LOW-IMPACT HYDROPOWER POWER INSTITUTE CERTIFICATION APPLICATION

CHESTER DIVERSION HYDROELECTRIC PROJECT
(FERC NO. 11879)

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LOW-IMPACT HYDROPOWER POWER INSTITUTE CERTIFICATION APPLICATION

CHESTER DIVERSION HYDROELECTRIC PROJECT
(FERC NO. 11879)

1.0 FACILITY DESCRIPTION

The Chester Diversion Dam (FERC No. 11879) (Project) is located on the Henry's Fork of the Snake River in Fremont County, Idaho (Figure 1 and Figure 2). The Project's hydroelectric facilities are owned and operated by the Fall River Rural Electric Cooperative (Fall River or Licensee) while the Project dam is owned by the Freemont Madison Irrigation District.

FIGURE 1 OVERVIEW OF CHESTER DIVERSION HYDROELECTRIC PROJECT

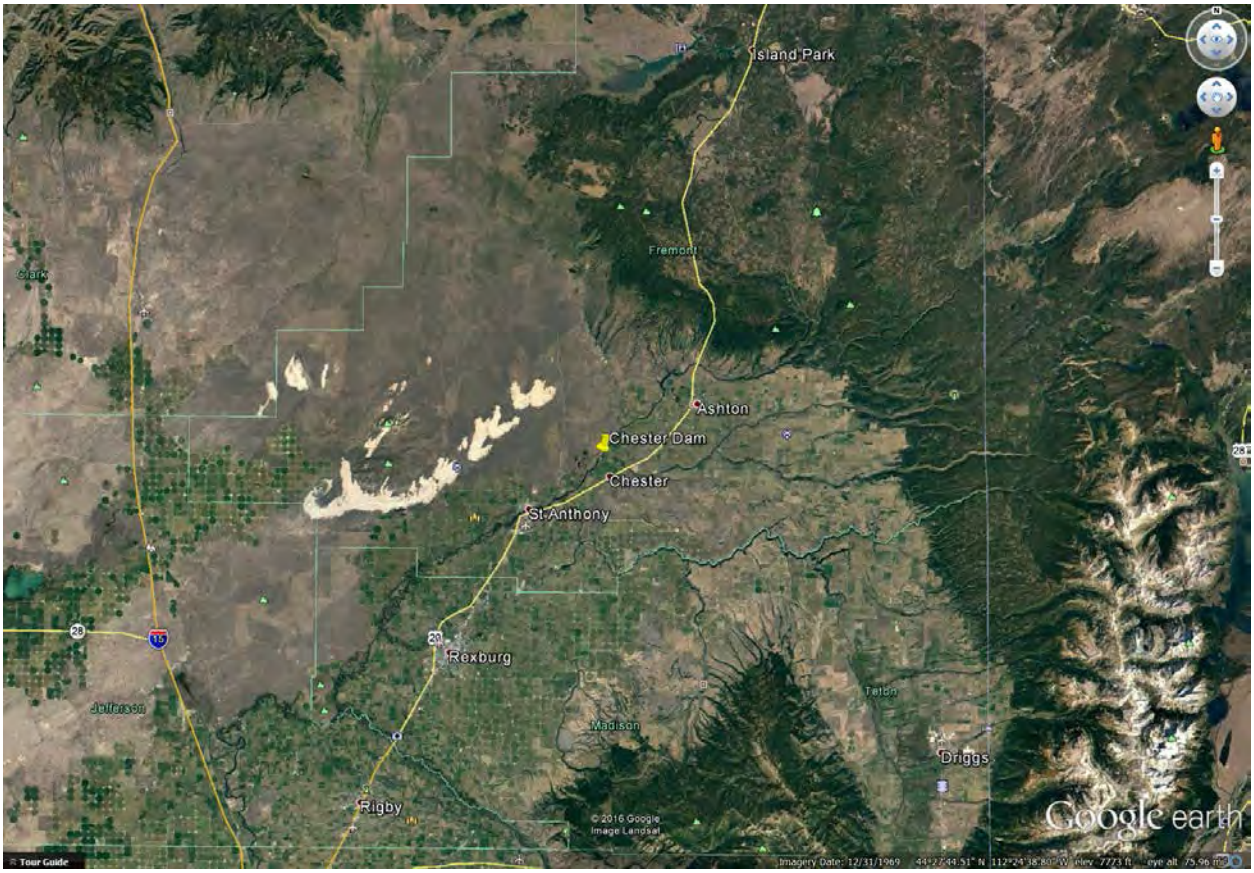

FIGURE 2 GEOGRAPHIC OVERVIEW OF CHESTER DIVERSION HYDROELECTRIC PROJECT LOCATION

The Chester Diversion Dam (also known as the Cross Cut Diversion Dam) and associated Cross Cut Irrigation Canal were constructed in 1938 by the U.S. Department of the Interior, Bureau of Reclamation (BR) as part of its Minidoka Project. On September 10, 2004, the BR transferred, by quitclaim deed, the title to the Chester Diversion Dam, portions of the Cross Cut Irrigation Canal, and related tracts of land to the Fremont-Madison Irrigation District. The ownership, operation, and maintenance of the dam, irrigation canal, and related lands are entirely under non-federal control. Under a November 16, 2007 MOU established between the Licensee and Fremont Madison Irrigation District, Fall River is allowed to utilize the Chester Diversion Dam for the purposes of producing hydroelectric generation. Fall River is responsible for paying all costs associated with the engineering, construction, operation and maintenance of the hydroelectric project.

On July 23, 2008 the Federal Energy Regulatory Commission (FERC) issued a 40-year license for the Project. The 2008 FERC License incorporates measures stipulated within a November 9,

2007 Settlement Agreement established between the Licensee and U.S. Department of Agriculture - Forest Service (USFS), U.S. Department of Interior - Fish and Wildlife Service (USFWS), Idaho Department of Fish and Game (IDFG), Idaho Department of Parks and Recreation (IDPR), Trout Unlimited (TU), the Henry's Fork Foundation, and the Greater Yellowstone Coalition. The purpose of the Settlement Agreement was to resolve among the signatories all issues regarding fish, wildlife, recreational, and aesthetic resources associated with issuance of the original Project License.

Facility Description

Prior to the construction of the hydroelectric facility, the existing Chester Diversion Dam facility consisted of a concrete gravity dam, one radial gate on the south end of the diversion structure to control flows into the Cross Cut Irrigation Canal and an additional smaller radial gate on the north side of the diversion structure to control flows into the Last Chance Irrigation Canal.

Construction of the hydroelectric facility components (inflatable rubber dam, concrete intake structure, sluiceway/logway, fish screens, headworks for irrigation canals, powerhouse, and transmission lines) began in 2009 and were completed in 2014. As described under the 2008 FERC License the Chester Diversion Hydroelectric Project consists of: 1) the Fremont Madison Irrigation District owned concrete dam with a crest length of 355 feet and a structural height of 17 feet; 2) a 38 inch-high inflatable rubber dam bolted to the crest of the dam, that, when inflated, creates a reservoir with a water surface elevation of 5,043.7 feet msl; 3) a 355 foot-long overflow spillway with a crest elevation of 5,040.5 feet msl; 4) a flow control structure located on the south side of the dam, with a radial gate that controls flows into the Cross Cut Irrigation Canal; 5) a flow control structure located on the north side of the dam with a radial gate that controls flows into the Last Chance Irrigation Canal; 6) a 50 foot-wide concrete intake structure on the south side of the spillway; 7) a sluiceway/logway adjacent to the intake structure on the south end of the spillway; 8) a 1.5 inch-spaced fish screen across the turbine intake and 0.25 inch-spaced fish screens across the entrances to both irrigation canals; 9) Cross Cut Irrigation Canal headworks; 10) Last Chance Irrigation Canal headworks; 11) 50 foot by 50 foot concrete powerhouse with three Kaplan-type turbine generator units with a combined capacity of 3.3 MW; 12) concrete wall located immediately below the powerhouse that directs flow to the center of the Henry's Fork; 13) a 15-Kilovolt primary transmission line; and 14) appurtenant facilities.

The project boundary incorporates the Chester Diversion Dam topped with the rubber dam, Chester Diversion Dam reservoir, lands associated with canal headworks, powerhouse, parking lot, upstream and downstream boat launches, and the primary transmission line.

Project Operation

The Project operates in a run-of-river mode. After irrigation needs are met, up to 3,500 cubic-feet per second (cfs) are diverted into the powerhouse for generation. Any flows greater than both irrigation and power needs spill over the Chester Diversion Dam. The Licensee provides a minimum flow of 25 cfs through the sluiceway/logway to allow for downstream fish passage.

