



Northwest Power Services, Inc.

ORIGINAL

May 11, 2005

Ms. Magalie R Salas, Secretary  
Federal Energy Regulatory Commission  
Mail Code: DHAC, PJ-12  
888 First Street, NE  
Washington, DC 20426

FILED  
OFFICE OF THE  
SECRETARY  
2005 MAY 13 A 10:08  
FEDERAL ENERGY  
REGULATORY COMMISSION

Re: Buffalo River Hydroelectric Project, FERC Project #1413

Dear Ms. Salas,

For your review and approval, for the proposed construction activities at the Buffalo River Hydroelectric Project, FERC Project #1413, please find attached the following plans:

Erosion control Plan (Article #302) - ~~035~~ CANCELED  
Temporary Emergency Action Plan (Article #304)  
Hazardous Substance Plan (Article #404) - 036  
Fishway & Fish Screen Monitoring Plan (Article #407) - 038  
Diversion Operation Plan (Article #410 & USFS Condition #15) - 040  
Public Safety Plan (USFS Condition #7)  
Heritage Resource Protection Plan (USFS Condition #12) - 039  
Vegetation Management Plan (USFS Condition #17) - 037  
B E/A for Threatened, Endangered, and Sensitive Species (USFS Condition #18 & 19) - 041

If you have any questions or need additional information please contact me at (208) 745-0834 or e-mail me at [bsmith@nwpwrservices.com](mailto:bsmith@nwpwrservices.com).

Sincerely,

NORTHWEST POWER SERVICES, INC.

A handwritten signature in dark ink, appearing to read "Brent L. Smith".

Brent L. Smith  
President

cc: Mr. Dee Reynolds, Fall River Electric  
Constantine Tjoumas, Director, D2SI, FERC - Washington  
Harry T. Hall, Regional Engineer, FERC - Portland

PO Box 535 • Rigby, ID 83442 • 208-745-0834

Gary Vecellio, Environmental Staff Biologist, Idaho Department of Fish & Game  
Gerrish Willis, Regional Hydropower Coordinator  
Jim De Rito, Conseration Director, Henry's Fork Foundation  
Steve Trafton, Executive Director, Henry's Fork Foundation  
Lee Mabey, US Forest Service  
Adrienne Keller, US Forest Service  
Deb Mignogno, US Fish & Wildlife Service  
Jim Esch, US Fish & Wildlife Service  
Scott, A. Grunder, Fishery Program Coordinator, Idaho Department of Fish & Game  
Troy Saffle, Idaho DEQ  
Keith Hobbs, Idaho Department of Parks & Recreation

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# Buffalo River Hydroelectric Project

FERC Project #1413

Construction Plans



*Prepared for:*

Fall River Rural Electric Cooperative, Inc.  
Ashton, Idaho

*Prepared by:*

Northwest Power Services, Inc.  
Rigby, Idaho

Ecosystems Research Institute, Inc.  
Logan, Utah

May 2005

# Buffalo River Hydroelectric Project

FERC Project No. 1413

Construction Plans

*Prepared for:*

Fall River Rural Electric Cooperative, Inc.  
1150 North 3400 East  
Ashton, Idaho 83420

*Prepared by:*

Northwest Power Services, Inc.  
PO Box 535  
Rigby, Idaho 83442

Ecosystems Research Institute  
975 South State Highway  
Logan, Utah 84321

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**Initial Statement**

On November 5, 2004 the Federal Energy Regulatory Commission (FERC) issued a new License for the Buffalo River Hydroelectric Project for a period of 40 years. The FERC issued the original license for the project on March 14, 1980. That license expired on October 31, 2004. Fall River Rural Electric Cooperative, Inc. (Fall River), filed an application on October 30, 2002, for a subsequent minor license to continue to operate the existing 250-kilowatt (kW) Buffalo River Hydroelectric Project (project). The run-of-river project is located on the Buffalo River near its confluence with the Henry's Fork River, north of Ashton, in Fremont County, Idaho. The project occupies about 9.8 acres of land within the Targhee National Forest, administered by the U.S. Forest Service (Forest Service).

The new license has required certain plans be written and reviewed before construction or after the license was issued, the purpose of this document is to provide the bulk of these plans as one document. Additional plans will be filed separate of this document in the future, in addition, the Upstream Fishway Construction Scheduling plan was filed prior to this document and approved by the FERC in an order issued April 22, 2005.

On March 13, 2005 the licensee sent the plans in this document to the following agencies for comments and approval:

- US Forest Service (USFS)
- ID Fish and Game (IDFG)
- Henry's Fork Foundation, Inc. (HFF)
- US Fish and Wildlife Service (USFWS)
- ID DEQ
- ID Park and Recreation
- Greater Yellowstone Coalition

The licensee has received comments from USFS, IDFG, USFWS and HFF as of May 9, 2005, a copy of the comment letters are enclosed as Exhibit A.

*Initial Statement*

# ***Section A***

## ***Erosion Control Plan***

# Erosion Control Plan

## 1.0 Introduction

A license was issued to Fall River Rural Electric Cooperative, Inc. (Fall River) in November, 2004 by the Federal Energy Regulatory Commission (Commission) for the alteration and continued operation of the Buffalo River Hydroelectric Project. The 250-kilowatt (kW) run-of-river project is located on the Buffalo River near its confluence with the Henry's Fork of the Snake River, north of Ashton, in Fremont County, Idaho. The license stipulates several terms and conditions which must be met with approval from various resource agencies. The purpose of this document is to describe the site specific soil erosion control measures to be implemented to prevent soil loss from the project site and sediment yield to the Buffalo River. This document has been developed in response to Article #401 4(e)-16 and US Forest Service Condition #16 of the license which states:

***At least 90 days prior to any ground disturbing activity the licensee shall file with the Commission a vegetation management plan that has been prepared in consultation with and approved by the US Forest Service (USFS). The plan should include measures to control erosion, stream sedimentation, dust, soil, and mass movement.***

***In addition to consultation with the USFS, the licensee shall prepare the above plans after consultation with the Idaho Department of Fish and Game (IDFG), Fish and Wildlife Service (FWS), Idaho Department of Environmental Quality (IDEQ), and the Idaho Department of Parks and Recreation (IDPR). The licensee shall include with the plans documentation of consultation, copies of comments, and recommendations on the completed plans after the plans have been prepared and provided to the agencies, and specific descriptions of how agencies' comments are accommodated by the plans. The licensee shall allow a minimum of 30 days for the agencies to comment and to make recommendations before filing the plans with the Commission. If the licensee does not adopt a recommendation, the filings shall include the licensee's reasons, based on project-specific information.***

***The Commission reserves the right to make changes to any plan submitted. Upon Commission approval, the plan becomes a requirement of the license, and the licensee shall implement the plan or changes in the project operations or facilities, including any changes required by the Commission.***



## 2.0 Erosion, Dust, and Sediment Production During Construction

Construction of the new intake structure, installation of the fish screens, sealing the upstream face of the dam, building a fish ladder, and retexturing the power house all have the potential for producing or displacing sediment/dust into the Buffalo River. In addition, construction is scheduled to take place during a period of time (August 1 through October 31, 2005) when thunderstorm activity or early snow storms could have an impact on erosion in the area.

## 3.0 Measures to Control Erosion, Dust, and Sediment Production During Construction

### **3.1 General Erosion Control Measures**

General erosion, dust, and sediment control measures will be implemented throughout the project area. Those measures include the following:

1. Construction and spoil material will be contained in a temporary storage site within the staging area adjacent to the dam (Figure A-1). These materials will be stored at least 50 feet away from the river. Upon project completion all construction and spoil material will be removed from the staging area and disposed of properly.

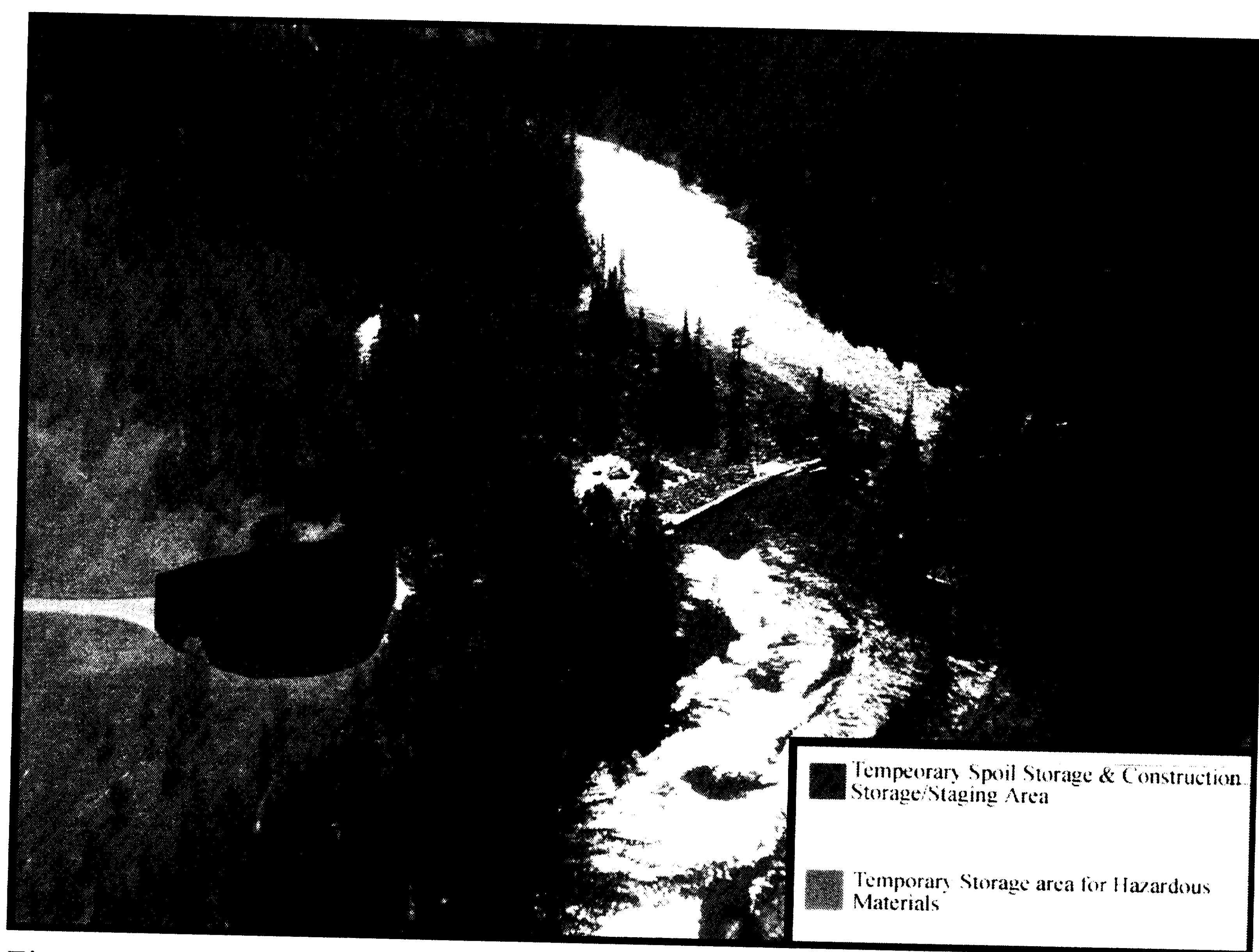


Figure A-1

2. Disturbance caused by equipment beyond permanent roads/parking areas will be revegetated. Revegetation treatments will be initiated as soon after ground disturbance as possible (See Buffalo River Hydroelectric Project FERC Project #1413 Vegetation Management Plan, Section K of this document).
3. A coffer dam will be constructed upstream of the current diversion structure to provide dry working conditions. The dam will be built in August of 2005 and removed in October of 2005 (Figure A-2). It will be constructed of rock and gravel with less than two percent fine material to minimize water turbidity. The coffer dam will be located within the forebay, adjacent to the current intake to the powerplant.
4. Unused concrete and construction spoil material will be removed from the site and the cleaning of concrete/construction associated implements will be done at least 50 feet from the river (within the staging area) and kept to a minimum.
5. Sediment fences and decomposable fiber mats/or straw mulch will be installed on portions of the re-seeded access slope between the staging area and the dam (Figure A-3) in order to control sediment run-off in this area until the vegetation becomes established. Sediment barriers will be inspected frequently, including after every major precipitation event, and will be promptly repaired or replaced as necessary. When sediment deposition behind the silt fences or straw bales accumulates to depth of six inches or more, the sediment will be removed to restore the efficiency of perimeter control. The sediment removed will be added to topsoil or disposed of depending on the potential of the material to support plant growth.

