying capacity of the drainage; and conducting population assessments.

5. To address the second objective, the licensee composed a general list of tasks, which emphasize study on the local bull trout population (those fish most likely to be negatively impacted by the dam and reservoir). The task list may be modified if it is determined through study that there are differential impacts to the local population and those populations further upstream in the Clark Fork River, which may share reservoir habitats as they migrate. The licensee's potential first priority tasks will focus on: evaluating juvenile bull trout movement patterns, residence time, and habitat use in the drainage; evaluating the timing and seasonality of outmigration; determining if the reservoir influences migrating life history stages; estimating the loss of out-migrating juvenile bull trout to predation; and determining the feasibility of tagging juvenile bull trout. The licensee will complete further tasks based on guidance from the TAC and FWS. These secondary tasks include: studying overlap of northern pike and bull trout movement patterns in the reservoir, evaluating the movement, population size, life cycle, and angler harvest of northern pike; and an evaluation of predators in the reservoir.

6. As data is gathered and a better understanding of juvenile outmigration and bull trout movement is formed, the licensee will consult with the TAC and FWS to evaluate the possibility of modifying project operations under the current license constraints. Within the 2010 to 2015 work period, the licensee will consult with the TAC and FWS to develop specific annual adaptive management work plans that outline study objectives, methodologies, and schedules. Annual work plans will be based on information gained the previous year and a reevaluation of steps necessary to address each objective.

7. The annual report to the Commission will include a summary of activities performed that year and proposed for the next, as well as baseline fisheries data (including spring time electrofishing and fall gillnetting series in the reservoir). These reports are due to the Commission each April 1. The licensee will collaborate with the TAC and FWS to develop a comprehensive report, due to the FWS by December 31, 2015. The comprehensive report will detail a summary of conclusions based on research

conducted from 2010 to 2015, provide recommendations for improving emigrating juvenile bull trout survivorship, and include a schedule for implementing those recommendations for the 2016 to 2020 study period. Since Montana Fish, Wildlife and Parks (MFWP) manages most of the state's fisheries, any recommendations to implement a fisheries management plan for the reservoir will have to be coordinated with MFWP. By 2020, the licensee will analyze all of the available data and submit a report to the FWS regarding the implementation of all recommendations and their effect on juvenile bill trout survival in the reservoir. Additionally, the licensee will collaborate with the TAC and FWS to identify the site specific need for a nonnative species control program in the reservoir. This information will be submitted to the Commission by December 31, 2015, either included in the conclusions and recommendations of the 5-Year Reservoir Monitoring Plan, or as a standalone document.

AGENCY CONSULTATION

8. The licensee developed the plan in consultation with the TAC and FWS. On March 23, 2010, the licensee met with the TAC, including representatives from the MFWP and FWS. On June 17, 2010, the FWS approved the plan without comment.

DISCUSSION

9. The licensee's plan describes how it will comply with the Commission's passage order and FWS' Biological Opinion term and condition 5a. Specifically, the plan details the licensee's priorities for evaluating factors contributing to the potential loss or enhancement of migratory bull trout passage through the Thompson Falls Reservoir from 2010 to 2015. The licensee's plan addresses the requirements of the Commission's passage order and should be approved.

The Director orders:

(A) The Five Year Reservoir Monitoring Plan filed on June 22, 2010, by PPL Montana, licensee for the Thompson Falls Project, is approved.

(B) This order constitutes final agency action. Any party may file a request for rehearing of this order within 30 days from the date of its issuance, as provided in section 313(a) of the Federal Power Act, 16 U.S.C. § 8251 (2006), and the Commission's regulations at 18 C.F.R. § 385.713 (2010). The filing of a request for rehearing does not

operate as a stay of the effective date of this order, or of any other date specified in this order. The licensee's failure to file a request for rehearing shall constitute acceptance of this order.