TABLE 1 FACILITY DESCRIPTION INFORMATION FOR CHESTER DIVERSION DAM

Information Type	*Facility Description*
Name of the Facility:	• Chester Diversion Dam FERC No. 11879 (Project)
Location:	• Henry's Fork of the Snake River • Henry's Fork River Basin • Fremont County, Idaho, between the cities of Ashton and St. Anthony • The Project is located at 44° 1'6.04"N, 111°35'1.08"W
Facility Owner:	• Fall River Rural Electric Cooperative (Fall River or Licensee) • Mark Chandler, 1150 N 3400 E, Ashton, ID 83420, (208) 652-7051, Mark.Chandler@FallRiverElectric.com
Regulatory Status:	• The Chester Diversion Hydroelectric Project is a Major Project licensed as FERC No. 11879. The license was issued on July 23, 2008 and expires on July 23, 2048. The Project received a license amendment order on December 12, 2008. • On May 24, 2005 the Idaho Department of Environmental Quality (IDEQ) issued a Water Quality Certificate. The Certificate did not include any terms or conditions for the Project. o 2005 Water Quality Certificate http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=4368077 o 2008 FERC License: http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=13632019 o 2008 License Amendment: http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=13671578
Characteristics of the Power Plant:	• The Chester Diversion Dam was constructed in 1938 as part of the Minidoka Project by the U.S. Department of Interior, Bureau of Reclamation (BR) to provide water for irrigation. Construction for the Chester Diversion Hydroelectric Project (including construction of the inflatable rubber dam atop of the original Diversion Dam, concrete intake structure, sluiceway/logway, fish screens, headworks for irrigation canals, powerhouse, and transmission lines) began in 2009 and was completed in 2014. • The Project has a total authorized capacity of 3.3 MW. • The Project's average annual generation is estimated to be 16,800 MWh. The Project became fully operational in July 2015 and generated 3,711,821 kWh from July 2015 - December 2015. • The Project has three Kaplan-type turbine- generator units with a combined generating capacity of 3.3 MW (1.1 MW each). The minimum hydraulic capacity of each unit is 600 cfs while the maximum hydraulic capacity of each unit is 1,200 cfs. • The Project operates as a run-of-river facility for the protection of fish spawning in the Project area, as well as the maintenance of adequate water

Information Type	*Facility Description*
	in the Henry's Fork. • Construction of the Chester Diversion Hydroelectric Project (including construction of the inflatable rubber dam, concrete intake structure, sluiceway/logway, fish screens, headworks for irrigation canals, powerhouse, and transmission lines) began in 2009 and was completed in 2014. • No operational changes have occurred since the project became fully operational in July 2015. • No facility upgrades are planned at this time.
Characteristics of the Dam or Diversion:	• The Chester Diversion Dam was constructed in 1938. The inflatable rubber dam bolted to the crest of the original Diversion Dam was constructed in 2014. • The Chester Diversion Dam is 17-feet-high and has a 38-inch-high inflatable rubber dam bolted to its crest. • The spillway has a crest elevation of 5,040.5 feet msl and a hydraulic capacity of 150 cfs. The rubber dam has a crest elevation of 5,043.7 feet msl when inflated. • A concrete wall extends from the powerhouse along the tailrace to help guide the water back into the Henry's Fork. It also helps protect the shoreline along its length from erosion control. The tailwater elevation is 5,035.30 feet msl. • The Project has a 50-foot-wide concrete intake structure. The Project does not have penstock infrastructure. • The Project has flow control structures located within the Cross Cut Irrigation Canal and the Last Chance Irrigation Canal. Both canal intake structures have 0.25-inch-spaced fish screens to prevent entrainment into the canal intakes. Construction of the Chester Diversion Hydroelectric Project (including construction of the inflatable rubber dam, concrete intake structure, sluiceway/logway, fish screens, headworks for irrigation canals, powerhouse, and transmission lines) began in 2009 and was completed in 2014. • The Chester Diversion Dam was originally built to divert water into the Last Chace Irrigation Canal and the Cross Cut Irrigation Canal for irrigation use. Today the Chester Diversion Hydroelectric Project operates to supply water into irrigation canals and to generate power. • Water Source: Henry's Fork of the Snake River; Water Discharge Location for Hydroelectric Project: Henry's Fork of the Snake River (immediately below the Chester Diversion Dam).
Characteristics of Reservoir and Watershed:	• The Chester Diversion Dam is not used for storage; the Diversion Dam is only used to divert water into the powerhouse and adjacent irrigation canals. At a water surface elevation of 5,043.7 feet msl (when the 38-inch-high rubber dam is inflated), the reservoir has a maximum surface area of approximately 55 acres. • The maximum water surface elevation is 5,043.7 feet msl when the 38-inch-

Information Type	*Facility Description*
	high rubber dam is inflated. • There is no power pool present at this Project. • The Chester Diversion Dam is located at river mile (RM) 38.5 of the Henry's Fork. At the head of the Henry's Fork is Henry's Lake and the Henry's Lake Dam (Non-FERC). The Henry's Lake Dam is operated for water storage and irrigation purposes. Downstream of Henry's Lake is the Island Park Hydroelectric Project (FERC No. 2973) located at RM 91. The Island Park Dam is owned by the U.S. Bureau of Reclamation and the hydroelectric facility is owned and operated by Fall River Rural Electric Cooperative. The Island Park Reservoir is operated to deliver irrigation needs. The reservoir fills through the winter and spring and water is delivered to meet irrigation demands in the summer. The Licensee in collaboration with the Fremont Madison Irrigation District and the USBR aims to maintain flow releases between 170 cfs and 960 cfs to optimize power generation and minimize seasonal flow variations. The Ashton Hydroelectric Project (FERC No. 2381) located at RM 45 is owned and operated by PacifiCorp Energy. The Ashton Project is operated as a run-of-river facility and for the propose of power generation. Below the Chester Diversion Dam, the non-FERC Fun Farm Dam located at RM 35 and Del Rio Dam located at RM 33.7 exist for the purpose of diverting water into irrigation canals. The St. Anthony Hydroelectric Project (FERC No. 14552) (Egin Dam) located at RM 31.5, is the only hydroelectric project located on the Henry's Fork downstream of the Chester Diversion Dam. St. Anthony Hydro LLC owns and operates the St. Anthony Project as a run-of-river facility and for the purpose of supplying water to irrigation canals and for power production. • Additional upstream influences include the Grassy Lake Dam (Non-FERC), located on the Grassy Lake Reservoir and at the head of Fall River, owned and operated by the USBR for the purpose of meeting irrigation demands. And the Buffalo River Hydroelectric Project (FERC No. 1413) located upstream of the Henry's Fork on RM 1 of the Buffalo River. The Project is owned by Fall River Rural Electric Cooperative and is operated as a run-of-river facility for the purpose of power generation. • Water within the Henry's Fork River Basin is stored in Henry's Lake, Grassy Lake, and Island Park Reservoir for delivery to irrigated lands across the basin. Flow reaching Chester Diversion Dam is partially regulated by reservoirs and dams located in the upper reaches of the watershed. Please see Appendix A for a map of Henry's Fork Dams and Canal Diversion Locations. • Five irrigation canals (including Cross Cut Canal and Last Chance Canal) are located above the Chester Diversion Dam and six canals are located below the Dam. Averaged from 2011-2015, canals identified within the USBR's database have passed the following volumes of water per year: St. Anthony's Canal: 25,075.5 acre feet/yr (below Project); Egin Canal: 82,771.05 acre feet/year (below project); Twin Groves Canal: 27,278.64

Information Type	*Facility Description*
	acre feet/year (below Project); Independent Canal: 61,933.2 acre feet/yr (below Project); Consolidated Farmers Canal: 78,142.85 acre feet/yr (below Project); Rexburg Canal: 56,677.2 acre feet/year (below Project); Farmer's Friend Canal: 28,316.7 acre feet/year (above Project); Cross Cut Canal: 41,851.63 acre feet/yr (above Project). Please see Appendix A for a map of Henry's Fork Dams and Canal Diversion Locations. • The Project operates as a run-of-river facility and no operation agreements have been made with upstream or downstream facilities. The Project does operate under a 2007 MOU established with the Fremont-Madison Irrigation District (District), owner of the Chester Diversion Dam (http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=13560817). The MOU has provisions that require the Licensee to pay for all expenses occurred to the District by the Licensee and to ensure that hydroelectric project operations do not interfere with any diversions required by the District as authorized by its water rights. • The Project has an area of 108.63 acres within the FERC project boundary.
Hydrologic Setting:	• Average annual flow is measured 6.1 miles downstream of the Dam at USGS Gage No. 13050500 (Henry's Fork at St. Anthony at RM 32.4) and is 1,942 cfs. • Average monthly flows at the Dam as measured at USGS Gage No. 13050500 (Henry's Fork at St. Anthony at RM 32.4): o Oct: 1,409 cfs o Nov: 1,603 cfs o Dec: 1,568 cfs o Jan: 1,578 cfs o Feb: 1,591 cfs o Mar: 1,555 cfs o Apr: 2,159 cfs o May: 4,131 cfs o Jun: 3,324 cfs o Jul: 1,593 cfs o Aug: 1,434 cfs o Sept: 1,351 cfs • Relevant stream gauging stations above the facility: USGS Gage No. 13046000 (Henry's Fork near Ashton at RM 44.2) and USGS Gage No. 13049500 (Fall River Near Chester). Relevant stream gauging stations below the facility: USGS Gage No. 13050500 (Henry's Fork at St. Anthony at RM 32.4). • At Chester Diversion Dam, the Henry's Fork has a drainage area of 1,752 square miles as estimated by the U.S. Army Corps of Engineers' National Inventory of Dams (USACE 2007).
Designated Zones of Effect:	• Designated Zone of Effect #1: **Impoundment** • The Project impoundment inundates a maximum of 55 acres or approximately 1.4 miles of the Henry's Fork. The impoundment Zone of Effect (ZOE) encompasses the waters stretching from RM 39.9 (upstream