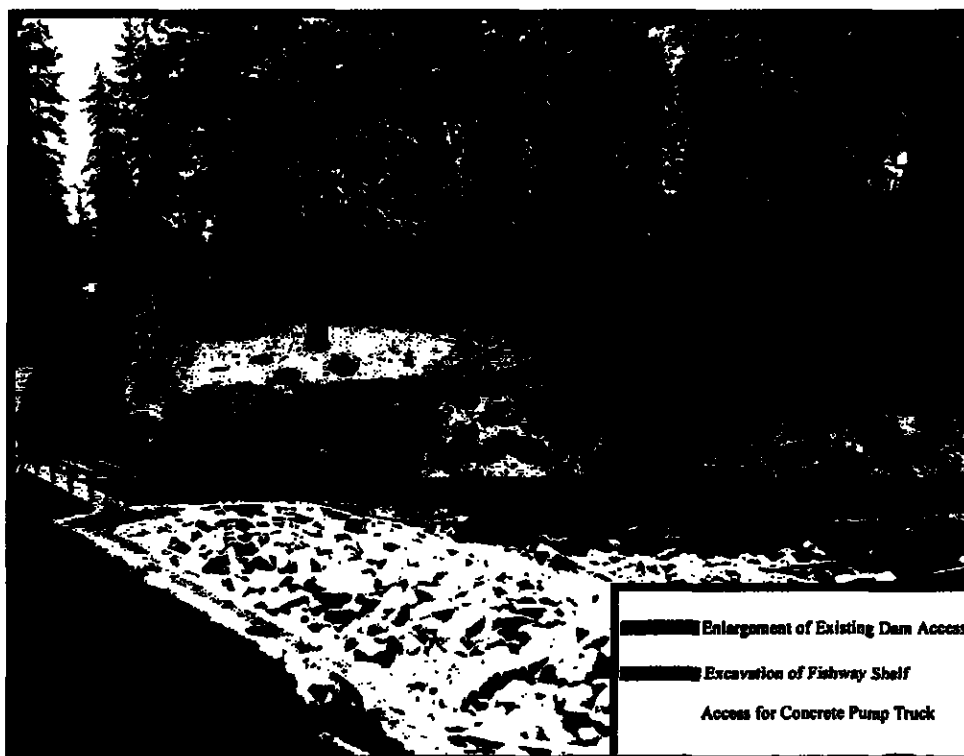


Figure A-3

Section A - 3

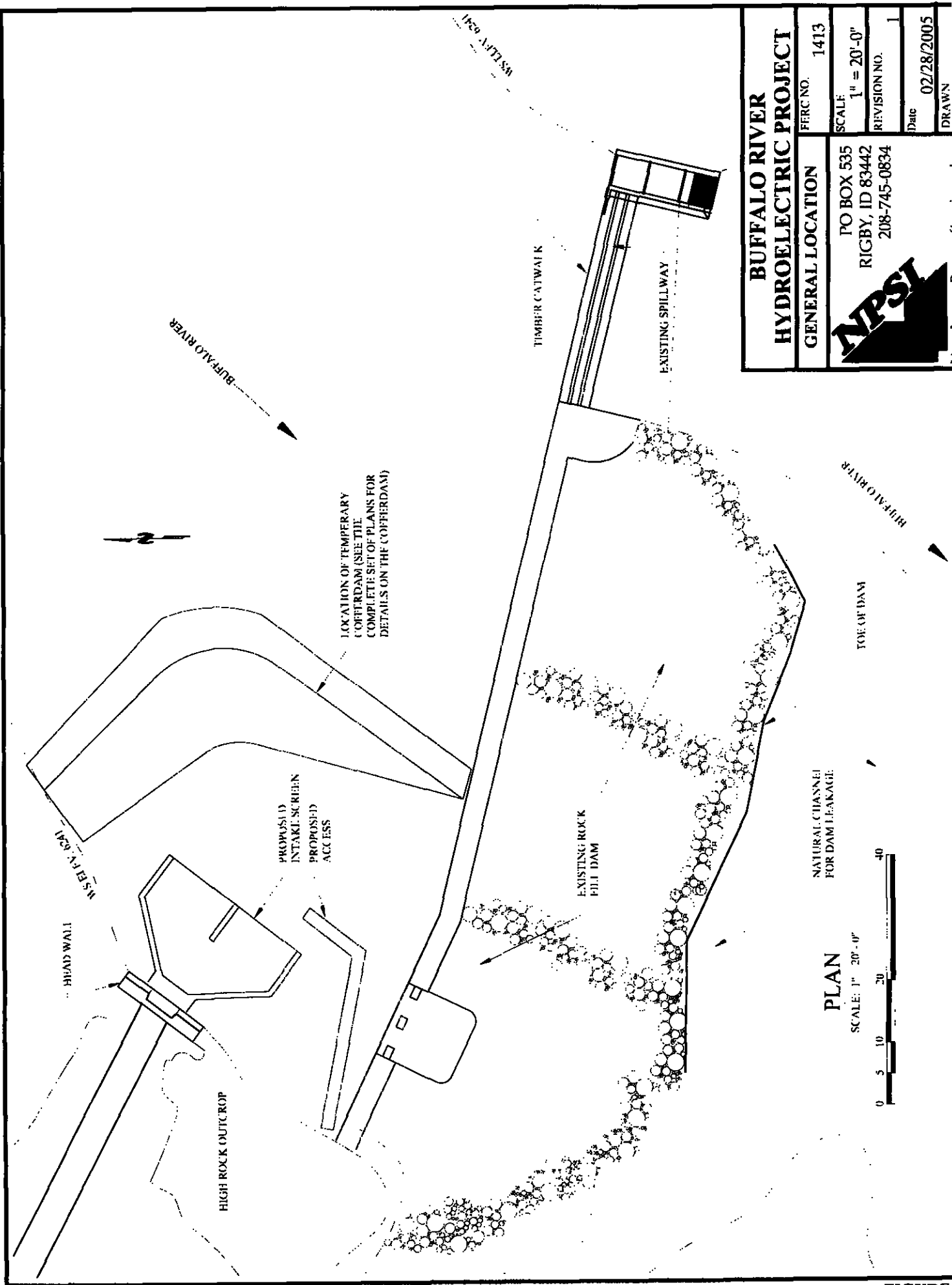


FIGURE A

6. Portions of the access slope between the staging area and the dam (Figure A-3) that will not be disturbed further in construction will be re-vegetated (See Vegetation Management Plan). This process will be repeated as necessary to protect newly exposed unconsolidated material as construction proceeds.

7. Dust caused by vehicular traffic on the access road will be controlled as necessary during construction, by periodic sprinkling from a water truck

### **3.2 Construction/Facility Specific Erosion, Dust, and Sediment Control Measures**

#### **3.2.1 Construction of the New Intake Structure**

Construction of the new intake structure will begin only after the coffer dam has been built upstream of the current diversion structure and the area between the two structures is de-watered. Water existing between the completed coffer dam and the current diversion structure will be pumped out onto the face of the dam over a 24 hour period. Continuous measurements of water turbidity will be taken downstream while construction is taking place.

#### **3.2.2 Sealing the Upstream Face of the Dam**

Grouting the face of the dam will commence after the sheet pilings have been driven into the dam face and the structure is nearly dry. Continuous measurements of water turbidity will be taken downstream while grouting is taking place.

Unused grout will be removed from the site and the cleaning of grout/construction associated implements will be done at least 50 feet from the river (within the staging area) and kept to a minimum.

#### **3.2.3.1 Pre-Construction Excavation**

Prior to constructing the actual fish ladder, some physical alterations of the area will need to be completed. Heavy machinery will need to enter the Buffalo River below the dam and build up local material to form a sill for the fish ladder (Figure A-3). A berm of impermeable material will be installed just above the working machinery to divert as much flow as possible away from the area being disturbed by excavation. This area will be the East side of the Buffalo River immediately downstream of the current fish passage structure.

Excess spoil material will be minimal as the majority of it will be used in the construction of the sill. Most of the material is bedrock with few fine materials. Any

excess spoil material will be stored temporarily in the appropriate portion of the staging area before being properly disposed of.

#### **3.2.3.2 Construction of the Fish Ladder**

The construction of the fish ladder will begin in August and be completed in late October of 2005 (Figure A-4). Berms of impermeable material will be installed in areas where construction has the potential to interfere with flows and increase turbidity. Continuous measurements of water turbidity and daily grab samples will be taken downstream while the fish ladder is being constructed and equipment are in the Buffalo River

#### **3.2.4 Installation of the fish screens**

The fish screens will be installed as part of the grouting/resealing portion of construction. Installation will take place after the coffer dam has been built and the area between the two structures is de-watered.

#### **3.2.5 Retexturing the Powerhouse**

The process of stuccoing the powerhouse structure is not expected to cause any local erosion, dust, or sediment disturbance in the project area.

#### **3.2.6 Removal of the Cofferd Dam**

The coffer dam will be removed in October of 2005. All spoil material associated with the removal of the dam will be stored temporarily in the appropriate portion of the staging area before being properly disposed of. Continuous measurements of water turbidity and daily grab samples will be taken downstream in the Buffalo River.

#### **3.2.7 Staging Area**

The staging area will be located on relatively level slope adjacent to the dam in an area that has previously been used for parking (Figure A-1). During construction, this area will include areas of construction materials and the possibility of some spoil material. Erosion, dust, and sediment control measures to be implemented in the staging area and will be as follows:

Snow in the staging area will be plowed in order to minimize snow melt runoff. Snow will be hauled from the site and disposed of at an area approved by the USFS.



Northwest Power Services, Inc.

# Buffalo River Hydroelectric Project

FERC Project # 1413

Start of Construction: August 1, 2005

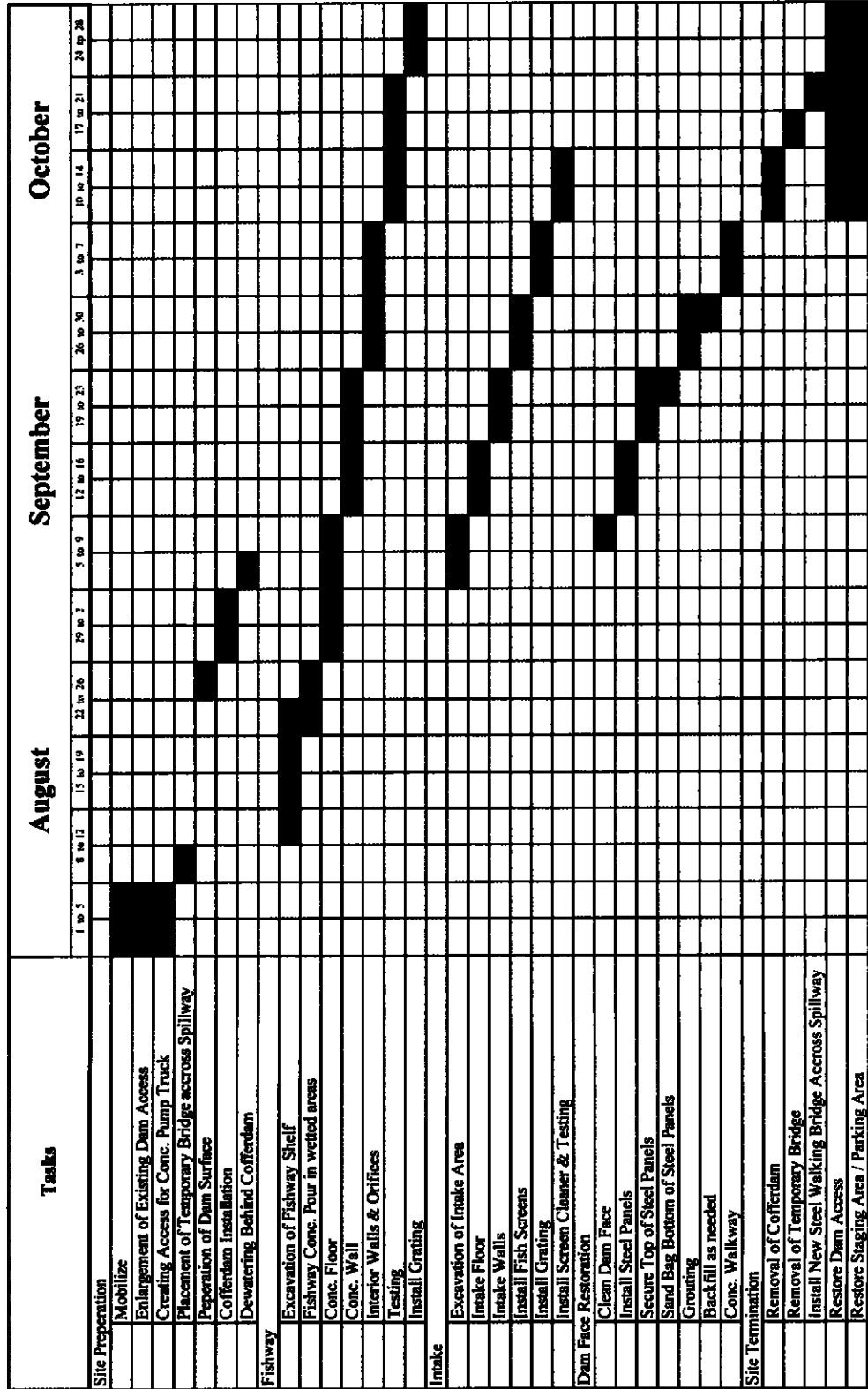


Figure A-4

Filter fences or straw bale barriers will be established on the downhill side of all temporary construction material or spoil storage areas in order to intercept and filter runoff (Figure A-1). Barriers will be inspected frequently, including after every major precipitation event, and will be promptly repaired or replaced as necessary.

Upon completion of construction, all stockpiled material will be removed from the staging area. The area will be re-contoured for parking or re-vegetated as described in the vegetation and recreation management plans.

### **3.2.8 Dam Access**

Vegetation disturbance and removal will be necessary on the slope separating the dam from the staging area for a variety of construction purposes. Sediment fences and decomposable fiber mats/or straw mulch will be installed on portions of the re-seeded access slope between the staging area and the dam (Figure A-3) in order to control sediment from run-off in this area until the vegetation becomes established. Sediment barriers will be inspected frequently, including after every major precipitation event, and will be promptly repaired or replaced as necessary. When sediment deposition behind the silt fences or straw bales accumulates to depth of six inches or more, the sediment will be removed to restore the efficiency of perimeter control. The sediment removed will be added to topsoil or disposed of depending on the potential of the material to support plant growth.

Portions of the access slope between the staging area and the dam that will not be disturbed further in construction will be re-vegetated (see vegetation management plan). This process will be repeated as necessary to protect newly exposed unconsolidated material as construction proceeds.

## **4.0 Monitoring and Maintenance**

The contractor selected for this project will review this plan and provide written confirmation as to this fact.

### **4.1 Construction Area**

The project area will be inspected daily by the on-site construction manager for soil erosion, sediment production, and the condition of erosion control devices. Corrective actions may include, but will not be restricted to, replacement of straw bale barriers & sediment fences, installation of additional straw bale barriers or silt fences, installation of additional erosion control blankets on seeded areas that show signs increased erosion, re-seeding, and the adding of additional mulch. A diary (check list) will be kept of the daily inspections. Informal reports will be filed weekly with the Forest Service.

After construction has been completed, frequent inspections by the project operator will

include an appraisal of erosion and sedimentation at the site. Corrective action will be taken as necessary in coordination with the Forest Service.

#### **4.2 Buffalo River Water Quality**

Water quality (Turbidity) will be monitored at two locations on the Buffalo River. The upstream station will be established above all construction activities. The below station will be at the confluence with the Henrys Fork River. Continuous monitoring will occur (one hour time steps) for the duration of construction. A compliance report will be furnished to the IDEQ, USFS, IDFG, USFWS and the HFF within three months of the conclusion of construction.

The water quality monitoring criteria will be considered as follows: During construction, turbidity shall not exceed 10 percent of background when background is greater than 50 NTU's and shall never exceed an absolute level of 25 NTU's over background. When background is less than 50 NTU's, the difference from background shall not exceed 5 NTU's over background. The licensee should stay within the state standards for turbidity and pH during the construction.

#### **5.0 Summary**

Measures to control erosion, dust, and sediment production in the vicinity of the Buffalo Dam Hydroelectric Project have been prescribed for implementation during construction. Site inspections and monitoring of construction activities, re-vegetation, and water quality will ensure the prevention of soil erosion and sedimentation in project area.

#### **6.0 Comments and Responses**

##### **ID DEQ April 20, 2005**

**ID DEQ Comment 1:** Section 3.1.1. The temporary storage area should be separated from the river with silt fence or suitable erosion control best management practice.

**Response:** Appropriate erosion control structures will be utilized along the perimeter of the temporary storage area.

**ID DEQ Comment 2:** Section 3.2.1. The turbidity of the river below the location of the coffer dam and removed water shall not exceed state water quality standards (see IDAPA 58.01.02 for details). Real time monitoring should be reviewed during the activity so that construction or pumping activities can be curtailed if necessary.

**Response:** The turbidity of the river below the location of the coffer dam and removed water will not exceed state water quality standards and the applicant will work closely with IDEQ to outline an onsite plan for reviewing real time monitoring data.



USFS April 21, 2005**USFS Comment 1**

3.1 - 1 The Forest requests that the staging area be moved to an approved location southwest of the proposed staging site. The staging area needs specific locations to be identified for spoil storage, a hazardous materials storage area and a concrete cleaning area to avoid unnecessary site impacts. The plan needs to state specifically that the area outside of the staging area will not be used. The edge of the spoil piles needs to be at least 50 feet away from the slope break near the edge of the trees not 50 feet from the river. The hazardous materials need to be located at least 150 feet from the river. A suggestion would be to place it in the southeast corner of the staging area. The staging area needs to have a silt fence or equivalent between it and the river. Restoration of the staging area needs detailing in the Revegetation Plan.

**Response:** The applicant has moved the temporary storage area for hazardous materials and concrete cleaning to the southeast corner of the stage area as seen in Figure A-1.

**USFS Comment 2**

3.1 - 2 It is stated that disturbances beyond permanent roads and parking areas will be revegetated. Treatment of access roads, project roads and parking areas need to be defined and approved in the recreation site plan, Road Use Permit and Special Use Permit. A recreation site plan has not yet been prepared (see comments under Recreation Plan). The Erosion Control Plan should state the specific page and section in the Vegetation Management Plan that addresses how areas will be revegetated.

**Response:** Specific revegetation efforts can be found in the Vegetation Management Plan on pages J6-13.

**USFS Comment 3**

3.1 - 4 Practices to confine, remove and dispose of excess concrete, cement, and other mortars or bonding agents, including measures for washout facilities needs to be incorporated. A silt fence or equivalent needs to surround the cleaning area. Any waste materials deposited during the cleaning process are to be removed and disposed of properly. Runoff into the river is not permitted. Equipment cleaning needs to be done at least 50 feet away from the slope break near the edge of the trees.