Thomas J. LoVullo
Aquatic Resources Branch
Division of Hydropower Administration
and Compliance

Document Content(s)

PPL Montana, 45 Basin Creek Road, Butte, Montana 59701

PPL MONTANA, LLC

PPLM-Thompson Falls-2604

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

June 17, 2010

RE: Filing Thompson Falls (Project No. 1869) 5-Year Reservoir Monitoring Plan

Dear Secretary Bose:

On February 12, 2009 the Commission issued an Order Approving Construction and Operation of Fish Passage Facilities for the Thompson Falls Hydroelectric Project (No. 1869). Enclosed is the Thompson Falls (Project No. 1869) 5-Year Reservoir Monitoring Plan required by this Order and USFWS Biological Opinion Term and Condition #5a. PPL Montana developed this Plan in consultation with MFWP, MDEQ, CSKT and the USFWS. Signature of approval for this plan from USFWS is included on page 2.

Sincerely,

Jon Jourdonnais
Manager Hydro Licensing and Compliance

Enclosure

cc: Andy Welch, MDEQ
Wade Fredenberg, USFWS
Tim Bodurtha, USFWS
Mark Wilson, USFWS
Jon Hanson, MFWP
Ladd Knotek, MFWP
Craig Barfoot, CSKT
Brent Mabbott, PPLM
Frank Pickett, PPLM
Gordon Criswell, PPLM
Dave Kinnard, PPLM
Ginger Gillin, GEI
Kristi Webb, MMI

By signature below, the USFWS approves this Thompson Falls 5-Year Reservoir Monitoring Plan (2011-2015) filing with the Commission.

R. Mark Wilson
Name

R. Mark Wilson
USFWS Position

June 17, 2010
Date

Thompson Falls Hydropower Project
FERC Project Number 1869

5-Year Reservoir Monitoring Plan
2011-2015

Public

Submitted to:
Federal Energy Regulatory Commission
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1.0 Introduction

1.1 Background

PPL Montana is owner and operator of Thompson Falls Dam (No. 1869), located on the Clark Fork River near Thompson Falls, Montana. The current Federal Energy Regulatory Commission (FERC or Commission) License was issued in 1979 and will expire December 31, 2025.

In 1998, the bull trout (*Salvelinus confluentus*) was federally listed under the Endangered Species Act (ESA) as a threatened species (Federal Register, 1998); and critical habitat was designated in 2005 (Federal Register, 2005). Because bull trout are present within the Project area, a draft Biological Evaluation was prepared for the Thompson Falls Project and submitted to the U.S. Fish and Wildlife Service (USFWS or Service) and the Commission in 2003.

After 5 years of study and consultation with agencies and CSKT, PPL Montana filed a new Biological Evaluation discussing the effects of the Thompson Falls Project on bull trout and proposed conservation measures with the Commission on April 7, 2008. PPL Montana's Biological Evaluation identified several factors directly related to project operation that negatively impact bull trout in the Clark Fork River. Blockage of upstream migration and access to spawning habitat caused by the Thompson Falls Dam was identified as a major concern. Consequently, PPL Montana proposed to install a full height fishway at the Thompson Falls Project and filed 90-percent drawings for the structure on April 7, 2008. The filing also contained a Memorandum of Understanding (MOU) signed by PPL Montana, the Confederated Salish and Kootenai Tribes of the Flathead Nation (CSKT), Montana Fish, Wildlife and Parks (MFWP), and USFWS (MOU, 2008).[1]

The Commission concluded that the Thompson Falls Project is adversely affecting bull trout and the proposed conservation measures will reduce, but not totally eliminate, the Project's adverse effects on bull trout. The 2008 Biological Evaluation was adopted as the Commission's final Biological Assessment and submitted to the USFWS on May 1, 2008.