Information Type	*Facility Description*
	island) to RM 38.5 (Chester Diversion Dam) of the Henry's Fork. The impoundment also influences approximately 2,000 feet of the Fall River. The impoundment ZOE additionally encompasses waters stretching to RM 0.4 of the Fall River. • The waters located within the impoundment ZOE are classified as Riverine by the U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (USFWS 2016). • Designated uses for the Henry's Fork River and Fall River in this area, as determined by the IDEQ's 2012 Integrated Report are: Aesthetic; Agricultural Water Supply; Cold Water Aquatic Life; Domestic Water Supply; Industrial Water Supply; Primary Contact Recreation; Salmonid Spawning; Wildlife Habitat. • Designate Zone of Effect #2: **Downstream** • The downstream ZOE extends from the Chester Diversion Dam at RM 38.5 to the Fun Farm Dam RM 35 • Waters of the Downstream ZOE are classified as Riverine by the USFWS National Wetland Inventory (USFWS 2016). • Designated uses for the Riverine waters in this area, as determined by the IDEQ's 2012 Integrated Report are: Aesthetic; Agricultural Water Supply; Cold Water Aquatic Life; Domestic Water Supply; Industrial Water Supply; Primary Contact Recreation; Salmonid Spawning; Wildlife Habitat.
Additional Contact Information:	• Please see Section 4.0 for Project Contacts Forms.
Photographs of the Facility	• Please see Appendix A for photographs of key features of the facility, identification of each designated zone of effect (ZOE), and for as-built project drawings.

2.0 STANDARDS MATRICES

Impoundment ZOE

	Criterion	*Alternative Standards*				
		1	***2***	***3***	***4***	***Plus***
A	**Ecological Flow Regimes**	X				
B	**Water Quality**			X		
C	**Upstream Fish Passage**	X				
D	**Downstream Fish Passage**		X			
E	**Watershed and Shoreline Protection**	X				
F	**Threatened and Endangered Species Protection**		X			
G	**Cultural and Historic Resources Protection**		X			
H	**Recreational Resources**		X			

Downstream ZOE

	Criterion	*Alternative Standards*				
		1	*2*	*3*	*4*	*Plus*
A	**Ecological Flow Regimes**	X				
B	**Water Quality**			X		
C	**Upstream Fish Passage**		X			
D	**Downstream Fish Passage**	X				
E	**Watershed and Shoreline Protection**	X				
F	**Threatened and Endangered Species Protection**		X			X
G	**Cultural and Historic Resources Protection**		X			
H	**Recreational Resources**		X			

3.0 SUPPORTING INFORMATION

3.1 ECOLOGICAL FLOWS STANDARDS

ECOLOGICAL FLOWS STANDARDS: IMPOUNDMENT ZOE

Criterion	*Standard*	*Instructions*
A	1	Not Applicable / De Minimis Effect: • Confirm the location of the powerhouse relative to other dam/diversion structures to establish that there are no bypassed reaches at the facility. • If Run-of-River operation, provide details on how flows, water levels, and operation are monitored to ensure such an operational mode is maintained. • In a conduit project, identify the water source and discharge points for the conduit system within which the hydropower plant is located. • For impoundment zones only, explain how fish and wildlife habitat within the zone is evaluated and managed – ***NOTE:*** this is required information, but it will not be used to determine whether the Ecological Flows criterion has been satisfied. All impoundment zones can apply Criterion A-1 to pass this criterion.

- The Project powerhouse is located directly adjacent to the Chester Diversion Dam. The Project does not have a bypassed reach.
- The Project operates in a run-of-river mode. After irrigation needs are met, up to 3,500 cfs are diverted into the Project powerhouse for generation. Any flows greater than both irrigation and power needs spill over the Chester Diversion Dam.

  To ensure run-of-river operations, the Project is operated in accordance with the Project's 2012 Operations and Maintenance Manual (http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=14048059). Total flow is balanced so that the inflow from the Henry's Fork and Fall River will be passed through the Project or over the Dam, never to store water. The three inflatable sections of the rubber dam are controlled by an automated PLC program with safety manual valves for emergency inflation and deflation of each individual section. The three Project turbines are also automated for the increase or decrease of flows in the river. The control system works in conjunction with level sensors (elevation probes) located behind the intake screens, in front of the intake screens, and in the tailrace area 100 feet downstream of the powerhouse. These elevation probes allow the Project to increase or decrease automatically to maintain flow equal to the flow incoming from Henry's Fork and Falls River. Data from the probes is recorded in 15 minute intervals and is uploaded by the operator to the internet on a secured website.
- Fish and wildlife habitat within the Impoundment ZOE is evaluated through ongoing research efforts conducted by the Idaho Fish and Game (IDFG) and Henry's Fork

Foundation. Efforts are funded by Fall River so to better understand trout populations in the Project's vicinity. Research funding and efforts were approved by the FERC Order issued on January 13, 2009 (http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=13679573). Research efforts include investigating trout movements between the Henry's Fork and Falls River using radio telemetry, investigating fish entrainment in irrigation canals on the Fall River, and analyzing the effects of Del Rio Dam (below Chester Dam) on fish passage.

Fall River additionally worked in partnership with IDFG and the U.S. Fish and Wildlife Service (USFWS) to develop a Trout Monitoring Plan, approved by FERC on July 28, 2009 (http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=13741399). In accordance with the plan, IDFG conducts monitoring activities and prepares annual reports. Fall River provides the funds necessary to reimburse the IDFG for research and reporting efforts. Under the monitoring plan, resident trout population and size structure are monitored along with the presence, absence, and spatial distribution of cutthroat trout within the Project vicinity. As evidenced within an October 11, 2016 email (Appendix E), Fall River will continue to pay for IDFG to conduct future fish monitoring efforts.

ECOLOGICAL FLOWS STANDARDS: DOWNSTREAM ZOE

Criterion	*Standard*	*Instructions*
A	1	Not Applicable / De Minimis Effect: • Confirm the location of the powerhouse relative to other dam/diversion structures to establish that there are no bypassed reaches at the facility. • If Run-of-River operation, provide details on how flows, water levels, and operation are monitored to ensure such an operational mode is maintained. • In a conduit project, identify the water source and discharge points for the conduit system within which the hydropower plant is located. • For impoundment zones only, explain how fish and wildlife habitat within the zone is evaluated and managed – ***NOTE:*** this is required information, but it will not be used to determine whether the Ecological Flows criterion has been satisfied. All impoundment zones can apply Criterion A-1 to pass this criterion.

- The Project powerhouse is located directly adjacent to the Chester Diversion Dam. The Project does not have a bypassed reach.
- The Project operates in a run-of-river mode. After irrigation needs are met, up to 3,500 cfs are diverted into the Project powerhouse for generation. Any flows greater than both irrigation and power needs spill over the Chester Diversion Dam. The Licensee provides a minimum flow of 25 cfs through the sluiceway/logway to allow for downstream fish passage.

  To ensure run-of-river operations, the Project is operated in accordance with the Project's 2012 Operations and Maintenance Manual (http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=14048059). Total flow is balanced so that the inflow from the Henry's Fork and Fall River will be passed through the Project or over the Dam, never to store water. The three inflatable sections of the rubber dam are controlled by an automated PLC program with safety manual valves for emergency inflation and deflation of each individual section. The three Project turbines are also automated for the increase or decrease of flows in the river. The control system works in conjunction with level sensors (elevation probes) located behind the intake screens, in front of the intake screens, and in the tailrace area 100 feet downstream of the powerhouse. These elevation probes allow the Project to increase or decrease automatically to maintain flow equal to the flow incoming from Henry's Fork and Falls River. Data from the probes is recorded in 15 minute intervals and is uploaded by the operator to the internet on a secured website.

3.2 WATER QUALITY STANDARDS

WATER QUALITY STANDARDS: IMPOUNDMENT ZOE

Criterion	*Standard*	*Instructions*
B	3	Site-Specific Monitoring Studies: • Document consultation with appropriate water quality agency to determine what water quality parameters and sampling methods are required. • Present recent water quality data, explain how it satisfies applicable water quality standards, and provide a letter from the appropriate state of other regulatory agency accepting these results.

- Per 2008 FERC License Article 403, Fall River developed, in consultation with the USFWS, IDFG, and IDEQ, a Water Quality Monitoring Plan. The following FERC-approved Water Quality Monitoring Plan includes comment letters received from resource agencies during plan development: http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=13651549.

  The Water Quality Monitoring Plan applied to Project construction operations and currently applies to the first five years of Project operation. To monitor compliance with Idaho water quality standards, Fall River has four water quality monitoring stations with multi-parameter sondes fitted with temperature, turbidity, and optical dissolved oxygen sensors. The first station is positioned above the project impoundment on the Henry's Fork, the second is located in the Fall River just west of the N2925E bridge, the third is located at the forebay, and the fourth is located at the edge of the Project tailwater. Water Quality stations are monitored continuously and the units are programmed to record continuously at a 15-minute sampling interval.