**Response:** The applicant is in agreement.

**USFS Comment 4**

3.1 -5 The Forest requests that decomposable fiber mats are replaced by hydro mulch as hydro mulch is less susceptible to impacts by animals that sometimes get entangled in fiber mats. If straw or straw bales are used they shall be certified weed free. Figure A-3 shows an access road in red to the dam with no explanation of surfacing or how it will be made passable nor does the Vegetation Management Plan provide details concerning its restoration. No detail is given on the concrete truck access, the more native soil that can be left in place the easier site restoration will be.

**Response:** Hydro mulch will be substituted for fiber mats where necessary and all straw or straw bales used will be certified weed free. Vegetation and large substrate will be removed to create a temporary access road (Figure A-3). Because surfacing material that could aid in equipment access would hinder revegetation efforts, none have been proposed at this time.

**USFS Comment 5**

3.1 -7 The agreement and terms of use for the Riverside Road access road will be covered under the Road Use Permit Condition # 8.

**Response:** The applicant is in agreement

**USFS Comment 6**

In general sediment and erosion control should include project perimeter controls such as silt fencing, fiber wattle barriers and/or dikes, and ditches, as needed. To the extent practicable, best management practices (BMPs) will be used to contain, control and screen stormwater from entering the river and associated wetlands and/or riparian areas. Inside the perimeter protection, BMPs will be used to limit and control the velocity of water running over and through the construction site to limit the amount of sediment picked up by stormwater. This will include placing check dams or channel liners in drainage channels, covering high use areas with coarse materials that will allow water infiltration but resist erosion and prevent rutting and mud puddles from rutting during storms.

**Response:** The applicant will continue to work closely with the Forest Service in prescribing the best management practices associated with the project's erosion control.

**USFS Comment 7**

Construction of the New Intake Structure

3.2.1 How and to what degree will the existing rock outcrop in the area by the intake be modified? Incorporate state standards for turbidity as listed in 4.2 if standards are exceeded work should be halted until turbidity can be minimized to acceptable standards.

**Response:** There are no plans to significantly alter the rock outcropping near the intake structure. The applicant is committed to completing construction in a manner that will not compromise the visual quality of the feature. State standards for turbidity will be incorporated.

**USFS Comment 8**

Water pumped from any in-river excavation or other disturbances should not be placed into any waterbody until it meets Idaho Department of Environmental Quality (IDEQ) water quality standards. The water should be land applied to suitable uplands or stored in settling basins that are large enough to treat all pumped water.

**Response:** The turbidity of the river below the location of the coffer dam and removed water shall not exceed state water quality standards (see IDAPA 58.01.02 for details) and the applicant will work closely with IDEQ to outline an onsite plan for reviewing real time monitoring data.

**USFS Comment 9**

Sealing the Upstream Face of the Dam

3.2.2 Incorporate state standards for turbidity and pH as listed in 4.2 if standards are exceeded work should be halted until turbidity or pH can be minimized to acceptable standards. Cleaning of concrete and grout implements needs to be done at least 50 feet away from the slope break near the edge of the trees and within the confines of a defined area within the staging site. Waste and residue from the cleaning site must be removed and disposed of properly offsite.

**Response:** The applicant is in agreement.

**USFS Comment 10****Pre-Construction Excavation**

3.2.3.1 Include state standards listed in 4.2, if standards are exceeded work should be halted until turbidity or pH can be minimized to acceptable standards. Rock generated by construction activities, such as fishway shelf excavation, may be used for construction purposes. Use of native rocks, such as rocks within the stream channel or dam face, for construction purposes is prohibited. Disturbance to the stream channel should be addressed so that at the end of the project the area looks much like it did at the beginning of the project while insuring the fish ladder functions appropriately.

**Response:** The applicant is in agreement.

**USFS Comment 11****Construction of the Fish ladder**

Berms need to be removed and the area left in a manner that the aesthetics are preserved and the fish ladder functions appropriately. Include state standards for turbidity and pH listed in 4.2 of which if standards are exceeded work should be halted until turbidity or pH can meet state standards.

**Response:** The applicant is in agreement

**USFS Comment 12****Staging Area**

3.2.7 Hydro mulch is preferred over fiber mats (such as excelsior rolls with plastic mesh) since the plastic mesh is an entanglement hazard for people and wildlife.

**Response:** Hydro mulch will be substituted for fiber mats where necessary and all straw or straw bales used will be certified weed free. Vegetation and large substrate will be removed to create a temporary access road (Figure A-3). Because surfacing material that could aid in equipment access would hinder revegetation efforts, none have been proposed at this time.

**USFS Comment 13****Dam Access**

3.2.8 Restoration of this area needs to be done in coordination with the site plan. Hydro mulch is preferred over fiber mats.

**Response:** The applicant is in agreement.

**USFS Comment 14****Construction Area**

4.1 Specify certified weed free straw will be used as identified in the revegetation section.

**Response:** All straw or straw bales used will be certified weed free.

**USFS Comment 15****Buffalo River Water Quality**

4.2 The Idaho DEQ standard for pH of 6.5-9.0 needs to be incorporated. The lower monitoring site should be within the Buffalo River proper above the confluence with the Henrys Fork. Field monitoring should be done with field calibrated equipment so if standards are exceeded, construction can be stopped immediately and construction methods can be evaluated and changed to ensure standards are met. Any violations along with changes made to avoid further violations shall be reported within one day of the occurrence to the designated Forest Service Inspector and Troy Saffle

of Idaho DEQ. Any resulting fish kills and there extent (although not expected) shall be reported immediately to Idaho Fish and Game and the Forest Service. All state standards need to be met.

**Response:** The applicant is in agreement that pH levels be monitored during the placement of concrete or during grouting.

#### **USFS Comment 16**

It is not sufficient to provide continuous monitoring and then report violations post construction. Field monitoring is recommended during times likely to create problems such as: the initial dewatering and building of cofferdams, sheet pile placement and fish ladder construction. Field monitoring of pH is needed during grouting procedures and cement work. The Forest recommends an additional monitoring site or at least grab samples be taken in the immediate discharge area or point of impact.

**Response:** The applicant is in agreement and will add an additional grab sample location in the immediate discharge area/point of impact. In addition, grab samples will be collected downstream of the project but within the Buffalo River proper above the confluence with the Henrys Fork.

HFF April 22, 2005

#### **HFF Comment 1**

##### **3.2.3.2 Construction of the Fish Ladder:**

Daily grab samples will be taken downstream of the fish ladder during construction. Where and when will the grab samples be taken?

**Response:** Grab samples will be taken during periods of construction with potential to impact water quality. Grab samples will be collected at a point of discharge/area of impact and collected just downstream of the project area but within the Buffalo River proper above the confluence with the Henrys Fork.

#### **HFF Comment 2**

##### **4.2 Buffalo River Water Quality:**

A compliance report of water quality monitoring will be furnished to the listed organizations three months after completion of the project. However, no mention is made of providing water quality information to the organizations during the construction phase. It is recommended that this information be made available to the organizations on a weekly basis during the construction.

**Response:** Water Quality data will be passed on to the listed organizations during the construction phase as it becomes available.

## ***Section B***

# ***Temporary Emergency Action Plan***

# Temporary Emergency Action Plan

Article 304 of the License requires a Temporary Emergency Action Plan be developed. This plan is intended to fulfill this requirement, the following is the Article from the license:

***Article 304. Temporary Emergency Action Plan. At least 60 days before starting any license-related construction activities, the licensee shall submit one copy to the Division of Dam Safety and Inspections – Portland Regional Engineer and two copies to the Commission (one of these shall be a courtesy copy to the Director, Division of Dam Safety and Inspections), of the Temporary Emergency Action Plan (TEAP) for the Commission's review and approval. The TEAP shall describe emergency procedures in case failure of a cofferdam, large sediment control structure, or any other water retaining structure that could endanger construction workers or the public. The TEAP shall include a notification list of emergency response agencies, a plan drawing of the proposed cofferdam arrangement, the location of safety devices and escape routes, and a brief description of testing procedures.***

## PROPOSED PLAN

The Licensee proposes the following Temporary Emergency Action Plan for review and approval by FERC.

### Emergency Procedures in case of failure of the cofferdam

In the situation of a failure in the cofferdam we are planning, due to the low head, to have a path clear for all workers to escape safely and quickly. The path will be located to the south end of the construction site, and on to the existing dam, next to the service weir, see Figure B-1. All workers will be informed of the path and its importance to keep it clear and accessible. The public will be restricted from entering the construction area thus decreasing the possibilities of accidents.

### Emergency Procedures in case of failure of the large sediment control structure

We are not planning to have a sediment control structure due to the low amount of water and sediment anticipated during the construction activities.

Emergency Response Agencies

Fremont County Sheriff  
Ralph Davis- County Sheriff  
(208) 624-4482

IDEQ Regional Office (Idaho Falls)  
Jim Johnston-Regional Administrator  
Troy Saffle-Water Quality Manager  
(208) 528-2650

USFS Island Park Ranger District  
Adrienne Keller-District Ranger  
(208) 558-7301

Northwest Power Services, Inc  
Brent Smith, President  
(208) 745-0834 office  
(208) 521-2473 cell

Fall River Rural Electric  
Mr. Dee M. Reynolds -Manager  
(208) 652-7431

	Office	Cell	Home
Mr. Harry T. Hall	(503) 552-2700	(503) 706-8842	(503) 636-1111
Mr. Pat Regan	(503) 522-2741	(503) 706-8733	(503) 534-2621

Drawings

See Figure B-1.

Testing Procedures

The plan will be tested on the first work day after the coffer dam is installed and water pumped out. The test will include having the workers use the exit ramp.

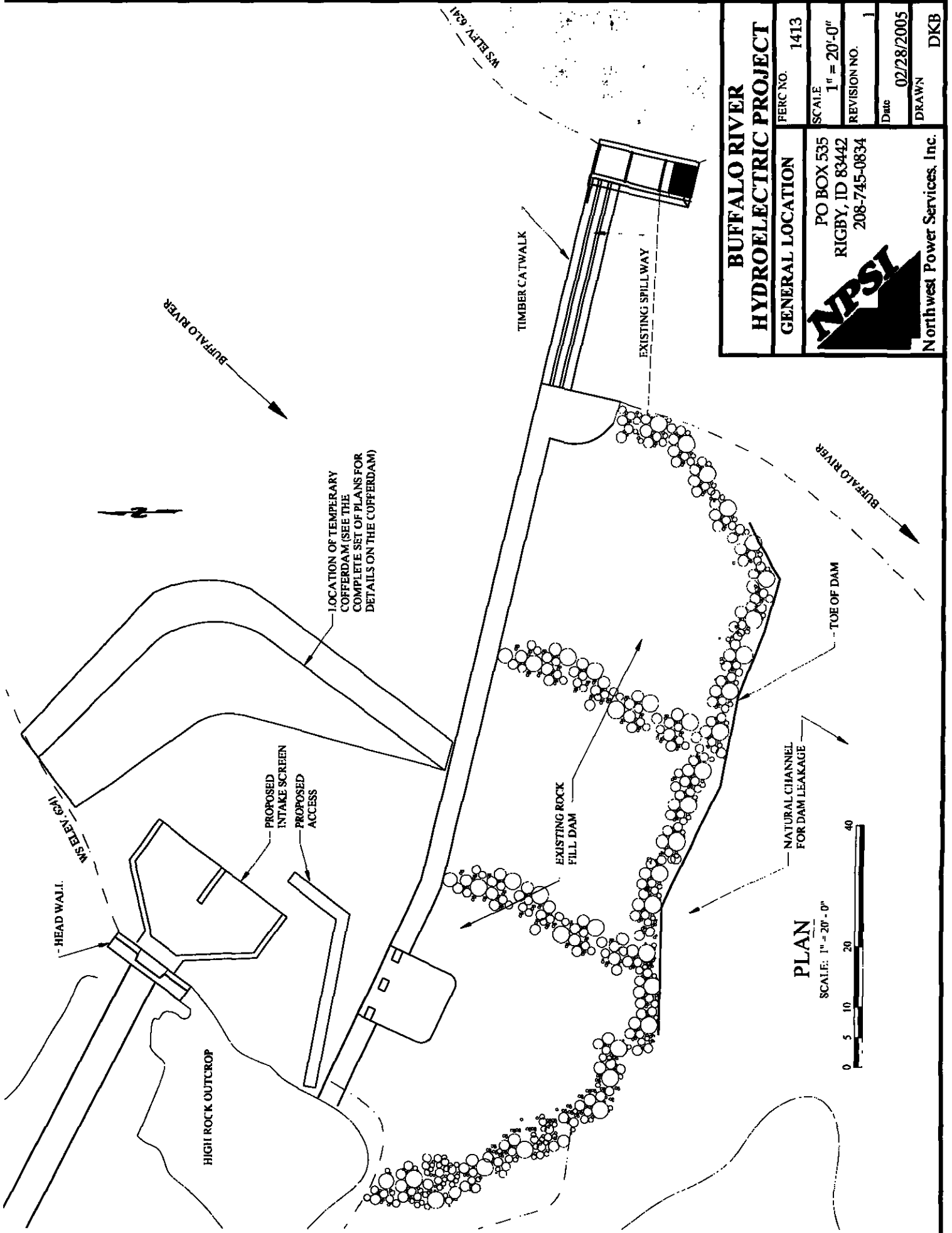


FIGURE B-1



# *Section C*

## *Hazardous Substance Plan*

# Oil and Hazardous Substances Storage, Spill Prevention, and Cleanup Plan

## 1.0 Introduction

A license was issued to Fall River Rural Electric Cooperative, Inc. (Fall River) in November of 2004 by the Federal Energy Regulatory Commission (Commission) for the alteration and continued operation of the Buffalo River Hydroelectric Project. The 250-kilowatt (kW) run-of-river project is located on the Buffalo River near its confluence with the Henry's Fork of the Snake River, north of Ashton, in Fremont County, Idaho. The license stipulates several terms and conditions which must be met with approval from various resource agencies. The purpose of this document is to describe the site specific oil and hazardous substances storage, spill prevention, and clean up measures to be implemented in order to prevent any form of contamination at the project site. This document has been developed in response to Article #404 and US Forest Service Condition #6 of the license which states:

***Within six months of license issuance, the licensee shall file for Commission and Forest Service (USFS) approval, a Hazardous Substances Plan to protect fish and wildlife resources from adverse effects associated with fuel and hazardous substance spills at the project. At a minimum, the Licensee shall:***

***-Outline the Licensee's procedures for reporting and responding to releases of hazardous substances, including names and phone numbers of all emergency response personnel and their assigned responsibilities,***

***-Maintain in the project area, a cache of spill cleanup equipment suitable to contain any spill from the project,***

***-Semi-annually inform the Forest Service of the location of the spill cleanup equipment on National Forest System lands and the location, type, and quantity of oil and hazardous substances stored in the project area and,***

***-Inform the Forest Service immediately of the nature, time, date, location, and action taken for any spill affecting National Forest System lands and Licensee adjoining fee title property.***

***In addition to the provisions specified in Condition No. 6, the plan shall include, at a minimum:***

***-A description of the procedures that will be followed in the event of fuel or hazardous substances spill, including cleanup and notification of the USFS, the Fish and Wildlife Service (USFWS), the Idaho Department of Fish and Game (IDFG), Idaho Department of Environmental Quality (IDEQ), and the Commission should fuel or hazardous substances spill into or adjacent to any water body within or below the project; and***

***-An implementation schedule***

***The licensee shall prepare the plan after consultation with the IDFG, USFS, USFWS, and IDEQ. The licensee shall include the plan documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the agencies, and specific descriptions of how the agencies' comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the agencies to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information. A courtesy copy of the plan shall be filed with the Commission's D2SI-PRO and the Director, D2SI.***

***The Commission reserves the right to make changes to any plan submitted. Upon Commission approval, the plan becomes a requirement of the license, and the licensee shall implement the plan or changes in the project operations or facilities, including any changes required by the Commission.***

## **2.0 Construction Phase**

### **2.1 Hazardous Substances to be on Site**

The majority of hazardous material at the project site will be engine fuels and lubricants. A fuel truck may be used to service heavy construction equipment, but no diesel fuel will be stored on site and all fueling will take place in the staging area located southeast of the proposed fish ladder and project site. Pickup trucks and light utility vehicles will be fueled and maintained off-site. Additional hazardous materials that may be used in the project area include concrete curing compounds, concrete form oils, cutting torch gases, lubricants, cleaning solvents, and propane for temporary heat.