On November 4, 2008 the USFWS filed with the Commission a Biological Opinion and associated incidental take statement, which includes reasonable and prudent measures and Terms and Conditions to minimize incidental take of bull trout. The USFWS concluded in its Biological Opinion that the Thompson Falls Project is currently adversely affecting bull trout and PPL Montana's proposed conservation measures will reduce, but not totally eliminate, adverse impacts of the Thompson Falls Project.

On February 12, 2009 the Commission issued an Order Approving Construction and Operation of Fish Passage Facilities for the Thompson Falls Hydroelectric Project. This order included the

[1] The MOU provides Terms and Conditions regarding the collaboration between the Licensee and the USFWS, MFWP, and CSKT and the implementation of minimization measures for bull trout.

reasonable and prudent measures, Terms and Conditions, and conservation recommendations from the FWS's Biological Opinion.

1.2 Compliance with the FERC Order

The February 12, 2009 Commission Order requires PPL Montana to file a 5-Year Reservoir Monitoring Plan, referenced in Term 5a of the USFWS's Biological Opinion Terms and Conditions:

> *During the first five years of the Phase 2 evaluation (2010 through 2015) PPL Montana, with TAC involvement and Service approval, will conduct a prioritized 5-year evaluation of factors contributing to the potential loss or enhancement of migratory bull trout passage through Thompson Falls Reservoir. Goals and objectives for this assessment and scientifically-based methodology will be developed through the TAC and approved by the Service no later than the end of 2010 and will focus at a minimum on better understanding temperature and water current gradients through the reservoir; travel time, residence time, and pathways that juvenile and subadult bull trout select in moving through the reservoir; and an assessment of impacts of predatory nonnative fish species on juvenile and subadult bull trout residing in or passing through the reservoir. The initial findings will be summarized and supported with scientifically based conclusions, no later than the end of 2015, with a goal of adaptively improving survival of juvenile bull trout in Thompson Falls Reservoir as they pass downstream or reside in the system. A second, more comprehensive summary of conclusions and recommendations regarding reservoir impacts will be submitted as part of the scientific review package by the end of 2020 (see TC1h).*

The 5-Year Reservoir Monitoring Plan must be developed with the TAC and approved by the USFWS. PPL Montana met with the Thompson Falls TAC subcommittee, including representatives from USFWS and MFWP, on March 23, 2010. The TAC subcommittee developed and agreed to the following elements of the 5-year Reservoir Monitoring Plan from 2010 through 2015.

2.0 5-Year Reservoir Monitoring Plan

2.1 5-Year Reservoir Monitoring Plan

The goal of the 5-year Reservoir Monitoring Plan is to gather information that will assist in developing recommendations to *maximize survival of outmigrant juvenile and adult bull trout through Thompson Falls Reservoir and Dam*. PPL Montana proposes the next 5-years focus on two key objectives:

1) *Characterization of bull trout in the Thompson River drainage.*
2) *Characterization of the affect that Thompson Reservoir has on bull trout emigrating from the Thompson River drainage (or elsewhere upstream, as these are not necessarily separable) and migrating downstream in the Clark Fork River.*

After more information is gathered to address the two objectives listed above, PPL Montana will consult with the TAC and USFWS to develop study or resource recommendations for implementation from 2016 through 2020.

2.1.1 Characterize Bull Trout in Thompson River

The first objective will be to characterize the present bull trout population in the Thompson River drainage. Due to the geographic proximity of the Thompson Falls Dam to the Thompson River and the duration that the Thompson Falls Dam has served as a fish barrier, the Thompson Falls Dam has likely had the greatest impact on bull trout in the Thompson River drainage. Additionally, there is assumed to be a large enough bull trout population present in the Thompson River drainage that will provide a reasonable sample size to study and gather more data to address the overall goal: *maximize survival of outmigrant juvenile and adult bull trout through Thompson Falls Reservoir and Dam.*