- Fall River has submitted water quality reports to FERC for the years 2010 – 2015 (http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=13843418; http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=13942856; http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=14009068; http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=14354904; http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=14445597).

  As stated within the latest 2015 water quality report, dissolved oxygen (DO) values as recorded at the forebay monitoring station, ranged from a monthly minimum of 5.0 mg/L to a monthly maximum of 12.7 mg/L from April - December. The diurnal variation of DO is observed to be more pronounced in the forebay (up to about ± 3 mg/L) than in the tailrace (up to about ± 2 mg/L). The larger diurnal variation at the forebay station is possibly caused by the location of this station in an area that is subject to low flow velocity, which may contribute to the accumulation of algae. This variation caused daily minimums in the forebay to occasionally drop below the state daily minimum standard of 6.0 mg/L during the summer.

  Monthly maximum temperatures at the Project forebay ranged from 34.5°F to 73.8°F in 2015. Although state compliance limits for daily maximum (71.6°F) and daily average (66.2°F) were occasionally exceeded during late June through August, data from water quality stations at Henry's Fork and Fall River, upstream of project operations, show that water entering the project from upstream also exceeded compliance limits. Project operations

were in compliance with state temperature standards as exceedances appear to be caused by factors upstream of the Project.

It was found that turbidity measurements at the forebay station were elevated compared with measurements at the tailwater station. This may be due to the location of the forebay station, which is within a portion of the forebay that is subject to low flow velocity and algae accumulation. Overall, though, the 2015 turbidity data do not suggest that powerplant operations had any adverse effect on turbidity.

The 2015 data does not show systematic change in temperature, DO, or turbidity that could be attributed to the presence of the hydroelectric facility. A May 13, 2016 email from IDEQ confirms Project compliance with state water quality standards (Appendix B).

WATER QUALITY STANDARDS: DOWNSTREAM ZOE

Criterion	*Standard*	*Instructions*
B	3	Site-Specific Monitoring Studies: • Document consultation with appropriate water quality agency to determine what water quality parameters and sampling methods are required. • Present recent water quality data, explain how it satisfies applicable water quality standards, and provide a letter from the appropriate state of other regulatory agency accepting these results.

- Per 2008 FERC License Article 403, Fall River developed, in consultation with the USFWS, IDFG, and IDEQ, a Water Quality Monitoring Plan. The following FERC-approved Water Quality Monitoring Plan includes comment letters received from resource agencies during plan development: http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=13651549.

  The Water Quality Monitoring Plan applied to Project construction operations and currently applies to the first five years of Project operation. To monitor compliance with Idaho water quality standards, Fall River has four water quality monitoring stations with multi-parameter sondes fitted with temperature, turbidity, and optical dissolved oxygen sensors. The first station is positioned above the project impoundment on the Henry's Fork, the second is located in the Fall River just west of the N2925E bridge, the third is located at the forebay, and the fourth is located at the edge of the Project tailwater. Water Quality stations are monitored continuously and the units are programmed to record continuously at a 15-minute sampling interval.

- Fall River has submitted water quality reports to FERC for the years 2010 – 2015 (http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=13843418; http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=13942856; http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=14009068; http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=14354904; http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=14445597).

  As stated within the latest 2015 water quality report, DO values as recorded at the tailwater monitoring station, ranged from a monthly minimum of 7.0 mg/L to a monthly maximum of 13.8 mg/L from April - December. All recorded tailwater DO values were above the daily minimum state standard of 6.0 mg/L. DO monitoring data indicate that the Project was in compliance with the state DO standards during 2015.

  Monthly maximum temperatures at the Project tailwater ranged from 35.0°F to 74.0°F. Although state compliance limits for daily maximum (71.6°F) and daily average (66.2°F) were occasionally exceeded during late June through August, data from water quality stations at Henry's Fork and Fall River, upstream of project operations, show that water entering the project from upstream also exceeded compliance limits. Project operations were in compliance with state temperature standards as exceedances appear to be caused by factors upstream of the Project.

  It was found that turbidity measurements at the forebay station were elevated compared with measurements at the tailwater station. This may be due to the location of the forebay station, which is within a portion of the forebay that is subject to low flow velocity and algae

accumulation. Overall, though, the 2015 turbidity data do not suggest that powerplant operations had any adverse effect on turbidity.

The 2015 data does not show systematic change in temperature, DO, or turbidity that could be attributed to the presence of the hydroelectric facility. A May 13, 2016 email from IDEQ confirms Project compliance with state water quality standards (Appendix B).

3.3 UPSTREAM FISH PASSAGE STANDARDS

Rainbow trout, brown trout, Yellowstone cutthroat trout, and other resident species move locally within the Henry's Fork, but do not exhibit migratory life-history forms.

UPSTREAM FISH PASSAGE STANDARDS: IMPOUNDMENT ZOE

Criterion	*Standard*	*Instructions*
C	1	Not Applicable / De Minimis Effect: • Explain why the facility does not impose a barrier to upstream fish passage in the designated zone. • Document available fish distribution data and the lack of migratory fish species in the vicinity. • If migratory fish species have been extirpated from the area, explain why the facility is or was not the cause of this.

- Under the October 26, 2007 Settlement Agreement (Appendix C), Fall River and signatories ((U.S. Department of Agriculture - Forest Service (USFS), USFWS, IDFG, Idaho Department of Parks and Recreation (IDPR), Trout Unlimited (TU), the Henry's Fork Foundation (HFF), and the Greater Yellowstone Coalition) agreed to provide, outside of FERC license terms and obligations, upstream fish passage through the use of a fish ladder at the Project.

  There is no barrier to upstream fish passage in the Impoundment ZOE. Once fish cross over the Chester Diversion Dam with the use of the upstream fish ladder, the fish do not have any further impediments to passage through the Project's Impoundment ZOE. The implementation of the Project's upstream fish ladder has provided trout species with additional access to about 100 miles of rivers and streams above the Chester Diversion Dam (Henry's Fork Foundation 2012).

- The primary species of management interest in this reach of the Henry's Fork is the rainbow trout, which is a self-sustaining population that supports a "blue-ribbon" fishery in the river. Brown trout also occur as a self-sustaining population, but in lower numbers. Both the brown and rainbow trout in the project reach of the Henry's Fork exhibit non-migratory life-history forms. Other species that occur in the River include Yellowstone cutthroat trout, mountain whitefish, Utah sucker, Utah chub, speckled dace, mottled sculpin, and redside shiner.

  Several fisheries investigations have been conducted on the rainbow trout population of the Henry's Fork since 1980, and the applicant conducted additional investigations associated with the 2006 FERC license application. Table 2 provides the results of the Cross Cut Irrigation Canal fish collections conducted by Ecosystems Research Institute (ERI) in 2005 (ERI 2006).

TABLE 2 FISHES COLLECTED (ALL SIZE GROUPS) IN THE CROSS CUT IRRIGATION CANAL BY SCREW TRAP, ELECTROFISHING, AND DURING CHEMICAL TREATMENTS, APRIL THROUGH OCTOBER 2005. (ERI 2006)

SPECIES	NUMBER COLLECTED	ESTIMATED POPULATION
Screw trap (April – June):		
Rainbow trout	169	763
Brown trout	1	NA
Mountain whitefish	823	24,996
Speckled dace	1,522	18,228
Redside shiner	78	NA
Mottled sculpin	17	NA
Utah sucker	1	NA
Utah chub	1	NA
Electrofishing (April and October):		
Rainbow trout	40 (April); 186 (Oct.)	283 (April); 829 (Oct.)
Brown trout	1 (April); 0 (Oct.)	10 (April); 10 (Oct.)
Mountain whitefish	9 (April); 111 (Oct.)	90 (April); 462 (Oct.)
Speckled dace	Not counted	
Redside shiner	Not counted	
Mottled sculpin	Not counted	
Utah sucker	5 (Oct.)	50 (Oct.)
Chemical Treatment (July):		
Rainbow trout	264	NA
Brown trout	4	NA
Mountain whitefish	2,167	NA
Speckled dace	Not counted	
Redside shiner	Not counted	
Mottled sculpin	Not counted	
Utah sucker	13	NA
Utah chub	1	NA

The IFG additionally conducted electrofishing surveys with the Henry's Fork Foundation in the Last Chance Irrigation Canal in March 2003. The results of that sampling are included in Table 3.