## 2.2 Storage and Containment of Hazardous Materials

The sites for temporary storage of hazardous materials and servicing equipment (including fueling) will be located within the staging area (Figure C-1) which is located approximately 120 feet from any perennial waters, or as designated by the USFS. Contractors and construction personnel will be familiar with the storage and fueling area prior to any construction activity. The documentation of this requirement will be available onsite for each construction contractor (written verification). All equipment will be fitted with spill-proof caps and checked regularly for leaks. Hazardous substances will be stored in a trailer and this storage trailer will only remain on-site during construction activity.

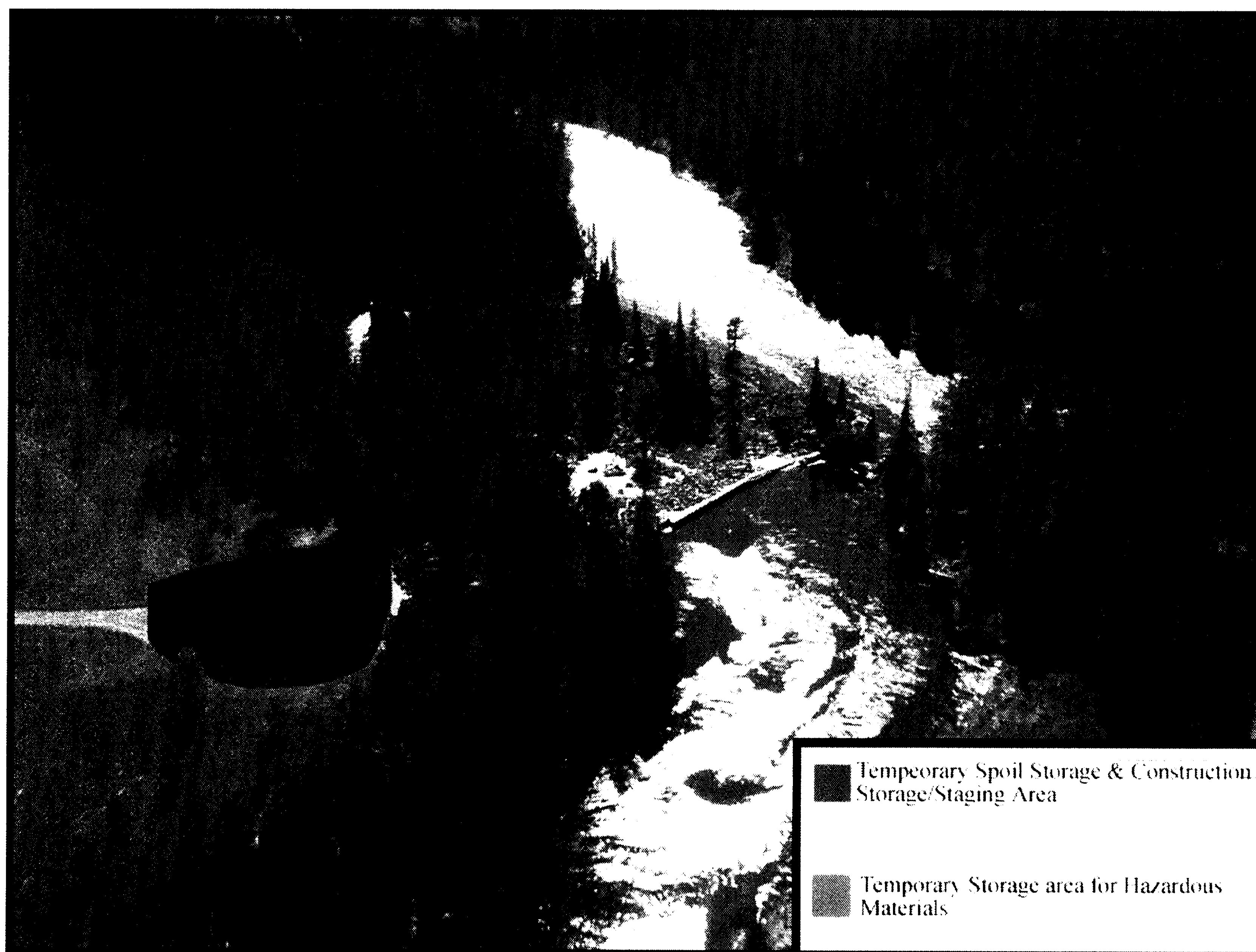


Figure C-1

## 2.3 Cleanup and Spill Containment

The area around the hazardous substance storage trailer will be inspected routinely and documented in writing. If necessary, any contaminated soil will be removed for disposal in an approved disposal facility. In the event of a spill, equipment will be on site to quickly absorb or dike and isolate the site. Reporting and Remediation guidelines as required by IDEQ, OSHA, and EPA will be followed. In the event of a spill, the project superintendent will contact Fall River, USFS, and IDEQ immediately following any spill to inform these agencies of the nature, time, date, location and action taken. This information will also be

made available to IDFG, USFWS, and the Commission. Fueling of equipment will occur at least 150 feet from any stream waterbody, except for equipment that is permanently stationed (i.e., crane) or onsite pumps that are continuously running. In these instances precautions will be taken so if spilled, fuel will be contained and contamination prevented. Machinery and implements that are used during the project will be in good repair, and free of excessive leaks. When changing hydraulic lines, care will be taken to keep hydraulic fluid from entering any waterbody or soils.

#### **2.4 Communication with the Agencies**

The project superintendent will report in writing to the USFS, USFWS, IDFG, IDEQ on a monthly basis on the location of spill cleanup equipment, and the location, type, and quantity of oil and other hazardous substance stored on the site. Any minor corrective actions will also be noted in these reports.

### **3.0 Operation Phase**

#### **3.1 Hazardous Substances and Storage**

Petroleum products will be required in small quantities (five gallons or less) for general maintenance at the plant. A cache of petroleum clean up diapers will be kept in close proximity to the storage area in the case of a spill.

#### **3.2 Cleanup and Spill Containment**

If a spill should occur, the spill will immediately be diked and any contaminated soil will be removed for the proper disposal at an approved facility. The project operator will contact the USFS and the IDEQ immediately following any spill to inform these agencies of the nature, time, date, location and action taken. This information will also be made available to IDFG, USFWS, and the Commission.

#### **3.3 Communication with the Agencies**

When the plant becomes operational, FRRE operating personnel will designate a contact person to report periodically to the USFS, USFWS, IDEQ, and IDFG on what types of hazardous substances are being stored on site. In the event of a spill, this contact person will contact the agencies as soon as possible to report on the nature, time, date, location and action taken.

### 3.4 Emergency Contacts

IDEQ Regional Office (Idaho Falls)  
Jim Johnston-Regional Administrator  
Troy Saffle-Water Quality Manager  
(208) 528-2650

USFS Island Park Ranger District  
Adrienne Keller-District Ranger  
(208) 558-7301

### 4.0 Comments and Responses

USFS April 21, 2005

#### **USFS Comment 1**

##### **2.1 Hazardous Substances to be on Site**

Please add: fueling of equipment will occur at least 150 feet from any stream waterbody, except for equipment that is permanently stationed (i.e., crane) or onsite pumps that are continuously running. In these instances precautions will be taken so if spilled, fuel will be contained and contamination prevented. Machinery and implements that are used during the project will be in good repair, and free of excessive leaks. When changing hydraulic lines, care will be taken to keep hydraulic fluid from entering any waterbody or soils. It is recommended as a preventative measure that refueling in the staging area be done within a containment cell.

**Response:** The licensee is in agreement.

#### **USFS Comment 2**

##### **2.2 Storage and Containment of Hazardous Materials**

Locate the hazardous material storage area in the southeast corner of the staging area at least 150 feet from the stream. Fueling and other chemicals, including small fuel cans, oil and hydraulic fluid containers and concrete chemicals, will be stored at least 150 feet from any stream channel, wetland or waterbody and must be fully contained.

**Response:** The licensee is in agreement

#### **USFS Comment 3**

##### **2.3 Cleanup and Spill Containment**

Spill containment kits, capable of containing the amount of hazardous products capable of being spilt, will be kept at the construction site and used in case of spills. Delete "the contaminated soil will be removed and disposed of in a manner predetermined by the USFS" and replace with "Reporting and Remediation guidelines as required by IDEQ, OSHA, and EP A will be followed."

**Response:** The licensee is in agreement.

## ***Section D***

# ***Fishway & Fish Screen Monitoring Plan***

# Fishway and Fish Screen Effectiveness Monitoring, Evaluation, and Maintenance Plan

## 1.0 Introduction

A license was issued to Fall River Rural Electric Cooperative, Inc. (Fall River) in November of 2004 by the Federal Energy Regulatory Commission (Commission) for the alteration and continued operation of the Buffalo River Hydroelectric Project. The 250-kilowatt (kW) run-of-river project is located on the Buffalo River near its confluence with the Henry's Fork of the Snake River, north of Ashton, in Fremont County, Idaho. The license stipulates several terms and conditions which must be met with approval from various resource agencies including a fishway and fish screen effectiveness monitoring, evaluation, and maintenance plan. This document has been developed in response to Article #407 of the license which states:

***Within one year of license issuance, the licensee shall file for Commission approval a plan for conducting post-construction monitoring and evaluation of the fishway and fish screen required by Articles 405 and 406 for a period of 3 years and every third year thereafter for the term of the license. In addition to the monitoring provision specified in Condition No. 14 of Appendix A, the plan shall include at a minimum, a provision for monitoring and documenting fishway use and effectiveness; recording the species, length, and quantity of fish found impinged on the fish screen; a description of the procedures for maintenance of the fishway and fish screen; and a schedule for:***

***-implementation;***

***-consultation with the Idaho Department of Fish and Game (IDFG), US Forest Service, US Fish and Wildlife Service, and Henry's Fork Foundation (Foundation) concerning the results of the monitoring and evaluation; and***

***-filing the monitoring and evaluation results, the agencies' and Foundation's comments, and the licensee's response to the agencies' and Foundation's comments with the Commission in years when monitoring takes place.***

***The licensee shall prepare the plan after consultation with the IDFG, Forest Service, FWS, and Foundation. The licensee shall include with the plan documentation of consultation, copies of comments and***



***recommendations on the completed plan after it has been prepared and provided to the agencies and Foundation, and specific descriptions of how the agencies's and Foundation's comments are accommodated by the plan. The licensee shall allow minimum of 30 days for the agencies and Foundation to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.***

***A courtesy copy of the plan shall be filed with the Commission's D2SI-PRO and the Director, D2SI. The Commission reserves the right to require changes to the plan. Implementation of the plan shall not begin until the licensee is notified by the Commission that the plan is approved. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.***

***The Commission reserves the right to make changes to any plan submitted. Upon Commission approval, the plan becomes a requirement of the license, and the licensee shall implement the plan or changes in the project operations or facilities, including any changes required by the Commission.***

## **2.0 Fishway and Fish Screen Effectiveness Monitoring, Evaluation, and Maintenance Objectives**

Through combination of meetings and written correspondence in 2003 and the early portion of 2004 a tentative post-construction fishway and fish screen monitoring and maintenance plan was drafted by Northwest Power Services based on recommendations from Ecosystems Research Institute (ERI), USFS, IDFG, USFWS, and the Foundation.

### **2.1 Fish Screen Monitoring**

Given the installation of a one-quarter inch screen and an approach velocity of 0.8 feet per second, the licensee is responsible for documenting fish mortalities found on the screen. During the first three years of operation and every third year thereafter, operating personnel will record the number, type, and length of fish found on the screen daily (except Saturday and Sunday). The data will be made available to the USFS, IDFG, USFWS, and the Foundation for informational purposes. No physical or operational changes will be made once construction has been completed provided the facilities are built to specifications and continue to meet those specifications.

The data will be in spreadsheet format with date, species type, fish length, and likely cause of death provided, as noted above. The data will be submitted on a semi-annual basis July and December).

## **2.2 Fish Ladder Monitoring**

The licensee is responsible for providing daily (except Saturday and Sunday) on-site monitoring of the fish ladder to document fish use and efficiency of the structure. A fish trap will be installed on the upstream exit of the ladder. Operating personnel will inspect the trap daily Monday through Friday for a period of one year. Data collected will include date, fish species and fish length. Data will be provided in a spreadsheet format on a semi-annual basis (July and December). Review of the data will be undertaken after one complete year to determine if monitoring times can be consolidated to correspond to times when the ladder is used. Any reduction in monitoring times will require a consensus of the IDFG, USFS, USFWS and the HFF. The monitoring time period will be for three year and every third year thereafter. The licensee is also responsible for minor modifications to enhance passage, such as the size, shape, and position of flow orifices (if applicable), and to provide attraction flows as well as adequate flow within the ladder.

## **3.0 Agency Cooperation and Design Modifications**

The general monitoring plans outlined in sections 2.1-2.2 were included in a letter drafted by Northwest Power Services on April 15, 2004 (Appendix D-1). The letter was sent to the Commission, USFS, USFWS, IDFG, Foundation, and Idaho Rivers United for comments. IDFG, USFS, and the USFWS all submitted comments in support of the proposed plans (Appendix D-1). The final design of the fish ladder has not been completed. However, the design will be reviewed and approved by the USFS, USFWS, IDFG, and the Foundation prior to any construction taking place.

## **4.0 Comments and Responses**

### **IDFG April 13, 2005**

#### **IDFG Comments 1**

Section 2.1 Fish Screen Monitoring states that the approach velocity of water toward the fish screen will be 0.8 feet per second. We request that basic measurements be made to establish this approach velocity upon plant operation. Further, we request that you attempt to document a zero 'sweeping' velocity along the fish screen.

**Response:** The applicant will measure the approach velocity and complete the necessary measures to document a zero sweeping velocity along the fish screen.

#### **IDFG Comment 2**

Section 2.2 Fish Ladder Monitoring - Please provide a diagram or engineering drawing of the fish trap to be used in monitoring upstream fish used of the fishway. We recognize that the drawing may be conceptual at this point. We request that the monitoring project be designed to verify that downstream fish passage through the fishway occurs as well as upstream fish passage. We recognize the majority of flow, and presumably fish, will wash downstream via the overflow.

**Response:** Please see Figure D-1, end of the section, for a conceptual diagram of the fish trap that will be located on the upstream end of the fishway. The applicant will continue to work with the IDFG, USFS, and the HFF in refining the appropriate fish collection device's to monitor fish passage.

**IDFG Comment 3**

Please state that you will allow access to IDFG, and the U.S. Forest Service (USFS) to all fishway facilities and screens in order to monitor conditions. We intend to take flow measurements within the fishway at varying water levels in hopes of achieving the best fish passage conditions possible by altering baffle shapes and orifice positions if necessary.

**Response:** IDFG, USFS and HFF will be allowed access all fishway facilities and screens in order to monitor conditions.

**USFS April 21, 2005****USFS Comment 1****2.1 Fish Screen Monitoring**

Change first sentence spelling of mortalities to mortalities. In addition to recording species, number and length please add likely cause of death such as: angling, impingement, or avian. Predators in the area are likely to key into mortalities if they are occurring and will likely remove many dead fish before they can be enumerated. Observations should include looking for signs of predators (presence, tracks, scat, etc.) and recording these instances. To minimize possible loss to predators, screens need to be cleaned and checked early in the morning and late in the afternoon.