PPL Montana will coordinate with the TAC and USFWS to review available historic data, available literature, identify data gaps, and develop an annual work/study plan for data collection in the Thompson River drainage. After data gaps are identified, PPL Montana will coordinate with the TAC and USFWS to develop annual work plans for data collection in the Thompson River drainage. Studies on bull trout in the Thompson River drainage may include, but are not limited to the following:

- Characterization of the bull trout life stages and estimation of the number/proportion of migratory versus resident bull trout in drainage;
- Evaluation of whether there are fluvial or resident adult bull trout that do not outmigrate from the drainage;
- Characterization of bull trout moving within the Thompson River drainage versus bull trout moving out of Thompson River drainage;
- Calculation of the potential carrying capacity for bull trout in the Thompson River drainage;

- Identification of limiting factors for reaching carrying capacity (e.g. physical, chemical, predation, anthropogenic, etc.) in the Thompson River drainage;
- Calculation of juvenile bull trout population estimate in the Thompson River drainage;
- Enumeration of juvenile bull trout outmigrants leaving the Thompson River drainage;
- Characterization of juvenile bull trout emigration route(s) (e.g. percentage moving downstream to Thompson Falls Dam or upstream in Clark Fork River);
- Estimation of fecundity through average size of adult bull trout sampled in the Thompson River drainage;
- Genetic characterization of bull trout in the Thompson River drainage;
- Estimation of annual survivorship in the Thompson River drainage;
- Annual bull trout redd surveys in the Thompson River drainage;
- Identification of bull trout occupying habitat in the Thompson River drainage;
- Identification of potential bull trout spawning habitat and currently used spawning habitat in the Thompson River drainage; and
- Stream core sampling in bull trout spawning reaches in the Thompson River drainage.

2.1.2 Characterize Thompson Falls Reservoir Affect on Emigrating Bull Trout

The second objective will be to characterize the influences that the Thompson Falls Reservoir may have on emigrating bull trout. Through continued consultation with the TAC and USFWS, PPL Montana has generated a list of tasks to address the second objective. Because the Thompson River bull trout local population is the one most likely to be negatively affected by the dam and reservoir (proximity), it is that population which will be emphasized and evaluated, but in the process of doing so we anticipate learning more about potential migrants from and to other local populations further upstream in the Clark Fork River that may share the Thompson Falls Reservoir habitat. At this time, there is nothing to suggest that differential impacts would occur to other populations, but if we determine otherwise, adjustments can be made to future monitoring efforts. The general list of tasks below may be selectively modified by PPL Montana in consultation with the TAC and USFWS as new information and data are gathered between 2010 and 2015.

First priority tasks, include, but are not limited to:

- Evaluate movement of juvenile bull trout in Thompson River drainage and timing of outmigration;
- Estimate the proportion of juvenile bull trout that migrate upstream or downstream (in the Clark Fork River) once they have left the Thompson River drainage;
- Utilize outmigration data to design a sampling protocol, if feasible, to monitor juvenile outmigration movement through the Thompson Falls Reservoir;
- Evaluate outmigration movement in the Thompson Falls Reservoir to determine if the reservoir is influencing bull trout migrating life history stages;

- Evaluate whether bull trout movement in the Thompson Falls Reservoir is seasonal;
    - An example study may include tagging adult bull trout at the fish ladder and tracking movement and residence time through the Thompson Falls Reservoir;
- Consider feasibility to tag juvenile bull trout with juvenile salmonid acoustic tags (JSAT);
    - Example of methodology may include capturing bull trout emigrating from Thompson River to Thompson Falls Reservoir;
- If feasible to evaluate juvenile bull trout movement through the Thompson Falls Reservoir, also consider the evaluation of habitat use in the Thompson Falls Reservoir and determining if there is potential overall for competition with other species or predation losses;
- Estimate, if feasible, loss of juvenile bull trout outmigrating to predation loss;
- Evaluate movement patterns of juvenile bull trout outmigrating into, through, and out of the Thompson Falls Reservoir; and
- Estimate residence time of juvenile bull trout outmigrating downstream through the Thompson Falls Reservoir;