TABLE 3 FISHES COLLECTED (ALL SIZE GROUPS) IN THE LAST CHANCE IRRIGATION CANAL BY IDAHO FISH AND GAME ELECTROFISHING, MARCH 2003. (LETTER FROM T. TRENT, CHIEF, NATURAL RESOURCES POLICY BUREAU, IDAHO FISH AND GAME, TO M.R. SALAS, SECRETARY, FERC, JANUARY 9, 2007)

SPECIES	NUMBER COLLECTED	PERCENT OF CATCH	FISH PER 100 METERS
Brook trout	1	0.3	0.8
Brown trout	8	2.6	6.4
Rainbow trout	223	73.4	178.4
Yellowstone cutthroat	1	0.3	0.8
Dace	29	9.5	23.2
Mountain whitefish	23	7.6	18.4
Sculpin	12	4.0	9.6
Suckers	7	2.3	5.6
TOTAL	304		

The Licensee did not conduct any sampling in the Falls River, which enters the Chester dam impoundment immediately upstream of the dam. The Henry's Fork Foundation, however, presented information on trout density in the Falls River. It reported that the density of rainbow trout in a 10-kilometer section of Falls River, based on Idaho Fish and Game surveys, was 474 fish per kilometer, but only 5 percent of the fish were greater than 400 millimeters (about 16 inches) long.

Additionally, within PacifiCorp's 1994 final report detailing the results of the upstream fish passage monitoring plan at the downstream St. Anthony Dam (Egin Dam), it was documented that 290 fish moved through the passageway for a period of 12 days in March. The 290 documented fish included mountain whitefish, Yellowstone cutthroat trout, rainbow trout, and Utah sucker. Please reference the 1994 report to view the daily monitoring data collected at the upstream fishway (**http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=1689633**).

Throughout monitoring efforts, trout and other species with non-migratory life histories have been documented within the Project vicinity.

- No species have been extirpated from this section of the Henry's Fork.

UPSTREAM FISH PASSAGE STANDARDS: DOWNSTREAM ZOE

Rainbow trout, brown trout, Yellowstone cutthroat trout, and other resident species move locally within the Henry's Fork, but do not exhibit migratory life-history forms.

Criterion	*Standard*	*Instructions*
C	2	Agency Recommendation: • Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally stringent). • Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is or is not part of a Settlement Agreement. • Describe any provisions for fish passage monitoring or effectiveness determinations that are part of the agency recommendation, and how these are being implemented.

- Under the October 26, 2007 Settlement Agreement (Appendix C), Fall River and signatories (USFS, USFWS, IDFG, IDPR, TU, the HFF, and the Greater Yellowstone Coalition) agreed to provide, outside of FERC license terms and obligations, upstream fish passage through the use of a fish ladder at the Project.

  Under the 2007 Settlement Agreement, conservation groups agreed to obtain the funds necessary for the design and construction of the upstream fishway and that IDFG would assume ownership of the fishway during its first five years of operation. It was agreed that the Licensee would assume ownership of the fishway if it was deemed beneficial to fisheries resources by the IDFG at the end of the five year period.

- The basis for 2007 Settlement Agreement recommendations for upstream passage stem from both policy for and scientific findings on local trout species. The native Yellowstone cutthroat trout occupies only a fraction of its historic range and was classified during Project licensing as a state endangered species. The Interagency Memorandum of Agreement for Conservation and Management of Yellowstone Cutthroat Trout (2000) (https://www.fws.gov/mountain-prairie/species/fish/yct/archive/Microsoft%20Word%20-%20YCT-MOU.pdf) directed the USFS, IDFG, and others to work cooperatively to protect, enhance, and restore Yellowstone cutthroat trout populations.

  Agencies cited that direct and indirect field evidence suggests that larger interconnected patches of waterway sustain Yellowstone cutthroat trout populations longer than do smaller isolated ones (Fausch and others, 2006 & 2009).

  Although fish movement in the Henry's Fork is not completely understood, several studies additionally showed that both small and large-scale movement of juvenile and adult rainbow trout do take place. Since completion of the fish ladder at the upstream Buffalo River Hydroelectric Project (FERC No. 1413), studies conducted by Fall River (Buffalo River Project Licensee), have documented significant upstream movement of

juvenile rainbow trout (http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=1409071).

Per the 2007 Settlement Agreement, IDFG owns the upstream fishway for the initial five years of operation (fishway was installed in 2011). IDFG agreed to evaluate the effectiveness and impact of the fishway during this five year period of ownership. Because the upstream fishway has been operational for one year, the IDFG has not evaluated the effectiveness of the fishway yet. The Henry's Fork Foundation did evaluate upstream trout migration in Spring 2016 and estimates that approximately 2,000 rainbow trout passed over the Chester Diversion Dam. In an email dated June 16, 2016 the IDFG states that based on Spring 2016 passage numbers, it appears the ladder is effective at moving fish above the dam, as designed (See Appendix D for IDFG and Henry's Fork Foundation emails confirming fish passage effectiveness).

At the end of five years, IDFG will determine whether the upstream fishway is structurally sound, effective, and beneficial for fish resources in the Henry's Fork. Upon takeover of fishway ownership, Fall River will follow the terms of Section 7 of the Settlement Agreement which sets forth the terms for funding, design, construction, maintenance, and evaluation of effectiveness and operation of the upstream fishway. Fall River understands that the Settlement Agreement is legally binding over the term of the FERC license for the Chester Diversion Dam Hydroelectric Project. Fall River has additionally committed to IDFG that they will continue to pay for future fish monitoring (see email dated October 11, 2016 in Appendix E).

3.4 DOWNSTREAM FISH PASSAGE AND PROTECTION STANDARDS

DOWNSTREAM FISH PASSAGE STANDARDS: IMPOUNDMENT ZOE

Rainbow trout, brown trout, Yellowstone cutthroat trout, and other resident species move locally within the Henry's Fork, but do not exhibit migratory life-history forms.

Criterion	*Standard*	*Instructions*
D	2	Agency Recommendation: • Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally stringent). • Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is part of a Settlement Agreement or not. • Describe any provisions for fish passage monitoring or effectiveness determinations that are part of the agency recommendation, and how these are being implemented.

- As included in License Article 404 and the October 26, 2007 Settlement Agreement (Appendix C), Fall River and signatories (USFS, USFWS, IDFG, IDPR, TU, the Henry's Fork Foundation, and the Greater Yellowstone Coalition) agreed upon the recommendation for a downstream sluiceway/logway to provide downstream fish passage over the Chester Diversion Dam. In accordance with this agreement, the Project provides a flow of at least 25 cfs through an installed sluiceway/logway for safe downstream fish passage. The flow of 25 cfs was chosen as it is a standard downstream fish passage velocity approved by NOAA.

  Signatories also agreed upon implementation of turbine intake screens and irrigation canal screens to reduce entrainment of resident fish. License Article 405 requires intake screen mesh openings that do not exceed 1.5 inches with a maximum intake approach velocity that does not exceed 4 feet per second. License Article 406 requires that screens to be placed in both the Last Chance and Cross Cut irrigation canals with screen mesh openings that do not exceed 0.25 inches.

- Agency recommendations were partially informed by density and size studies conducted both above and below the Project. Studies concluded that densities of age-1 and older rainbow trout above Chester Diversion Dam are greater than those found below the Chester Diversion Dam. Rainbow trout above the Diversion Dam were also found to exhibit larger size classes than those below. Overall, the estimates of young of the year fish were found to be significantly greater above the Diversion Dam (Garren et al. 2008).

  Although there is no information specific to the Chester Diversion Dam's reach within the Henry's Fork, the IDFG additionally concluded that downstream movement of both juvenile and adult trout does occur. Preexisting data from studies conducted by Mitro 1999 and Gregory 2001 report that downstream migrations of juvenile rainbow trout, spanned up to 8 km in the Henry's Fork River.

Despite incomplete information about the life history and migration patterns of fish in the affected reaches of the Henry's Fork, agencies concluded that downstream fish passage was necessary as spill over the Diversion Dam would change from 12 months of the year to less than two months of the year with the installment of the Chester hydroelectric project (December 12, 2006 State of Idaho Agencies' Comments: http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=4462800).

- Pursuant to the License Article 404 (as modified by the Commission on April 7, 2009 http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=13705413), the Licensee filed on July 13, 2011 a Logway Fish Monitoring Plan which was approved by the Commission on August 3, 2011 (http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=13937506; http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=13944085). The Plan was developed in consultation with the IDFG and USFWS and documentation of consultation is included within the plan. As noted by IDFG email dated July 1, 2016 (Appendix E), monitoring of the fish logway has yet to be completed by the IDFG, but on the schedule for completion. As noted in an email dated October 11, 2016 (Appendix E) Fall River and IDFG recently conducted field surveys for logway monitoring during the week of October 3, 2016. Results for this work will be filed with FERC in the coming months after data is processed and analyzed.

  Pursuant to License Article 407 the Licensee filed on August 26, 2009 a Fish Screen Monitoring Plan developed in consultation with IDFG and USFWS (http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=13748971). The Plan was modified and approved under FERC order issued October 29, 2009 (http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=13765052).

  On September 18, 2014 IDFG evaluated fish entrainment and possible fish mortality issues on the screen bypasses located in the Crosscut Canal and Last Chance Canal below Chester Diversion Dam. The study demonstrated that the bypass tubes/fish screens within the canals do function properly, with minimal mortality. As noted in IDFG's July 1, 2016 email (Appendix E), fish passage was deemed effective in the bypass tubes, with potential for improvement.

DOWNSTREAM FISH PASSAGE STANDARDS: DOWNSTREAM ZOE

Rainbow trout, brown trout, Yellowstone cutthroat trout, and other resident species move locally within the Henry's Fork, but do not exhibit migratory life-history forms.