**Response:** The applicant is in agreement that cause of death should be included in the fish screen monitoring investigations. However, the applicant feels that daily monitoring and cleaning of the screens is sufficient.

**USFS Comment 2**

Only occasional mortalities are expected. If high numbers of mortalities are observed these will be reported immediately. Reporting of mortality data is requested to be given in an electronic format using Microsoft Excel or in a format capable of being imported easily into Excel.

**Response:** The applicant is in agreement.

**USFS Comment 3****2.2 Fish Ladder Monitoring**

Please add a sentence stating that the licensee shall be responsible for the term of the license to ensure proper function of the ladder. The ladder shall be considered properly functioning when it is working as designed with the orifices and auxiliary intake being free of debris with a uniform depth of water over each weir and the entrance submerged to the proper depth with sufficient flows to provide attraction to the entrance. Proper function of the ladder needs to be assured daily and documented on a weekly basis with frequency and type of problems reported.

**Response:** The applicant will ensure that the ladder functions properly, as it functioned at the end of the construction period, for the term of the license.

**USFS Comment 4**

The fish trap that is to be installed at the exit of the fish ladder needs to conform to the following:

- have a screen or vertical opening of no greater than 5/8"
- be 3-5 feet wide and at least 5 feet long to provide refuge from intake
- be secured to prevent tampering with access provided to IDFG, HFF, and USFS,
- designed to allow processing in the dry
- have a secured opening where fish can pass quickly through when not being captured
- be designed so as to prevent fall back into the fish ladder of trapped fish
- be designed to allow crowding of the fish to ensure efficient capture for processing
- be removable
- designed so flows to the ladder can be shut off for maintenance or inspection

**Response:** Please see Figure D-1, end of the section, for a conceptual diagram of the fish trap that will be located on the upstream end of the fishway. The applicant will continue to work with the IDFG, USFS, and the HFF in refining the appropriate fish collection device's to monitor fish passage.

**USFS Comment 5**

Under licensee responsibilities, please add that modifications to flow patterns below the dam could include minor restructuring of the dam face or approach channel to assure efficient attraction and passage. If sealing of the dam is not successful and a majority of water continues to leak through the dam it may be necessary to alter portions of the channel below the dam to facilitate fish finding the ladder.

**Response:** The success of grouting the face of the dam will be determined early in the construction process. The fishway's downstream exit pool and adjacent riverine area will be modified as necessary in a cooperative effort that involves the USFS, IDFG, and the HFF; within the scope of the proposed construction.

**USFS Comment 6**

As mentioned in NPSI April 15, 2004 letter the ongoing cooperation with HFF concerning the video monitoring is expected to continue. In this same spirit of cooperation it is expected that if agencies or NGOs wish to further investigate questions concerning the effects of the Buffalo River Hydroelectric Project that the licensee would provide assistance through on-site personnel.

**Response:** The licensee will continue to cooperate with the HFF concerning video monitoring in the fish ladder. The licensee will also continue to provide future cooperation through onsite personnel when available.

**USFS Comment 7**

It is requested that NPSI's April 15, 2004 letter regarding monitoring be incorporated by reference into the monitoring plan.

**Response:** The letter is in Appendix D-1 with the other agency correspondence.

**HFF April 22, 2005****HFF Comment 1**

No mention is made on the installation and maintenance of the video recording camera in the fish ladder. This camera (Henry's Fork Foundation equipment) had been used in the existing fish ladder to document upstream fish movement and was maintained (changing video tapes, etc) by the hydroelectric facility personnel. Furthermore, it is noted in Northwest Power Services letter of April 15, 2004 in appendix D-1 of this section of the plan that "operating personnel ... maintain recording equipment... for a period of three years .. ". Please include this language in the body of the construction plan document.

**Response:** The licensee will continue to cooperate with the HFF concerning video monitoring in the fish ladder. In addition, the licensee will provide the personnel necessary for the installation and maintenance of the video equipment.

**HFF Comment 2**

Data collected from the fish trapping at the ladder will be reviewed after one year. This review is proposed to help guide sampling when it is most efficient, i.e., data collection can be consolidated when the ladder is most used. In addition, it should also be included that data collection, i.e., frequency of trap checking, could potentially be expanded, when the fish ladder is most used.

**Response:** The licensee is in agreement, the potential expansion of data collection will be limited by the availability of onsite staff.

**HFF Comment 3**

It is also recommended that upon completion of the fish ladder that flow and velocity measurements are taken at several places within the ladder. This would allow an evaluation of the velocities predicted by the design criteria within holding pools and at orifices.

**Response:** The Licensee is in agreement.

**HFF Comment 4**

One of the primary objectives of facilitating better fish passage upstream of the Buffalo River hydroelectric project is to allow fish access to habitat in the Buffalo River, i.e., winter rearing habitat, which may be limiting in the Henry's Fork River. This access should facilitate increased recruitment of age 1-year old rainbow trout to the Henry's Fork River. As such, part of the objective of the dam modifications is to not only enhance upstream fish passage, but also to facilitate downstream passage. Therefore, some consideration should be given to an evaluation of the outmigration of juvenile trout at the Buffalo River hydroelectric facility. Previous attempts by the Henry's Fork Foundation to monitor juvenile out migration were not very successful because of the difficulty of sampling in the Buffalo River upstream of the hydroelectric facility. In addition, sampling at the dam was inefficient because of the movement of fish into the turbine intake or under the dam. The proposed work on the facility such as: installing a smaller screen on the turbine intake and sealing the face of the dam should provide an enhanced opportunity to determine the outmigration of fish at the dam. This is especially important given that upstream passage should be greatly enhanced with the proposed fish ladder. Given the above, it is recommended that the operating personnel be made available to check an out migrant trap if this type of sampling is deemed valuable by the reviewing organizations at a later date.

**Response:** The licensee has not proposed to monitor downstream migration. However, if

the HFF, IDFG or the USFS attempts such a study the licensee will aid in providing onsite personnel as available.

**HFF Comment 5**

It is recommended that water velocity measurements be taken in front of the fish screen to evaluate if approach velocities meet the 0.8 feet per second for which the screen is designed.

**Response:** The licensee is in agreement.

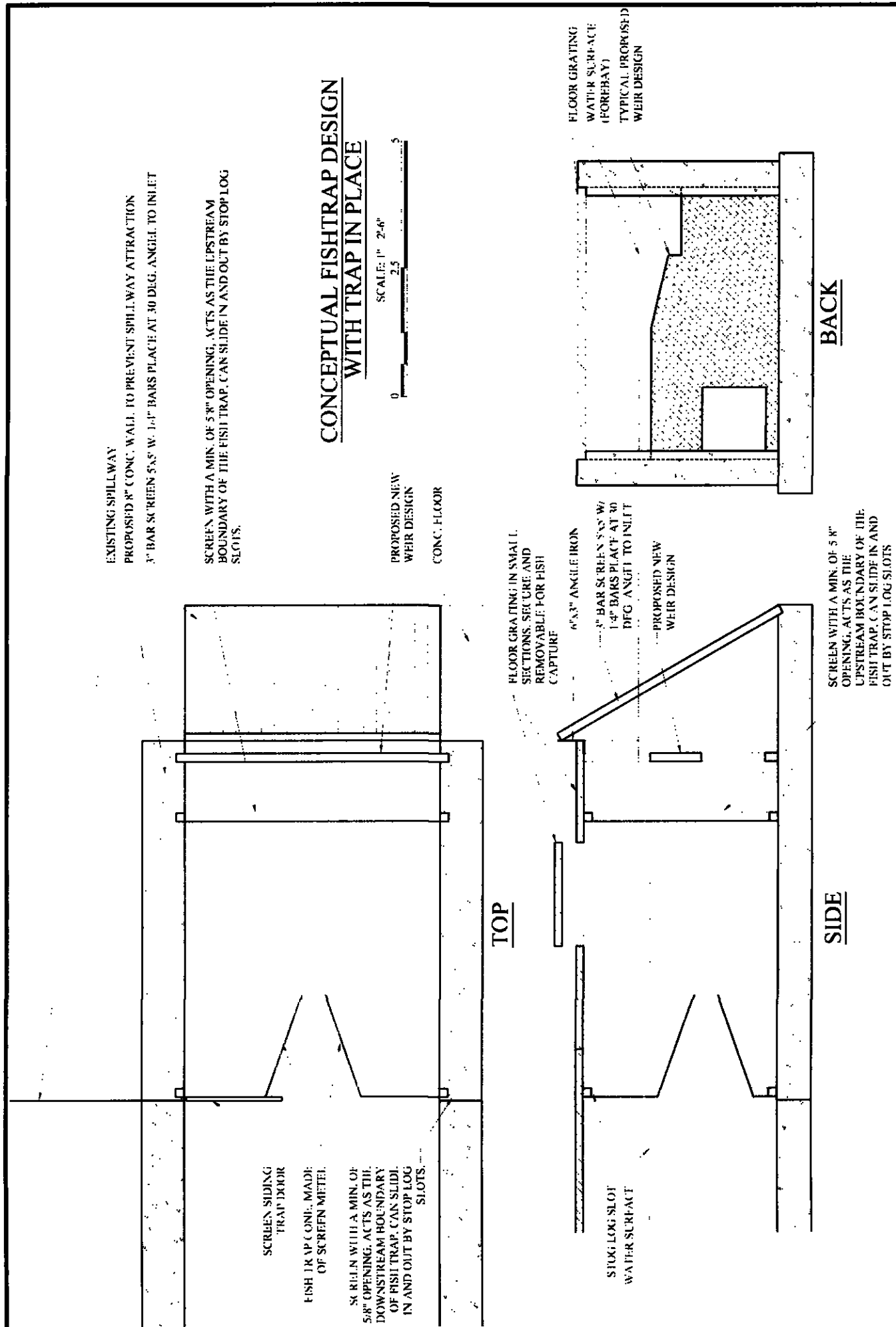


Figure D-1a

# CONCEPTUAL FISHTRAP DESIGN WITH TRAP OUT

SCALE: 1" = 2'-6"  
2.5

EXISTING SPILLWAY  
PROPOSED 8" CONC. WALL TO PREVENT SPILLWAY ATTRACTION  
3" BAR SCREEN 5'x5' W/ 1/4" BARS PLACE AT 30 DEG. ANGEL TO INLET

CONC. FLOOR

PROPOSED NEW  
WEIR DESIGN

TOP

FLOOR GRATING IN SMALL  
SECTIONS, SECURE AND  
REMOVABLE FOR FISH  
CAPTURE

6"x3" ANGLE IRON

3" BAR SCREEN 5'x5' W/  
1/4" BARS PLACE AT 30  
DEG. ANGEL TO INLET

STOG LOG SLOT  
WATER SURFACE

PROPOSED NEW  
WEIR DESIGN

SIDE

FLOOR GRATING  
WATER SURFACE  
(FOREBAY)  
TYPICAL PROPOSED  
WEIR DESIGN

BACK

Figure D-1b



***Appendix D-1***

***Agency Correspondence***



Northwest Power Services, Inc.

**ORIGINAL**

**FILED  
OFFICE OF THE  
SECRETARY**

**2004 APR 20 P 3 24**

**FEDERAL ENERGY  
REGULATORY COMMISSION**

**April 15, 2004**

**Ms. Magalie R. Salas, Secretary  
Federal Energy Regulatory Commission  
888 First Street, NE  
Washington, DC 20426**

**Re: Buffalo River Hydroelectric Project, FERC Project #1413**

**Dear Ms. Salas,**

**On March 23, 2004 a meeting was held with the US Forest Service and the Idaho Department of Fish & Game to review our March 3, 2004 letter which was in response to their comment letters of January 14, 2003 and January 16, 2004. The primary purpose of the meeting was to clarify the intent of the parties in their comment letters as to the extent of post construction monitoring of the proposed 1/4 inch fish screen as well as the proposed fish ladder. The following describes the purpose and extent of the post construction monitoring:**

**Fish Screen Monitoring:** It was agreed that with installation of 1/4 inch screens and a maximum designed approach velocity of .8 fps that there was no need to monitor entrainment into the project penstock. The primary purpose for monitoring the screens was to provide informational data to the agencies on the results of any impingement that may be occurring. It was agreed that during the first three years of operation and every third year thereafter, on-site operating personnel will record species, length and quantity of fish found on the screen and provide this data to the US Forest Service, Idaho Department of Fish & Game, US Fish and Wildlife Service and the Henry's Fork Foundation on a quarterly basis. This data will be for informational use only, there will be no requirement for physical or operational changes provided the facilities are built to specifications and continue to meet these specifications.

**Fish Ladder Monitoring:** It has always been agreed that the final design of the fish ladder would be reviewed and approved by the US Forest Service, US Fish and Wildlife Service, Idaho Department of Fish & Game and the Henry's Fork Foundation prior to construction of the ladder. In the March 23, 2004 meeting it was agreed that the licensee would provide monitoring by on-site operating personnel collecting the data needed to document usage and efficiency of the fish ladder, i.e. maintaining fish traps, maintain recording equipment, visual observations, and documentation for a period of three years and every third year thereafter. This information will be distributed

annually to the listed agencies. The licensee assumes responsibility for daily monitoring of the ladder to ensure it is operational.

In addition, the licensee agrees to be responsible for minor modifications to operations of the ladder, minor physical modifications to the ladder, and modifications to flow patterns above and below the dam where practical. Minor operational and physical modifications do not include modifications to turbine discharge or head regimes that could affect the available water utilized for generation purposes provided the dam remains relatively well sealed and adequate flows remain available over the dam for fish passage/attractant flows. Without a completed design for fish passage the amount of water needed is unknown. It is anticipated that 40 cfs for fish passage/attractant flows over the dam would be sufficient. It should not be construed however, that 40 cfs or any amount more or less than the existing bypass flow regime is sufficient to attract fish to the mouth of the Buffalo River and provide access to the dam. Physical modifications shall not include modifications to the concrete or structural aspects of the ladder. Minor operational and physical modifications would include modifications within the fish ladder such as size, shape, and location of orifices or baffles. If a nature-like fishway is designed, modifications may include periodic adjustments or placing of large rocks within the structure.

Modifications to flow patterns above and below the dam could include minor restructuring of the approach channel to assure efficient fish passage and attraction to the ladder entry. Modifications above the ladder exit may include changes to direct fish away from hazards or inclusion of an extended trash rack to avoid frequent plugging of the ladder.

The contents of this letter have been discussed with the participating agencies and groups mentioned. They will be sending a separate letter of support with their comments on the contents of this letter. If you have any questions, or need additional information, feel free to contact me at 208.745.0834 or e-mail at [bsmith@nwpwrservices.com](mailto:bsmith@nwpwrservices.com).

Sincerely,

**NORTHWEST POWER SERVICES, INC.**



Brent L. Smith  
President

cc: Mr. Dee M. Reynolds, Fall River Electric  
US Forest Service  
US Fish & Wildlife Service  
Idaho Department of Fish & Game  
Henry's Fork Foundation  
Idaho River United

ORIGINAL



## United States Department of the Interior

FISH AND WILDLIFE SERVICE

Snake River Fish and Wildlife Office  
1387 S Vinnell Way, Suite 368  
Boise, Idaho 83708

APR 29 P 2:27

FEDERAL ENERGY  
REGULATORY COMMISSION

APR 28 2004

Magalie R. Salas, Secretary  
Federal Energy Regulatory Commission  
888 First Street, NE  
Washington, DC 20426

Subject: Buffalo River Hydroelectric Project – Fish Screen and Fish Ladder Monitoring  
FERC #1413 OALS #04-364

Dear Secretary Salas:

The Fish and Wildlife Service (Service) is writing in support of the information provided to the Federal Energy Regulatory Commission (Commission) in a letter from Northwest Power Services, Inc. (Applicant) dated April 15, 2004, regarding monitoring of the proposed fish screen and fish ladder at the subject project. The purpose and extent of the proposed monitoring activities are consistent with the intention of recommendations provided by the Department of Interior in its letter filed with the Commission January 20, 2004. We support the Applicant's proposed post construction monitoring plan as described in their April 15 letter. The Service appreciates the Applicant's cooperative approach, and looks forward to continued discussions regarding this project.