A secondary list of tasks may be completed between 2010 and 2015 based on TAC and USFWS input. These include, but are not limited to:

- Conduct a study of northern pike seasonal use concurrent with the evaluation of movement patterns of juvenile bull trout in the Thompson Falls Reservoir;
    - Northern pike would be tracked through radio tagging or some similar method to determine the degree of habitat overlap with bull trout;
- Estimate northern pike population (actual or trend) based on some scheduled interval (annual, every third year, etc.);
- Evaluation northern pike movement (location of mark and recapture);
- Evaluation of northern pike harvest through angler reports of marked fish;
- Characterize the life cycle of northern pike population in the Thompson Falls Reservoir, including, but not limited to identifying spawning locations, juvenile rearing habitat;
- Evaluation of predators (e.g. northern pikeminnow, northern pike, largemouth bass, smallmouth bass);
    - Sampling predators for information such as stomach samples; and
    - Utilize annual sampling (fall gillnetting) to provide an index for population.

Annual baseline fisheries data, including spring time electrofishing and fall gillnetting series in the Thompson Falls Reservoir will be reported in the annual report to the Commission and the data will be available to the TAC and USFWS to augment an evaluation of reservoir predators in support of the 5-Year Reservoir Monitoring Plan.

As additional data are gathered and a better understanding of juvenile outmigration from the Thompson River drainage and bull trout movement through the Thompson Falls Reservoir, PPL

Montana will consult with the TAC and USFWS to evaluate potential for modifications to Thompson Falls Reservoir operations under existing License constraints.

2.1.3 Annual Work Plans

Within this 5-year period, PPL Montana will consult with the TAC and USFWS to develop specific annual adaptive management work plans that outline study objectives, methodologies, and schedules. Annual work plans will be based on information gained the previous year and reevaluation of steps necessary to address each objective.

2.2 Reporting to the Commission

PPL Montana will include a summary of annual activities and proposed activities in each Annual Report submitted to the Commission between 2010 and 2015 in support of the 5-Year Reservoir Monitoring Plan. PPL Montana will submit this report annually, by April 1 of each year in compliance with the Commission Order and Term 7a of the Biological Opinion.

In compliance with the Commission Order and Term 5a of the Biological Opinion, PPL Montana will compile, analyze, and summarize data collected from 2010 through 2015 and submit a comprehensive report to the USFWS for approval no later than December 31, 2015. This report to USFWS will include a summary of conclusions and recommendations for improving emigrating juvenile bull trout survivorship. PPL Montana will collaborate with USFWS and the TAC to develop recommendations for improved juvenile bull trout survival based on data collected from 2010 through 2015. The recommendations developed in 2015 will include a schedule for implementation between 2016 and 2020. Because MFWP manages most of the state's fisheries, any recommendation to implement a fisheries management plan, including any measure to control predators, for the Thompson Falls Reservoir will have to be coordinated with MFWP. By 2020, PPL Montana will analyze available data and submit a report to USFWS regarding the implementation of all recommendations and their effect on juvenile bull trout survival in the Thompson Falls Reservoir.

Additionally, PPL Montana will also submit a report to the Commission that identifies site specific need for a nonnative species control program in the Thompson Falls Reservoir by December 31, 2015 in compliance with the Commission Order and Term 5b of the Biological Opinion:

> *Based on the interim Thompson Falls Reservoir Assessment (Term 5a), a timely evaluation of the site specific need for a nonnative species control program in Thompson Falls Reservoir will be conducted by PPL Montana, in collaboration with the TAC agencies (see Term7b), no later than the end of 2015, with final recommendations to be approved by the Service.*

The report will either be included in the conclusions and recommendations in the 5-Year Reservoir Monitoring Plan or a standalone document. The development of this plan will be coordinated with the TAC and USFWS.