Criterion	*Standard*	*Instructions*
D	1	Not Applicable / De Minimis Effect: • Explain why the facility does not impose a barrier to downstream fish passage in the designated zone, considering both physical obstruction and increased mortality relative to natural downstream movement (e.g., entrainment into hydropower turbines). • For riverine fish populations that are known to move downstream, explain why the facility does not contribute adversely to the sustainability of these populations or to their access to habitat necessary for successful completion of their life cycles. • Document available fish distribution data and the lack of migratory fish species in the vicinity. • If migratory fish species have been extirpated from the area, explain why the facility is or was not the cause of this.

- As included in License Article 404 and the October 26, 2007 Settlement Agreement (Appendix C), Fall River and signatories (USFS, USFWS, IDFG, IDPR, TU, the Henry's Fork Foundation, and the Greater Yellowstone Coalition) agreed upon the recommendation for a downstream sluiceway/logway to provide resident downstream fish passage over the Chester Diversion Dam. In accordance with this agreement, the Project provides a flow of at least 25 cfs through an installed sluiceway/logway for safe downstream fish passage.

  Signatories also agreed upon implementation of turbine intake screens and irrigation canal screens to reduce entrainment of resident fish. In accordance with license Article 405 and 406, Fall River has installed intake screens with mesh openings that do not exceed 1.5 inches and screens across both irrigation canal intakes with mesh openings that do not exceed 0.25 inches. Fall River provides a maximum intake approach velocity that does not exceed 4 feet per second.

- Pursuant to the License Article 404 (as modified by the Commission on April 7, 2009 http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=13705413), the Licensee filed on July 13, 2011 a Logway Fish Monitoring Plan which was approved by the Commission on August 3, 2011 (http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=13937506; http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=13944085). The Plan was developed in consultation with the IDFG and USFWS and documentation of consultation is included within the plan. As noted by IDFG email dated July 1, 2016 (Appendix E), monitoring of the fish logway has yet to be completed by the IDFG, but on schedule for completion. As noted in an email dated October 11, 2016 (Appendix E) Fall River and IDFG recently conducted field surveys for logway monitoring during the week of

October 3, 2016. Results for this work will be filed with FERC in the coming months after data is processed and analyzed.

Pursuant to License Article 407 the Licensee filed on August 26, 2009 a Fish Screen Monitoring Plan developed in consultation with IDFG and USFWS (http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=13748971). The Plan was modified and approved under FERC order issued October 29, 2009 (http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=13765052).

Prior to the installation of the downstream fish bypass facility, the Chester Diversion Dam provided partial downstream fish passage. Fish that moved downstream would either pass over the spillway or enter into the irrigation canals. Fish that survived the spillway passage were able to contribute to the fishery below the dam, while those that entered into the canals were essentially lost from the Henry's Fork River system. The combination of fish screens and downstream bypass facility have helped reduce the loss of substantial numbers of fish from the Henry's Fork system. On September 18, 2014 IDFG evaluated fish entrainment and possible fish mortality issues on the screen bypasses located in the Crosscut Canal and Last Chance Canal below Chester Diversion Dam. The study demonstrated that the bypass tubes/fish screens within the canals do function properly, with minimal mortality. As noted in IDFG's July 1, 2016 email (Appendix E), fish passage was deemed effective in the bypass tubes, with potential for improvement.

- Rainbow trout, brown trout, Yellowstone cutthroat trout and other resident species that might move locally past the Chester Diversion Dam are provided a fish bypass facility and fish screens to prevent entrainment. During Project licensing, concern was initially expressed by IDFG and non-governmental organizations (NGOs) regarding the potential effects the concrete diversion wall may bring to downstream flow patterns and subsequent effect of redd distribution downstream of the dam as water discharging from the powerhouse would enter the River at a right angle and increase discharge velocities on the far side of the riverbank. However, because the existing substrate below the dam is mostly large boulder, it was concluded that there is little potential for changes in bottom morphology or effects on spawning redds.

  At the far end of the Downstream ZOE, downstream migrants are also provided downstream fish passage at the St. Anthony Dam through the Egin Canal Fish Salvage Program (http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=14174679). Resident fishes with non-migratory life history forms may move through the Downstream ZOE to access desirable habitat unimpeded.

- Please see Upstream Fish Passage Standards: Upstream ZOE for available fish distribution data.

- No species have been extirpated from this section of the Henry's Fork.

3.5 SHORELINE AND WATERSHED PROTECTION STANDARDS

SHORELINE AND WATERSHED PROTECTION STANDARDS: IMPOUNDMENT ZOE

Criterion	*Standard*	*Instructions*
E	1	Not Applicable / De Minimis Effect: • If there are no lands with significant ecological value associated with the facility, document and justify this (e.g., describe the land use and land cover within the project boundary). • Document that there have been no Shoreline Management Plans or similar protection requirements for the facility.

- The Project has a small boundary area that incorporates the Chester Diversion Dam, rubber dam, impoundment, lands associated with canal headworks, powerhouse, parking lot, upstream and downstream boat launches, and the primary transmission line. The river left side of the boundary borders agricultural lands while the river right side of the boundary borders a mix of agricultural lands and natural lands owned by the IDFG. As classified by the 2011 National Landcover Database, the Project area borders or covers lands classified as: woody wetlands, cultivated crop lands, hay/pasture lands, and natural scrub shrub areas. Because of the well vegetated nature of the impoundment shoreline and the low, flat topography of the banks and adjacent floodplain, bank erosion within the Impoundment ZOE is a non-issue. During rubber dam inflation/deflation, rapid water fluctuations are avoided as best as possible within the Project impoundment as adjustments are made gradually.
- Please see the Project license (http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=13632019) and 2007 Settlement Agreement (Appendix C) for documentation confirming that a Shoreline Management Plan is not required for this Project.

SHORELINE AND WATERSHED PROTECTION STANDARDS: DOWNSTREAM ZOE

Criterion	*Standard*	*Instructions*
E	1	Not Applicable / De Minimis Effect: • If there are no lands with significant ecological value associated with the facility, document and justify this (e.g., describe the land use and land cover within the project boundary). • Document that there have been no Shoreline Management Plans or similar protection requirements for the facility.

- The Project has a small boundary area that incorporates the Chester Diversion Dam, rubber dam, impoundment, lands associated with canal headworks, powerhouse, parking lot, upstream and downstream boat launches, and the primary transmission line. The river left side of the boundary borders agricultural lands while the river right side of the boundary borders a mix of agricultural lands and natural lands owned by the IDFG. As classified by the 2011 National Landcover Database, the Project area borders or covers lands classified as: woody wetlands, cultivated crop lands, hay/pasture lands, and natural scrub shrub areas.

  During Project licensing it was opined that the concrete diversion wall located downstream of the dam may cause downstream shoreline erosion, as water discharging from the powerhouse would enter the River at a right angle and increase discharge velocities on the far side of the riverbank. Because the bed and banks of the River were reinforced with boulder rip rap revetment below the dam during Project construction, riverbank erosion is considered a non-issue below the dam. During rubber dam inflation/deflation, rapid water fluctuations are avoided as best as possible as adjustments are made gradually.

- Please see the Project license (http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=13632019) and 2007 Settlement Agreement (Appendix C) for documentation confirming that a Shoreline Management Plan is not required for this Project.

3.6 THREATENED AND ENDANGERED SPECIES STANDARDS

THREATENED AND ENDANGERED SPECIES STANDARDS: IMPOUNDMENT ZOE

Criterion	*Standard*	*Instructions*
F	2	Finding of No Negative Effects: • Identify all listed species in the facility area based on current data from the appropriate state and federal natural resource management agencies. • Provide documentation of a finding of no negative effect of the facility on any listed species in the area from an appropriate natural resource management agency.

- As identified in the 2016 USFWS IPAC Trust Resource Report (Appendix F), the Ute ladies' tresses, classified as an endangered species under the federal Endangered Species Act, has the potential to occur within the Project vicinity. Although the whooping crane was identified as a species that could potentially occur within the Project vicinity during licensing, the whooping crane (considered a non-essential experimental population by the USFWS), is no longer identified to have the potential to occur within the project area by the USFWS. The Utah valvata snail was also identified as federally endangered species that may have the potential to occur within the Project vicinity during licensing. The snail has since been delisted after Project licensing and is no longer identified to occur within the Project vicinity.

  During licensing the IDFG identified the bald eagle, a state endangered species, to have the potential to occur within the Project vicinity - The bald eagle has since been re-listed as a state threatened species after licensing. As stated in a July 7, 2016 email (Appendix F), the IDFG concurs that the Project does not cause any significant impacts to rare, threatened, or endangered species located within the Project vicinity. The IDFG provided an updated species list for Freemont County within the July 7, 2016 response.

- Under the 2008 FERC license and 2008 Environmental Assessment (http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=13632019; http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=13598061), it was determined that the Project would have no effect on the Ute ladies-tresses, Utah valvata snail, or the whooping crane.

  So to avoid any disturbances to bald eagles documented to nest and winter in the Project area, stipulations (Amended License Article 413 – Bald Eagle Construction Timing) were placed within the Project license so to avoid any eagle disturbance during Project construction.