Sincerely,

  
Jeffery L. Foss, Supervisor  
Snake River Fish and Wildlife Office

cc: FWS, Chubbuck (Mignogno)

**ORIGINAL****IDAHO FISH & GAME**

600 South Walnut  
P.O. Box 25  
Boise, Idaho 83707-0025

Dirk Kempthorne / Governor  
Steven M. Huffaker / Director

May 5, 2004

Magalie R. Salas, Secretary  
Federal Energy Regulatory Commission  
888 First Street NE  
Washington DC 20426

Re: Buffalo River Hydroelectric Project, FERC No. 1413, Fish Monitoring

Dear Secretary Salas:

Idaho Department of Fish and Game (IDFG) staff has been thoroughly involved in the relicensing process being undertaken for the Buffalo River Hydroelectric Project, located in the Henrys Fork Snake River drainage in eastern Idaho. On March 23, 2003, a meeting was held pertaining to monitoring requirements for fish screens and a fish passage structure involving IDFG, Northwest Power Services (licensee) and the United States Forest Service (USFS). Northwest Power Services summarized these discussions and the consensus reached regarding the above issues in their letter to you dated April 15, 2004.

IDFG concurs with the summary provided to you by Northwest Power Services. Specifically, we agree that it was IDFG's intent to require post-construction monitoring to the following extent:

- **Fish Screen Monitoring-** Given installation of a one-quarter inch ( $\frac{1}{4}$ " ) screen, and an approach velocity of 0.8 feet per second, the licensee is responsible for documenting fish mortalities found on the screen by species and length. We request that these data be provided to IDFG on a quarterly basis. Monitoring is to occur for the first three (3) years of the new license period, and every third year thereafter.
- **Fish Passage Structure-** Given that IDFG will be among the agencies approving the final design of the passage structure, the licensee is to be responsible to collect data adequate to document fish use of the passage structure. The licensee is also responsible for minor modifications to enhance passage such as the size, shape, and position of flow orifices (if applicable), and to provide adequate flows within the ladder and attraction flows. The licensee is responsible to ensure that the channel morphology below the passage structure allows efficient fish movement into the passage structure itself.

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SECRETARY  
2004 MAY 14 P 4 25  
FEDERAL ENERGY  
REGULATORY COMMISSION

**Magalie R. Salas, Secretary**

**May 5, 2004**

**Page 2**

**IDFG appreciates Northwest Power Service's cooperation and their willingness to collaborate with our staff on this important issue. If you or your staff has any questions, please contact Gary Vecellio, Environmental Staff Biologist, in our Upper Snake Region Office in Idaho Falls at (208) 525-7290.**

**Sincerely,**

**Tracey Trent, Chief  
Natural Resources Policy Bureau**

**TTT:GMV:sag**

**cc: Natural Resources Policy Bureau (IDFG)  
Harriet Hensley, Idaho Attorney General's Office  
Brent Smith, Northwest Power Services  
Gary Vecellio, IDFG Idaho Falls  
Lee Mabey, USFS Targhee National Forest  
Kendra Womack, USFWS Boise  
Steve Trafton, Henrys Fork Foundation**



United States  
Department of  
Agriculture

Forest  
Service

Intermountain Region

324 25<sup>th</sup> Street  
Ogden, UT 84401  
801-625-5605

ORIGINAL

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SECRETARY

File Code: 2770-2

Date: MAY 12 2004

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FEDERAL ENERGY  
REGULATORY COMMISSION

Ms. Magalie R. Salas  
Secretary  
Federal Energy Regulatory Commission  
888 First Street, NE  
Washington, DC 20426

RE: Buffalo River Hydropower Project (P-1413), Fisheries Mitigation Comments

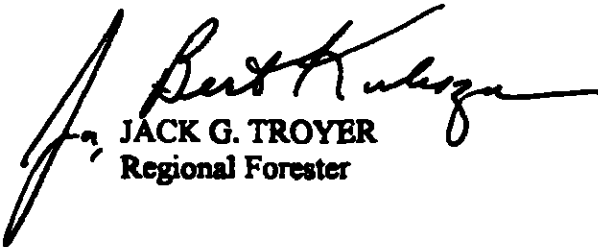
Dear Ms. Salas:

The USDA Forest Service is in support of the information provided to the Federal Energy Regulatory Commission (Commission) in a letter from Northwest Power Services, Inc. (Applicant) dated April 15, 2004, regarding monitoring of the proposed fish screen and fish ladder at the Buffalo River hydropower project.

The Applicant's purpose and extent of the proposed monitoring activities are consistent with the objectives of the USDA Forest Service's preliminary terms, conditions, and recommendations we filed with the Commission January 14, 2004. We agree with the Applicant's documentation of the purpose and extent of the post-construction monitoring for the fish screen and fish ladder as described in the Applicant's April 15 letter. The USDA Forest Service will provide clarification on the purpose and extent of post-construction monitoring when we submit our final terms, conditions, and recommendations for the project. The USDA Forest Service appreciates the Applicant's cooperative approach and looks forward to continued discussions regarding this project.

Please contact Gerrish Willis, Regional Hydropower Coordinator, at 801-524-3969 if you require additional information.

Sincerely,

  
JACK G. TROYER  
Regional Forester



***Section E***

***Diversion Operation  
Plan***



# Diversion Operation Plan

## 1.0 Introduction

Article 410 and USFS Condition #15 of the License requires a Diversion Operation Plan be developed. This plan is intended to fulfill these two requirements, the following is the Article and Condition from the license:

***Article 410. Diversion Operation Plan. Within one year of license issuance, the licensee shall file for Commission approval, a Diversion Operation Plan to maintain the Buffalo River channel in the project area and pass large woody debris past the project.***

***In addition to the provisions specified in Condition No. 15 of Appendix A, the plan shall include, at a minimum, an implementation schedule.***

***The licensee shall prepare the plan after consultation with the Idaho Department of Fish and Game, U.S. Forest Service, and U.S. Fish and Wildlife Service. The licensee shall include with the plan documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the agencies, and specific descriptions of how the agencies' comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the agencies to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.***

***A courtesy copy of the plan shall be filed with the Commission's D2SI-PRO and the Director, D2SI.***

***The Commission reserves the right to require changes to the plan. Implementation of the plan shall not begin until the licensee is notified by the Commission that the plan is approved. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.***

### ***Condition No. 15 - Diversion Operation Plan***

***Within 1 year of license issuance the Licensee shall file with the Commission a Diversion Operation Plan that is approved by the***

***Forest Service. At a minimum the Plan shall address:***

- ***A policy and methodology for passing large woody debris fully intact over the dam as mentioned in license application,***
- ***Methods for sediment flushing or removal,***
- ***Procedures for flood conditions, methods of erosion prevention in the diversion area and spillway channel,***
- ***Trash and debris removal, and***
- ***An implementation schedule and maintenance program.***

***Upon Commission approval, the licensee shall implement the plan. The Commission may require changes to the plan to ensure adequate protection of the environmental, scenic and cultural values of the project area.***

## **2.0 PROPOSED PLAN**

***Fall River proposes the following Diversion Operation Plan for review and approval:***

**A policy and methodology for passing large woody debris fully intact over the dam as mentioned in license application**

In the occurrence of woody debris caught in the dam, we will with all care help the debris to pass safely to the down stream side. We will use man power unless the debris is of a substantial size, making it impossible to move without the help of equipment. If equipment must be used we will use non damaging straps to lift the debris carefully across the dam.

**Methods for sediment flushing or removal**

Due to low water velocity there is little to no sediment in the water. Because of this we are not in need of sediment removal.

**Procedures for flood conditions, methods of erosion prevention in the diversion area and spillway channel**

Due to the rock conditions, lava rock, we are not suffering any damage by erosion. In the condition of flooding we will pull the stop logs increasing flow through the dam spillway and eliminating any dangers of flooding.

### Trash and debris removal, and

We propose that as the debris if not a natural occurrence will be removed and moved to a proper place for disposal. If the debris is natural and biodegradable we will help it to continue it's way down stream. For example: logs, sticks, leaves, etc. All debris will be carefully dealt with and properly taken care of.

### An implementation schedule and maintenance program

We are currently already performing this plan and will continue as the project goes forward.

## 3.0 Comments and Responses

### IDFG April 13, 2005

#### **IDFG Comments 1**

Please comment on your need to remove sediment from the forebay of the project in the past. Your statement that it will not be necessary may be correct. But, if sediment removal is necessary due to an upstream event, we would like your plans on how it will occur.

**Response:** The removal of sediment from the forebay has never been necessary during the operation of the Buffalo project.

#### **IDFG Comment 2**

Under Procedures for flood conditions, you state that you intend to "pull the stop logs increasing flow through the dam spillway" if this becomes necessary. IDFG requests that, should this occur, you closely monitor for changes in the streambed at the downstream entrance to the fishway and below. The fishway is designed to begin at a critical pool along the upstream migration path. If pulling stop logs to increase flow through this section occurs, we need to ensure that the stream channel is monitored for alteration. If the fishway entrance pool is changed or destroyed, or the fishway entrance conditions altered, IDFG needs assurance that it will be reconstructed. Your procedures for flood conditions must incorporate monitoring of the channel from the fishway entrance downstream at least 50 meters.

**Response:** This channel will be monitored by onsite personnel, any problems will be recorded and maintenance will be preformed by the onsite personnel.

USFS April 21, 2005**USFS Comment 1**

Continued equipment access across the dam post construction has not been approved. It would be prudent during construction to incorporate other methods to pass large debris through the spillway such as a winching system.

**Response:** The temporary access will be removed at the end of the construction period. The existing walkway (or rebuilt walkway of the same dimensions) will be placed back in it's original position. This walkway is the method used currently to pass large debris.

**USFS Comment 2**

Fine sediment is currently flushed during periods of high runoff. We agree sediment flushing is not an issue given past operation and stream type.

**Response:** Agreed

**USFS Comment 3**

As part of the maintenance plan ensure that the spillway is kept free of debris that could hinder its effectiveness during high flow events. All debris needs to pass beyond the concrete sill and at an elevation below the concrete apron. The fish ladder is likely to provide a new catch point for debris. This debris may need to be passed on to minimize erosion and conflicts with ladder operation.

**Response:** This channel will be monitored by onsite personnel, any problems will be recorded and maintenance will be preformed by the onsite personnel.

***Section F***  
***Public Safety Plan***

# Public Safety Plan

## 1.0 Introduction

Forest Service's Condition No. 7 of the License requires a Public Safety Plan be developed. This plan is intended to fulfill this requirement, the following is the Condition from the license:

***Condition No. 7 – Public Safety Plan***

***Within 6 months of the license issuance, the Licensee shall file with the Commission a Public Safety Plan approved by the Forest Service. This plan will identify potential hazardous situations, evaluate all project facilities for conformance with the International Building Code, and identify measures necessary to bring project facilities in conformance with the Code, and shall include a schedule for completion of any hazard abatement measures. The plan will also identify how the project complies with FERC's Guidelines for Public Safety at Hydropower Projects (March 1992).***

***The Licensee shall perform daily (or on a schedule otherwise agreed to by the Forest Service) inspections of Licensee's construction operations on National Forest System lands while construction is in progress. The Licensee shall document these inspections (informal writing sufficient) and shall deliver such documentation to the Forest Service on a schedule agreed to by the Forest Service. The inspections must include fire plan compliance, measures to provide for public safety, and environmental protection. The Licensee shall act immediately to correct any items found to need correction.***

## 2.0 PROPOSED PLAN

The Buffalo River between the project and Highway 26, is approximately 1.5 miles. Fishing from the stream banks is the primary usage, especially in the lower half-mile section.

Attached, as Exhibit A is the normal and emergency telephone list for the Buffalo River Hydroelectric project.

Attached as Exhibit B is the project site plan which shows the location of the following safety features:

- 1) Warning signs are located on both sides of the river some 300 feet upstream of the dam to alert the public of the potentially dangerous section of river.

- 2) Warning signs are located in the immediate vicinity of the intake area to alert the public of the potentially dangerous waters near the intake area.
- 3) A 200-watt floodlight is located on the north side of the powerhouse at roof height to illuminate the immediate area including the walkways and access route. The unit is actuated automatically to illuminate from dusk until dawn.
- 4) Warning lights and horns were not considered essential for public safety in conjunction with plant operation. Project flows (100 cfs) represent nominally between 10-20 percent of the Henry's Fork river flow at the project discharge. The streambed profile and flow velocities in this section of the Henry's Fork are such that plant startup or shutdown would present no danger to the public in the immediate area due to operational changes.

During all construction activities all standards set by OSHA, (USDOT), and ITD will be followed and where applicable signs will be placed to alert all public of any heavy traffic or road closures. Also, during construction where appropriate there will be a schedule placed at road entry ways to provide updates or notifications of any temporary restrictions for the summer home owners to enter their land. In addition, when appropriate warning signs will be placed along the river for public notice, as needed. All construction personnel will be informed of the safety procedures and all safety equipment and emergency exits. In accordance with condition 7 of the public safety plan there will be an on site construction manager to oversee access and compliance to safety measures and will be making inspections each Monday and Thursday.

### 3.0 Comments and Responses

#### IDFG April 13, 2005

##### **IDFG Comments 1**

You claim that the river corridor between the highway 20 bridge and the hydropower backwater is "a very low use recreational area". We do not agree, but suggest that fishing is an important recreational use in this area. Other uses such as skiing and waterfowl watching are also popular. We suggest that the primary factor keeping fishing use lower than what might be expected is a lack of access along this section of river. The Buffalo Summer Home area on the south river shore detracts from the public accessing the river corridor along the most frequently traveled shore (Forest Road 136). We suggest that the hydropower facility owners consider cooperative efforts to increase recreational access to this river from the southern shore (see next section).

**Response:** The licensee believes that the improvements outlined in the Recreation Plan will provide increased use of the river.

**IDFG Comment 2**

Exhibit B shows approximate locations of "Danger - No Boating or Swimming Beyond this Point" signs. We would like to know the rationale for the location of these signs. Are there conditions in your FERC license stating that these signs are placed a specific distance from the dam? Are these recommendations or regulations given to you in your Special Use Permit by the USFS? We would like you to consider and report what is necessary (by law or permit condition) in terms of this signage. If this signage is entirely voluntary, then we would like to cooperatively re-consider what boating usage may be reasonable and safe in the forebay above the dam.

**Response:** The licensee will continue to cooperatively work with IDFG and USFS to find answers to these questions. In addition if boating in the forebay is desirable to both the IDFG and USFS and safe then the licensee will propose to amend it's Public Safety Plan and relocate the signs. The signs were installed in accordance with the Public Safety Plan required by the FERC License.

USFS April 21, 2005

**USFS Comment 1**

This plan is to identify potential hazardous situations, evaluate all project facilities for conformance with the International Building Code, and identify measures necessary to bring project facilities in conformance with the Code, and shall include a schedule for completion of any hazard abatement measures. The plan will also identify how the project complies with FERC's Guidelines for Public Safety at Hydropower Projects (March 1992). The Forest has no knowledge or evidence that this has been completed.

**Response:** All hazardous situations are covered within the codes established by OSHA. Any conditions specific to this site are covered within this plan. The specifications are based on meeting several codes including ASTM standards, the American Concrete Institute Building Code and Commentary, UBC, NEC, and AWWA. The concrete and metal components are manufactured of materials that must conform to these codes. The specifications cover standard construction practices that must be followed during construction.

**USFS Comment 2**

The Forest has the following additional comments:

- Reference within Safety Plan what standards are being followed for example OSHA, Manual of Uniform Traffic Control Devices (USDOT), or local ITD standards.
- Correct spelling in the plan from sight to site.
- It should be stated that the area will be signed and closed to public access during construction at an appropriate turnaround location such as the snowmobile parking area or intersection of road from the Box Canyon Campground. Area closure signing needs to be coordinated with issuance of a Forest Service Closure Order for the site.
- To facilitate public safety and awareness post weekly a construction schedule at the snowmobile parking area and provide a copy to the Island Park Forest Service Office.
- Local residents will need access to summer homes.



- Roads and highways should be signed as appropriate to comply with federal and state highway standards for construction and heavy truck traffic.
- As warranted signs should be posted upstream with appropriate warnings.
- Documentation of inspections and compliance shall be provided twice a week for the project inspector on Monday and Thursday.
- A sign stating there is "no designated take out ahead" needs to be placed near Highway 20 or canoe takeouts need to be allowed at the project site if it is safe to do so.

**Response:** We will comply to all as applicable, and or appropriate.

**EXHIBIT A**

**COMMUNICATIONS LIST**



**OPERATION AND MAINTENANCE ADDENDUM – EXHIBIT A  
FACILITY AND EMERGENCY TELEPHONE NUMBERS**

REVISION DATE 2-1-2005

**Facility operations:**

Fall River – Office hours: 8:00 a.m. – 5:30 p.m.

Buffalo River Power plant - (208) 558-9272

Island Park Hydroelectric Project – (208) 558-9183

Northwest Power Services, Inc. “Brent Smith” - (208) 745-0834

Fall River Rural Electric - (208) 652-7431

**Emergency Events:**

Fall River Rural Electric Co-op during office hour’s use above list.

Northwest power Brent Smith – (208) 745-0834

Fall River Electric, after hours – (208) 652-7431  
1-800-541-5188

Brent Smith Mobile – (208) 521-2473

Doug Cutler Mobile- (208) 521-6270

**Additional Contacts:**

Federal Energy Regulatory Commission (503) 944-6700

Harry T. Hall (503) 552-2700

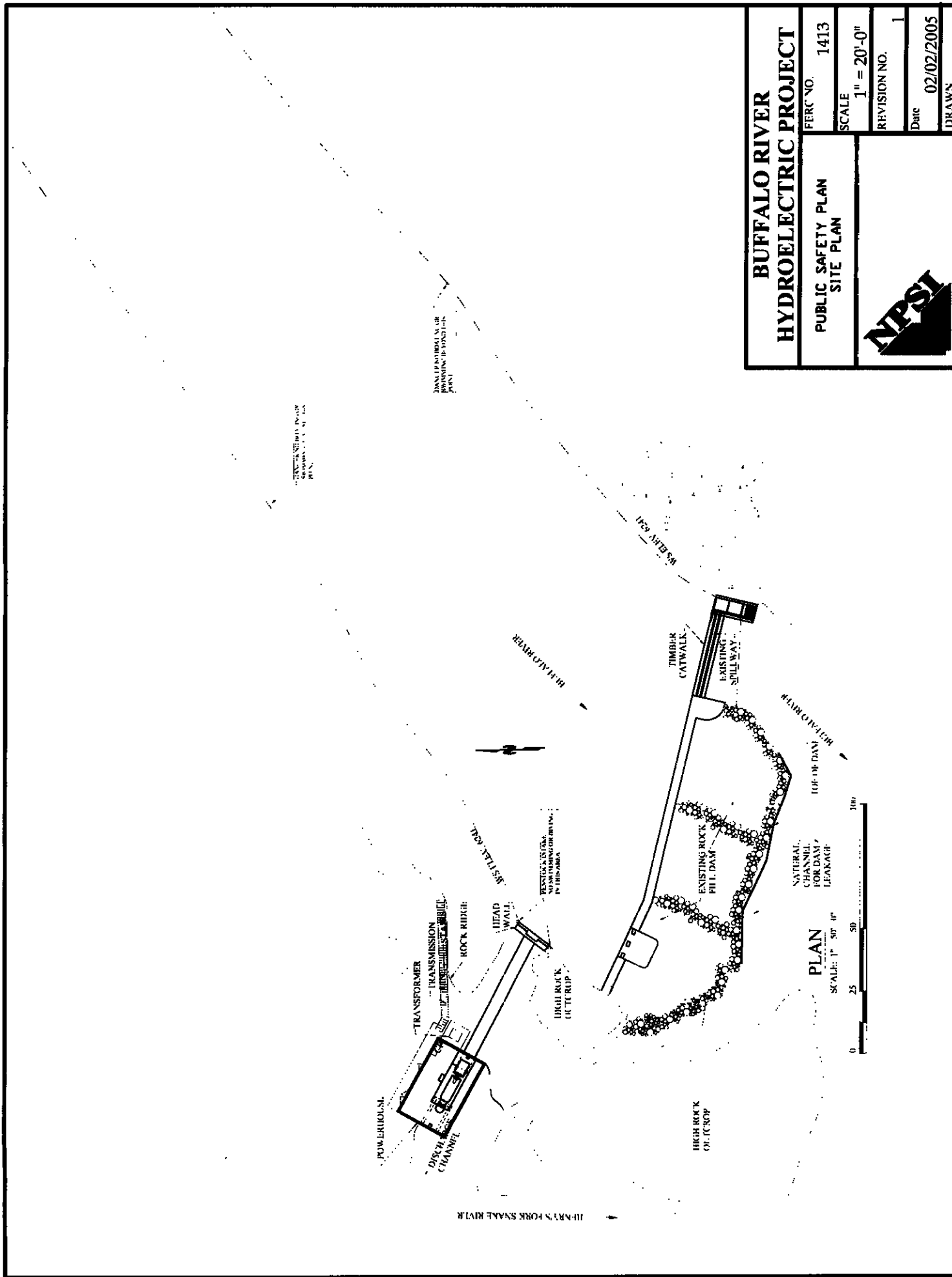
Pat Regan (503) 522-2741



**EXHIBIT B**

**LOCATION OF SAFETY FEATURES**

<b>BUFFALO RIVER HYDROELECTRIC PROJECT</b>	
<b>PUBLIC SAFETY PLAN SITE PLAN</b>	FERC NO. 1413
	SCALE 1" = 20'-0"
	REVISION NO. 1
	Date 02/02/2005
	DRAWN



## ***Section G***

# ***Heritage Resource Protection Plan***



# Heritage Resource Protection Plan

Forest Service's Condition No. 12 of the License requires a Heritage Resource Protection be developed. This plan is intended to fulfill this requirement, the following is the Condition from the license:

***Condition No. 12 - Heritage Resource Protection***

***If during ground-disturbing activities or as a result of project operations, items of potential cultural, historical, archeological, or paleontological value are reported or discovered, or a known deposit of such items is disturbed on National Forest System lands the Licensee shall immediately cease work in the area so affected. The Licensee shall then notify the Forest Service and the Commission and shall not resume work on ground-disturbing activity until it receives written approval from the Forest Service.***

***If it deems it necessary, the Forest Service may require the Licensee to perform recovery, excavation, and preservation of the site and its artifacts at the Licensee's expense through provisions of an Archaeological Resources Protection Act permit issued by the Forest Service.***

## PROPOSED PLAN

Fall River proposes the following Heritage Resource Protection Plan for review and approval.

Procedures in case items are found

1. The Licensee shall stop all work in the affected area
2. The Licensee shall call the Forest Service at the following contact:

USFS Island Park Ranger District  
Adrienne Keller-District Ranger  
(208) 558-7301

Caribou- Targhee National Forest  
Ali Abusaidi Forest Archaeologist  
(208)-557-5777

3. The Licensee shall call the Commission at the following contact:

	Office	Cell	Home
Mr. Harry T. Hall	(503) 552-2700	(503) 706-8842	(503) 636-1111
Mr. Pat Regan	(503) 522-2741	(503) 706-8733	(503) 534-2621

- 4 The Licensee shall wait for written approval from Forest Service prior to continuing work in the affected area.

***Section H***

***Vegetation Management  
Plan***

# Vegetation Management Plan

## 1.0 Introduction

A license was issued to Fall River Rural Electric Cooperative, Inc. (Fall River) in November, 2004 by the Federal Energy Regulatory Commission (Commission) for the alteration and continued operation of the Buffalo River Hydroelectric Project. The 250-kilowatt (kW) run-of-river project is located on the Buffalo River near its confluence with the Henry's Fork of the Snake River, north of Ashton, in Fremont County, Idaho. The license stipulates several terms and conditions which must be met with approval from various resource agencies including a vegetation management plan. The vegetation management plan is designed to prevent the movement of invasive weeds into the project area during construction, the spread of weeds within disturbed areas, and re establish native plant species in the disturbed areas to control soil erosion. This document has been developed in response to Article #401 4(e)-17 and US Forest Service Condition #17 of the license which states:

***At least 90 days prior to any ground disturbing activity the licensee shall file with the Commission a vegetation management plan that is prepared in consultation with and approved by the US Forest Service (USFS). At a minimum the plan shall:***

***Identify and prioritize (into high, moderate and low priority sites) all inadequately vegetated areas to be re-vegetated or rehabilitated along with an implementation schedule. List the species to be used along with planting locations, methods, and densities (emphasis shall be given to use of native species),***

***Identify site preparation, irrigation, mulch, fertilizer, and herbivore protection requirements for plant establishment.***

***Identify methods for prevention and control of noxious weeds. Treatment of existing infestations of highest priority weeds shall be initiated immediately upon approval of the vegetation management plan by the Commission.***

***Identify all vegetation control methods the Licensee proposes to use at or along all project facilities along project facilities.***

***Explain how re-vegetation and vegetation control methods and materials meet objectives for integrated noxious weed management, erosion control, wildlife habitat and other management direction.***

***Develop a monitoring program to evaluate the effectiveness of re-vegetation, vegetation control, and noxious weed control measures.***

***Develop procedures for identification of additional measures that the licensee shall implement if monitoring reveals that re-vegetation and vegetation control is not successful or does not meet intended objectives.***

***In addition to consultation with the USFS the licensee shall prepare the above plans after consultation with the Idaho Department of Fish and Game (IDFG), Fish and Wildlife Service (FWS), Idaho Department of Environmental Quality (IDEQ), and the Idaho Department of Parks and Recreation (IDPR). The licensee shall include with the plans documentation of consultation, copies of comments and recommendations on the completed plans after the plans have been prepared and provided to the agencies, and specific descriptions of how agencies' comments are accommodated by the plans. The licensee shall allow a minimum of 30 days for the agencies to comment and to make recommendations before filing the plans with the Commission. If the licensee does not adopt a recommendation, the filings shall include the licensee's reasons, based on project-specific information.***

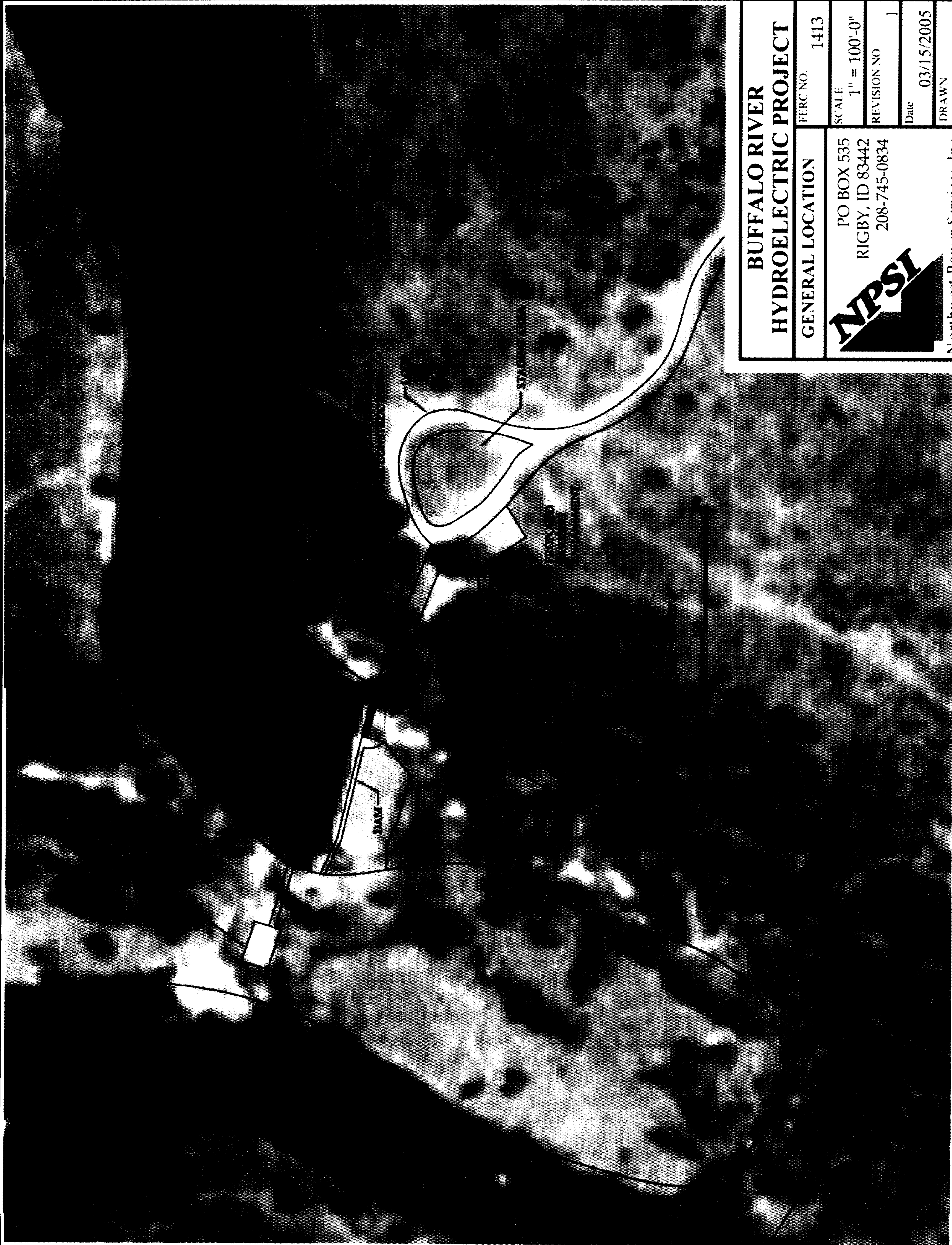
***The Commission reserves the right to make changes to any plan submitted. Upon Commission approval, the plan becomes a requirement of the license, and the licensee shall implement the plan or changes in the project operations or facilities, including any changes required by the Commission.***

## **2.0 Vegetation Impacts During Construction**

The slope to the east of Buffalo Dam includes several areas with poor vegetation cover due to trampling. Recreational foot traffic is concentrated in the area between the parking lot and the margins of the forebay near the dam crest. In addition, the movement of construction equipment to repair Buffalo Dam may disturb up to 2,500 square feet of upland vegetation in this area (Figure H-1). In addition, repairs may change the depth and flow of water through approximately 500 square feet of wet meadow on the west side of the tailrace (Figure H-1).

Without appropriate management, weedy species may expand their coverage in disturbed areas and compete with native plants. Furthermore, disturbed soils may negatively effect aesthetics and promote erosion. In the presence of adequate re-vegetation and weed control efforts desirable native vegetation should become re-established on disturbed soils. Under this scenario the project will have minimal long-term effects on upland vegetation.





**BUFFALO RIVER  
HYDROELECTRIC PROJECT**

GENERAL LOCATION	FERC NO. 1413
PO BOX 535 RIGBY, ID 83442 208-745-0834	
<b>NPSI</b>	
Northwest Power Services, Inc.	
SCALE 1" = 100'-0"	REVISION NO. 1
Date 03/15/2005	DRAWN DKB

FIGURE H-1



### **3.0 Noxious Weed Control Plan**

#### **3.1 Introduction**

There are only a few noxious weed species known to occur within the project area (See the Ute Ladies Tresses/Pink Agoseris Surveys and Vegetation Characterization. ER1 Report October 2003). Although there are currently no dense patches of noxious weeds, ground disturbance during construction creates opportunities for invasive weeds to become established. Specifically, Canada thistle has the greatest potential to expand its coverage as the soils in the west side meadow become drier.