  The USFWS issued letters supporting no effect to species on November 9, 2005 and December 11, 2006, and the IDFG issued a letter on October 26, 2007 (http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=4353967; http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=4462468; http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=13550183).

THREATENED AND ENDANGERED SPECIES STANDARDS: DOWNSTREAM ZOE

Criterion	*Standard*	*Instructions*
F	2	Finding of No Negative Effects: • Identify all listed species in the facility area based on current data from the appropriate state and federal natural resource management agencies. • Provide documentation of a finding of no negative effect of the facility on any listed species in the area from an appropriate natural resource management agency.

The species distribution in the Downstream ZOE is the same as the Impoundment ZOE. Please reference above responses for Impoundment ZOE.

F	PLUS	Bonus Activities: • Describe any enforceable agreement that the facility has with resource agencies to operate the facility in support of rare and endemic species. • Describe any enforceable agreement that the facility has with resource agencies to take proactive measures in the vicinity of the facility to substantially minimize impacts on species that are at risk of becoming listed species. • Describe any enforceable agreement that the facility has with resource agencies to be a significant participant in a species recovery effort.

- Under the October 26, 2007 Settlement Agreement (Appendix C), Fall River and signatories (USFS, USFWS, IDFG, IDPR, TU, the HFF, and the Greater Yellowstone Coalition agreed to provide, outside of FERC license terms and obligations, upstream fish passage through the use of a fish ladder. Under the 2007 Settlement Agreement, conservation groups agreed to obtain the funds necessary for the design and construction of the upstream fishway and that IDFG would assume ownership of the fishway during its first five years of operation. It was agreed that the Licensee would assume ownership of the fishway if it was deemed beneficial to fisheries resources by the IDFG at the end of the five year period.

  The basis for including upstream fish passage within the 2007 Settlement Agreement recommendations for upstream passage stem from both policy for and scientific findings on local trout species. The rare and endemic Yellowstone cutthroat trout occupies only a fraction of its historic range. The Interagency Memorandum of Agreement for Conservation and Management of Yellowstone Cutthroat Trout (2000) (https://www.fws.gov/mountain-prairie/species/fish/yct/archive/Microsoft%20Word%20-%20YCT-MOU.pdf) directed the USFS, IDFG, and others to work cooperatively to protect, enhance, and restore Yellowstone cutthroat trout populations. Field evidence suggests that larger interconnected patches of waterway sustain Yellowstone cutthroat trout populations longer than do smaller isolated ones (Fausch and others, 2006 & 2009). Studies also found that the non-native, but recreationally important rainbow trout also

exhibit small and large-scale movement within river systems. To promote Yellowstone cutthroat trout habitat enhancement and enhance habitat for recreationally important species, the fish ladder was agreed upon by agencies and recently constructed at the Project.

- The 2007 Settlement Agreement acts as an enforceable agreement between Fall River, resource agencies, and NGOs. Under the Agreement, IDFG owns the upstream fishway for the initial five years of operation (fishway was installed in 2011). Under IDFG ownership, IDFG is to evaluate the effectiveness and impact of the fishway during this five year period of ownership. At the end of five years, IDFG will determine whether the upstream fishway is structurally sound, effective, and beneficial for fish resources in the Henry's Fork before transferring ownership to Fall River. Because the upstream fishway has been operational for only one year, the IDFG has not evaluated the effectiveness of the fishway yet.
- Fish and wildlife habitat within the Impoundment ZOE is evaluated through ongoing research efforts conducted by the IDFG and Henry's Fork Foundation. Efforts are funded by Fall River so to better understand trout populations in the Project's vicinity. Research funding and efforts were approved by the FERC Order issued on January 13, 2009 (http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=13679573). Research efforts include investigating trout movements between the Henry's Fork and Falls River using radio telemetry, investigating fish entrainment in irrigation canals on the Fall River, and analyzing the effects of Del Rio Dam (below Chester Dam) on fish passage.

  Fall River additionally worked in partnership with IDFG and the USFWS to develop a Trout Monitoring Plan, approved by FERC on July 28, 2009 (http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=13741399). In accordance with the plan, IDFG conducts monitoring activities and prepares annual reports. Fall River provides the funds necessary to reimburse the IDFG for research and reporting efforts. Under the monitoring plan, resident trout population and size structure are monitored along with the presence, absence, and spatial distribution of cutthroat trout within the Project vicinity.

3.7 CULTURAL AND HISTORIC RESOURCES STANDARDS

CULTURAL AND HISTORIC RESOURCES STANDARDS: IMPOUNDMENT ZOE

Criterion	*Standard*	*Instructions*
G	2	Approved Plan: • Provide documentation of all approved state, provincial, federal, and recognized tribal plans for the protection, enhancement, and mitigation of impacts to cultural and historic resources affected by the facility. • Document that the facility is in compliance with all such plans.

- The Project is in compliance with 2008 FERC License Article 417 and the Programmatic Agreement (executed on April 24, 2008) with implementation of a Historic Properties Management Plan (HPMP) (http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=13665890). The HPMP, was developed in consultation with the State Historic Preservation Office (SHPO), accepted by the SHPO on January 20, 2009 (http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=13682046) and approved by the FERC on June 16, 2009 (http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=13728806).

  The HPMP establishes a process for identifying the nature and significance of historic properties that may be affected by Project maintenance and operation; and establishes guidelines for routine maintenance, operation activities, proposed improvements to Project facilities, and/or public access.

- In accordance with the HPMP, Fall River submitted bi-annual Cultural Resource Reports in 2011, 2013, and 2015 (http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=13970382; http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=14156992; http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=14394692).

  The 2015 Cultural Resource Report includes a letter from the SHPO approving of the Report and concurring with Fall River's recommendation that future monitoring surveys are no longer warranted (except in the event of new project undertakings) as construction of the hydroelectric project is now complete.

CULTURAL AND HISTORIC RESOURCES STANDARDS: DOWNSTREAM ZOE

Criterion	*Standard*	*Instructions*
G	2	Approved Plan: • Provide documentation of all approved state, provincial, federal, and recognized tribal plans for the protection, enhancement, and mitigation of impacts to cultural and historic resources affected by the facility. • Document that the facility is in compliance with all such plans.

- The Project is in compliance with 2008 FERC License Article 417 and the Programmatic Agreement (executed on April 24, 2008) with implementation of a Historic Properties Management Plan (HPMP) (http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=13665890). The HPMP, was developed in consultation with the State Historic Preservation Office (SHPO), accepted by the SHPO on January 20, 2009 (http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=13682046) and approved by the FERC on June 16, 2009 (http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=13728806).

  The HPMP establishes a process for identifying the nature and significance of historic properties that may be affected by Project maintenance and operation; and establishes guidelines for routine maintenance, operation activities, proposed improvements to Project facilities, and/or public access.

- In accordance with the HPMP, Fall River submitted bi-annual Cultural Resource Reports in 2011, 2013, and 2015 (http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=13970382; http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=14156992; http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=14394692).

  The 2015 Cultural Resource Report includes a letter from the SHPO approving of the Report and concurring with Fall River's recommendation that future monitoring surveys are no longer warranted (except in the event of new project undertakings) as construction of the hydroelectric project is now complete.

3.8 RECREATIONAL RESOURCES STANDARDS

RECREATIONAL RESOURCES STANDARDS: IMPOUNDMENT ZOE

Criterion	*Standard*	*Instructions*
H	2	Agency Recommendation: • Document any comprehensive resource agency recommendations and enforceable recreation plan that is in place for recreational access or accommodations. • Document that the facility is in compliance with all such recommendations and plans.

- As prescribed in the 2007 Settlement Agreement and 2008 FERC License Article 415, Fall River provides public recreation facilities within the Project boundary. Per agency recommendations included within the IDFG October 26, 2007 letter, IDPR October 29, 2007 letter, HFF October 29, 2007 letter, and USFWS October 29, 2007 letter (http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=13550183; http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=13550587 ; http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=13550741; http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=13550814) and the 2007 Settlement Agreement, the Project provides an upper parking area on the northeast side of the facility large enough to accommodate 20 cars with trailers, unisex ADA restrooms located at the upper parking area with hardened surface to ADA parking, concrete boat ramp located at the upper parking area, trash receptacle placed close to boat ramp area, and fishing platform built to ADA standards.

- In compliance with 2008 FERC License Article 415, Fall River submitted a Recreation Management Report on May 30, 2014 with supplemental information filed on November 19, 2014 documenting the construction and implementation of recreation and aesthetic measures at the Project (http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=14221609 ; http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=14272003). Resource agency consultation during the development of recreation facilities is included within the supplemental information filed on November 19, 2014.

  Additionally, Fall River fulfilled Article 415 requirements with the January 12, 2015 filing of revised Exhibit G drawings of which update the Project boundary to include all recreation facilities described herein (http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=14289344). FERC issued a letter on November 5, 2015 approving of installed facilities (http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=14396469).

RECREATIONAL RESOURCES STANDARDS: DOWNSTREAM ZOE

Criterion	*Standard*	*Instructions*
H	2	Agency Recommendation: • Document any comprehensive resource agency recommendations and enforceable recreation plan that is in place for recreational access or accommodations. • Document that the facility is in compliance with all such recommendations and plans.

- As prescribed in the 2007 Settlement Agreement and 2008 FERC License Article 415, Fall River provides public recreation facilities within the Project boundary. Per agency recommendations included within the IDFG October 26, 2007 letter, IDPR October 29, 2007 letter, HFF October 29, 2007 letter, and USFWS October 29, 2007 letter (http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=13550183; http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=13550587 ; http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=13550741; http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=13550814) and the 2007 Settlement Agreement, the Project provides a lower parking area along the tailrace capable of providing parking for 10 cars with trailers, bridge access across the Cross Cut Irrigation Canal, signs informing lower parking area users of restrooms and additional parking available in the upper parking area, concrete boat ramp located at the lower parking area, trash receptacle placed close to the boat ramp area.

  Please reference Recreational Resources Standards: Impoundment ZOE for evidence of Project compliance with recommendations and plans.

4.0 CONTACTS FORMS

1. All applications for LIHI Certification must include complete contact information to be reviewed.

Project Owner:	
Name and Title	Bryan Case, General Manager
Company	Fall River Rural Electric Cooperative, Inc.
Phone	208-652-7051
Email Address	bryan.case@fallriverelectric.com
Mailing Address	1150 North 3400 East, Ashton, Idaho 83420
Project Operator (if different from Owner):	
Name and Title	Mark Chandler, Hydro Supervisor
Company	Fall River Rural Electric Cooperative, Inc.
Phone	208-652-7051
Email Address	mark.chandler@fallriverelectric.com
Mailing Address	1150 North 3400 East, Ashton, Idaho 83420
Consulting Firm / Agent for LIHI Program (if different from above):	
Name and Title	Laura Cowan, Regulatory Coordinator
Company	Kleinschmidt Associates
Phone	717-983-4056
Email Address	laura.cowan@kleinschmidtgroup.com
Mailing Address	PO Box 278, 400 Historic Drive, Strasburg, PA 17579
Compliance Contact (responsible for LIHI Program requirements):	
Name and Title	Mark Chandler, Hydro Supervisor
Company	Fall River Rural Electric Cooperative, Inc.
Phone	208-652-7051
Email Address	mark.chandler@fallriverelectric.com
Mailing Address	1150 North 3400 East, Ashton, Idaho 83420
Party responsible for accounts payable:	
Name and Title	Roz Jenkins, Accounting Specialist
Company	Fall River Rural Electric Cooperative, Inc.
Phone	208-652-7431
Email Address	roz.jenkins2@fallriverelectric.com
Mailing Address	1150 North 3400 East, Ashton, Idaho 83420

2. Applicant must identify the most current and relevant state, federal, provincial, and tribal resource agency contacts (copy and repeat the following table as needed).

Agency Contact (Check area of responsibility: Flows__, Water Quality __, Fish/Wildlife Resources _X_, Watersheds __, T/E Spp. _X_, Cultural/Historic Resources __, Recreation __):	
Agency Name	Idaho Department of Fish and Game – Upper Snake Region
Name and Title	Tom Bassista, Environmental Staff Biologist
Phone	208-525-7290
Email address	thomas.bassista@idfg.idaho.gov
Mailing Address	4279 Commerce Circle, Idaho Falls, ID 83401

Agency Contact (Check area of responsibility: Flows__, Water Quality __, Fish/Wildlife Resources _X_, Watersheds __, T/E Spp. _X_, Cultural/Historic Resources __, Recreation __):	
Agency Name	Idaho Department of Fish and Game – Upper Snake Region
Name and Title	Dan Garren, Regional Fisheries Manager
Phone	208-525-7290
Email address	dan.garren@idfg.idaho.gov
Mailing Address	4279 Commerce Circle, Idaho Falls, ID 83401

Agency Contact (Check area of responsibility: Flows_X_, Water Quality _X_, Fish/Wildlife Resources __, Watersheds _X_, T/E Spp. __, Cultural/Historic Resources __, Recreation __):	
Agency Name	Idaho Department of Environmental Quality
Name and Title	Troy Saffle, Regional Manager
Phone	208-528-2650
Email address	troy.saffle@deq.idaho.gov
Mailing Address	900 N Skyline, Suite B, Idaho Falls, ID 83402

Agency Contact (Check area of responsibility: Flows__, Water Quality __, Fish/Wildlife Resources __, Watersheds __, T/E Spp. __, Cultural/Historic Resources _X_, Recreation __):	
Agency Name	Idaho State Historical Society
Name and Title	Ethan Morton, State Historic Preservation Officer
Phone	208-334-3847
Email address	ethan.morton@ishs.idaho.gov
Mailing Address	210 Main Street, Boise, ID 83702

Agency Contact (Check area of responsibility: Flows__, Water Quality __, Fish/Wildlife Resources _X_, Watersheds __, T/E Spp. _X_, Cultural/Historic Resources __, Recreation __):	
Agency Name	U.S. Fish and Wildlife Service
Name and Title	Michael Morse, Federal Activities
Phone	208-378-5261
Email address	michael_morse@fws.gov
Mailing Address	1387 S. Vinnell Way, Suite 368, Boise, ID 83709

Agency Contact (Check area of responsibility: Flows__, Water Quality _X_, Fish/Wildlife Resources _X_, Watersheds _X_, T/E Spp. _X_, Cultural/Historic Resources _X_, Recreation _X_):	
Agency Name	U.S. Forest Service
Name and Title	Liz Davey, District Ranger, Ashton
Phone	208-558-7812
Email address	edavey@fs.fed.us
Mailing Address	46 Hwy 20, Ashton, ID 83420

5.0 SWORN STATEMENT

Sworn Statement and Waiver Form

All applications for LIHI Certification must include the following sworn statement before they can be reviewed by LIHI:

SWORN STATEMENT

As an Authorized Representative of Fall River Rural Electric the Undersigned attests that the material presented in the application is true and complete.

The Undersigned acknowledges that the primary goal of the Low Impact Hydropower Institute's Certification Program is public benefit, and that the LIHI Governing Board and its agents are not responsible for financial or other private consequences of its certification decisions.

The undersigned further acknowledges that if certification of the applying facility is issued, the LIHI Certification Mark License Agreement must be executed prior to marketing the electricity product as LIHI Certified.

The undersigned Applicant further agrees to hold the Low Impact Hydropower Institute, the Governing Board and its agents harmless for any decision rendered on this or other applications, from any consequences of disclosing or publishing any submitted certification application materials to the public, or on any other action pursuant to the Low Impact Hydropower Institute's Certification Program.

PLEASE INSERT ONLY FOR PRE-OPERATIONAL CERTIFICATIONS (See Section 4.5.3)**:**

For applications for pre-operational certification of a "new" facility the applicant must also acknowledge that the Institute may suspend or revoke the certification should the impacts of the project, once operational, fail to comply with the certification criteria.

Company Name: Fall River Rural Electric

Authorize Representative Name: Mark Chandler Title Hydro Supervisor

State of Idaho)

County of Fremont)

On this, the 19th day of September, 2016, before me a notary public, the undersigned officer, personally appeared Mark Chandler, known to me (or satisfactorily proven) to be the person whose name is subscribed to the within instrument, and acknowledged that he executed the same for the purposes therein contained. In witness hereof, I hereunto set my hand and official seal.

Notary Public Kathy Lee Collinger

exp 10-25-2018

KATHY LEE COLLINGER NOTARY PUBLIC STATE OF ID

LIHI Handbook 2nd Edition – Sworn Statement and Waiver Form

6.0 REFERENCES

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Garren et al. 2008. Fishery Management Annual Report: Upper Snake Region 2006. Idaho Department of Fish and Game, Idaho Falls.

Gregory, J. 2001. Winter Migration and Survival of Telemeterized Juvenile Rainbow trout in the Henry's Fork of the Snake River, Idaho. A project of the Henry's Fork Foundation. Final Report. Gregory Aquatics, 5306 Zollinger Rd Mackay, ID

Henry's fork Foundation. 2012. The Voice of the River: Fish Passage in the Watershed – Current Projects and Future Opportunities. https://henrysfork.org/files/Quarterly%20Newsletters/HFF%20Winter%20Quarterly%202012%20web.pdf. Accessed September 14, 2016.

Idaho Department of Environmental Quality (IDEQ). 2012. Idaho's 2012 Integrated Report. State of Idaho Department of Environmental Quality. http://www.deq.idaho.gov/media/994278-2012_integrated_report_draft.pdf. Accessed April 30, 2016.

Mitro, M. 1999. Sampling and analysis techniques and their application for estimating recruitment of juvenile rainbow trout in the Henrys Fork of the Snake River, Idaho. Doctoral Dissertation. Montana State University, Bozeman Montana, August 1999.

USACE (U.S. Army Corps of Engineers). 2007 National Inventory of Dams Database. http://nid.usace.army.mil/cm_apex/f?p=838:12. Accessed March 25, 2016.

USFWS (U.S. Fish and Wildlife Service). 2016. National Wetlands Inventory. http://www.fws.gov/wetlands/Data/Mapper.html. Accessed April 4, 2016.