This weed control plan is designed to prevent the movement of weeds to and from the project area during construction and the spread of weeds within disturbed project areas. The plan applies to all areas where ground-disturbing activities will occur. The project licensee and its contractors will be responsible for carrying out the methods described in this plan. The weed control plan has three main objectives:

- 1) To prevent the transport of weeds to and from the project area during construction.
- 2) To prevent noxious weeds from becoming established on disturbed soils.
- 3) To provide long-term protection from weeds by establishing healthy native plant communities within the project area.

#### **3.2 Noxious Weed Management**

Noxious weed management has been divided into three stages. Pre-construction management is designed to prevent the introduction of weeds into the project area and limit the spread of existing infestations. Construction management is planned to minimize the effects of ground disturbance and inhibit the spread of weeds already present. Reclamation and reseedling measures (See Section 4.0) are intended to protect the project area from future infestations.

##### **3.2.1 Preconstruction Management**

Construction supervisors responsible for implementing the weed management plan will review and understand the plan and will provide written confirmation as to this fact.. The plan and photographs of target species will be readily accessible to responsible personnel.

Any straw bales or other natural material used in erosion-control will be certified weed-free. All seed used in revegetation will also be weed-free. Gravel and fill materials will originate from inspected, weed-free sources.

All vehicles and equipment will arrive at the work site clean and weed free. Prior to entering and leaving the construction site, an inspector will ensure that vehicles and equipment are free of soil and debris capable of transporting noxious weed seeds, roots, or rhizomes.

Prior to ground disturbing activity the project area will be inspected for noxious weeds. Weed infestations will be marked and treated. Efforts will be made to treat weeds prior to revegetation. Inspection/treatment ability and options will vary depending on the season, extent of infestation, and weeds present (Table 1). A type of marking will remain in place to designate the site as an area where additional weed precautions must be taken.

Table 1. Vegetation control methods for noxious weeds known from the project area.

Weed Species	Extent of Infestation	Recommended Control Method
Canada Thistle ( <i>Cirsium arvensis</i> ) Bull Thistle ( <i>Cirsium vulgare</i> ) Meadow Hawkweed ( <i>Hieracium pratense</i> )	Less than 25 plants or less than two square meters	Hand pull or dig. Dispose of weeds with seed heads by burning off-site.
Canada Thistle ( <i>Cirsium arvensis</i> ) Bull Thistle ( <i>Cirsium vulgare</i> ) Meadow Hawkweed ( <i>Hieracium pratense</i> )	Greater than 25 Plants or greater than two square meters.	Herbicide control under appropriate conditions with products approved for use near water (Aua-Kleen, Landmaster, Glyphomate, or Rodeo)

### 3.2.2 Construction Management

All project areas will be inspected and treated bi-monthly (if necessary) for noxious weeds during construction. Preferred treatment methods will vary based on the species, location and extent of infestation (Table 1).

Additional precautions will be taken within sites that have been marked as infested by noxious weeds. Topsoil will not be moved from infested sites into adjacent areas. Equipment will be cleaned to the extent possible prior to leaving such sites. Excess soil will be scraped from equipment and the undercarriage and tires will be inspected for weeds and weed fragments.

## **4.0 Revegetation Management Plan**

### **4.1 Soil Preparation**

Original topography will be preserved or recreated wherever possible. Soils compacted by construction equipment will be ripped to depth of six inches to restore permeability. Noxious weeds will be removed on and adjacent to prepared soils prior to reseeding.

### **4.2 Reseeding and Planting**

All disturbed soils will be reseeded or planted with a mix of native plants. Rehabilitation and initial plantings will begin immediately following the completion of repairs to the dam. Additional plantings will extend into the following growing season, and monitoring and maintenance will continue for a period of 3 years (Table 2)

**Table 2. Implementation schedule for revegetation/rehabilitation of disturbed and poorly vegetated sites.**

<b>Action</b>	<b>Timeframe</b>
Control Weeds	May/June 2005
Control Weeds	July/August 2005
Place Sediment Catch Structures	Prior to ground disturbance -August 2005
Salvage Topsoil (if applicable)	Prior to ground disturbance -August 2005
Contour Site, Replace/Rip Topsoil (if necessary)	Immediately following disturbance -October 2005
Establish and Mark Pathways for Foot Traffic Through the Area	October 2005
Seed All Disturbed Soils	October 2005
Apply Mulch/Erosion Control Fiber Mat	October 2005
Plant Seedlings and Shrubs	October 2005
Monitor Cover Within Seeded Areas Based on Established Protocols and Goal Parameters	June/July 2006
Control Weeds	August 2006
Monitor Cover Within Seeded Areas Based on Established Protocols and Goal Parameters	June/July 2007



Evaluate Survival of Seedlings and Shrubs Based on Established Protocols and Goal Parameters	June/July 2007
Replace Lost Seedlings/Shrubs—Modify Locations and Methods Based on Results of Evaluation	October 2007
Monitor Cover and Seedling Vigor Based on Established Protocols and Goal Parameters	Annually for initial three years or until goal parameters are met
Reseed, Replant, Amend Soils	As necessary

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Primary project disturbance will occur in the project's upland areas; unfortunately, species diversity in the upland sites is currently low with respect to species that can quickly and successfully stabilize the soil following disturbance. Table 3 describes the seed mix planned for upland areas. All of the species are native to the region, although not all were found during our site visits. Several grasses that have been recorded in the area are excluded because they are not native (i.e. *Phleum pratense*, *Bromus inermis*). Elk sedge (*Carex geyeri*), Idaho fescue (*Festuca idahoensis*), sheep fescue (*Festuca ovina*) and silky lupine (*Lupinus sericeus*) are included to create a long-term, ground-stabilizing and aesthetically pleasing cover on the site. Slender wheatgrass (*Agropyron trachycaulum*) and mountain brome (*Bromus marginatus*) are included for their first-year vigor and ability to rapidly stabilize project soils.

All of these species are best seeded during the fall. The size of the site should allow for seeding of the area using manual spreaders. Prior to seeding, the area should be contoured, as appropriate, and salvaged topsoil should be spread. Any compacted areas should be ripped to a depth of six inches.

Table 3. Seeding mix for disturbed upland sites.

Scientific Name	Common Name	Location	Method	Density	Notes
<i>Festuca idahoensis</i>	Idaho fescue	Uplands	broadcast	10 lbs/ac	Shade tolerant, long lived perennial, slow to develop, but long lasting cover
<i>Festuca ovina</i>	Sheep fescue	Uplands	broadcast	5 lbs/ac	Very persistent, drought and winter hardy, slow to develop
<i>Agropyron trachycaulum</i>	Slender Wheat-grass	Uplands	broadcast	5 lbs/ac	Excellent first-year seeding vigor, short lived
<i>Bromus marginatus</i>	Mtn. Brome	Uplands	broadcast	10 lbs/ac	Good seedling vigor, short-lived
<i>Carex geyeri</i>	Elk Sedge	Uplands	broadcast	10 lbs/ac	Most common plant within upland areas at the site, effective at stabilizing soil, competitive and hardy
<i>Lupinus sericeus</i>	Silky Lupine	Uplands	broadcast	2 lbs/ac	Nitrogen fixing and showy, used in rehab in Gand Teton NP

The eastern banks of the Buffalo River in the project area transition abruptly to upland. If a small area of riparian influenced vegetation will be disturbed, the areas will be seeded with a mix of narrow-spike reedgrass (*Calamagrostis inexpansa*)/Bluejoint reedgrass (*Calamagrostis canadensis*), Nebraska sedge (*Carex nebrascensis*), Cusick's sedge (*Carex cusickii*) and Baltic rush (*Juncus balticus*)/Tracey's rush (*Juncus traceyi*). The seeding rate for all wetland species combined will be 1 lb/1,000 ft<sup>2</sup> or 8 lbs/ac, at a ratio of 50 percent *Carex*, 25 percent *Calamagrostis* and 25 percent *Juncus*.

Shrubs are the major component of the understory along the east banks of the Buffalo River. As such, shrub plantings will receive strong emphasis in rehabilitation efforts. A variety of shrub species currently known from the site will be planted in clusters within natural and created favorable microsites (Table 4). Seedling subalpine fir (*Abies lasiocarpa*) and quaking aspen (*Populus tremuloides*) will also be planted to contribute to the aesthetics and long-term stability of the site.

Table 4. Shrubs to be used in the rehabilitation of disturbed sites

<b>Access Trail (2000sq/ft)</b>	<b>Mature crown size plants sq/ft</b>	<b>#plants</b>	<b>Shrub cover sq/ft</b>
<i>Vaccinium caespitosum</i> 0.125sq/ft	0.50	1000	125
<i>Ceanothus velutinus</i> 16 sq/ft	0.00	2	32
<i>Amelanchier alnifolia</i> 10 sq/ft	0.02	40	400
<i>Arctostaphylos uva-ursi</i> 2 sq/ft	0.09	180	360
<i>Spirea betulifolia</i> 0.5 sq/ft	0.20	400	200
<i>Cornus stolonifera</i> 10 sq/ft	0.00	na	0
<i>Ribes viscosissimum</i> 8 sq/ft	0.00	na	0
<b>Total Area Covered</b>			<b>1117</b>
<b>% Shrub Cover</b>			<b>0.56</b>
<b>Concrete Truck Access (2750sq/ft)</b>	<b>Mature crown size plants sq/ft</b>	<b>#plants</b>	<b>Shrub cover sq/ft</b>
<i>Vaccinium caespitosum</i> 0.125sq/ft	0.50	1375	172
<i>Ceanothus velutinus</i> 16 sq/ft	0.00	3	44
<i>Amelanchier alnifolia</i> 10 sq/ft	0.02	55	550
<i>Arctostaphylos uva-ursi</i> 2 sq/ft	0.09	248	495
<i>Spirea betulifolia</i> 0.5 sq/ft	0.20	550	275
<i>Cornus stolonifera</i> 10 sq/ft	0.00	na	0
<i>Ribes viscosissimum</i> 8 sq/ft	0.00	na	0
<b>Total Area Covered</b>			<b>1536</b>
<b>% Shrub Cover</b>			<b>0.56</b>

<b>Inside of Parking Loop (7500sq/ft)</b>	<b>Mature crown size plants sq/ft</b>	<b>#plants</b>	<b>Shrub cover sq/ft</b>
<i>Vaccinium caespitosum</i> 0.125sq/ft	0.00	na	0
<i>Ceanothus velutinus</i> 16 sq/ft	0.00	4	60
<i>Amelanchier alnifolia</i> 10 sq/ft	0.02	150	1500
<i>Arctostaphylos uva-ursi</i> 2 sq/ft	0.09	675	1350
<i>Spirea betulifolia</i> 0.5 sq/ft	0.00	na	0
<i>Cornus stolonifera</i> 10 sq/ft	0.00	na	0
<i>Ribes viscosissimum</i> 8 sq/ft	0.00	na	0
<b>Total Area Covered</b>			<b>2910</b>
<b>% Shrub Cover</b>			<b>0.39</b>
<b>Potential Riparian Vegetation (250 sq/ft)</b>	<b>Mature crown size plants sq/ft</b>	<b>#plants</b>	<b>Shrub cover sq/ft</b>
<i>Vaccinium caespitosum</i> 0.125sq/ft	0.00	na	0
<i>Ceanothus velutinus</i> 16 sq/ft	0.00	na	0
<i>Amelanchier alnifolia</i> 10 sq/ft	0.00	na	0
<i>Arctostaphylos uva-ursi</i> 2 sq/ft	0.00	na	0
<i>Spirea betulifolia</i> 0.5 sq/ft	0.00	na	0
<i>Cornus stolonifera</i> 10 sq/ft	0.05	13	125
<i>Ribes viscosissimum</i> 8 sq/ft	0.03	6	50
<b>Total Area Covered</b>			<b>175</b>
<b>% Shrub Cover</b>			<b>0.7</b>

Topsoil will be salvaged and stockpiled (if applicable) prior to initiating repairs from any areas where excavation or ground disturbance could result in its removal. When upgrades to the dam are completed, the topsoil will be re-spread to match the natural contours of the site. Where excessive soil compaction has occurred, soils will be ripped to a depth of six inches. In places where foot traffic or construction equipment has altered the natural slope of the bank, equipment will be used to

contour the site to correspond with similar areas along the Buffalo River and minimize the area's susceptibility to erosion (See Erosion Control Plan). Any existing weeds within or immediately adjacent to the seedbed will be hand-pulled and/or mechanically removed prior to seeding efforts.

Plantings of native species are designed to rely on natural precipitation. Shrub and seedling plantings will be located within favorable microsites designed to trap available moisture and hand watered during the initial planting. Additional irrigation is not planned because it could encourage weedy species and/or erosion.

Certified weed-free mulch and/or straw will be spread over seeded areas to retain moisture and protect the site from erosion. Fertilizer will not be used during the initial plantings. The species selected for planting are adapted to conditions on the site; use of fertilizer could encourage the growth of weedy species. If the growth and condition of seeded and planted species fails to meet goal parameters, soil samples may be analyzed for nutrient content/texture, and appropriate amendments recommended for the site.

Those shrubs and seedlings deemed vulnerable to loss due to rodent herbivory will be planted within protective sheaths. Vulnerable species may include: subalpine fir, quaking aspen, serviceberry and red osier dogwood. If browsing is noted as a problem during site evaluations, affected species will be treated with browse deterrent. Red osier dogwood, serviceberry and aspen may be particularly affected by browsing, and a subgroup may be treated with deterrent during the first season to test for efficacy.

## **5.0 Monitoring and Maintenance**

Long-term monitoring and maintenance are fundamental to the effective control of weeds in the project area. The establishment of native plant communities is necessary to prevent the spread of weeds on disturbed soil. Monitoring and maintenance will focus on the condition of seeded and planted areas as well as the control of invasive weeds.

### **5.1 Monitoring and Rehabilitation Measures**

Four to five, 30 meter vegetation monitoring transects will be randomly laid out on a map of the project area prior to the first season of monitoring (2006). Two reference transects will also be established for comparison within adjacent, similar, but undisturbed habitats. The location coordinates and bearing of each transect will be recorded and GPS for future reference. One end of each monitoring transect will be marked on the ground to facilitate the positioning of transects in subsequent years.

Herbaceous sampling plots (0.25 m<sup>2</sup>) will be placed at 5 meter intervals along each transect (a total of 6 plots per transect). Plant species composition, relative abundance, and horizontal structure will be quantified by estimating the cover of each species within established plots. To facilitate precision and consistency among observers, the sampling frame will be divided

into 0.025 m<sup>2</sup> sections. Cover by rock, mulch/straw, litter and coarse woody debris will also be recorded within each plot.

The following parameters will be calculated from the data recorded within each plot (see Brower and Zar 1984);

*frequency* – the proportion of plots within which a species occurs,

*relative frequency* – the frequency of a given species as a proportion of the sum of the frequencies for all species,

*cover* – the proportion of the sampling frame occupied by the vertical projection to the ground of the aerial parts of the plant, cover is presented as a mean value derived from all the plots within a sampling area,

*relative cover* – the cover for a given species expressed as a proportion of total vegetation cover within the area sampled,

*importance value* – the sum of the relative frequency and relative cover values for a given species. Importance value ranges from 0 to 2; a value of 2 indicates a community entirely composed of one species. The importance value serves as an index of the dominance of a species within its community.

Each transect will also serve as the midline for three-meter wide belt transects used to evaluate the survival and recruitment of seedlings and shrubs. All seedlings and shrubs will be recorded within each transect. Each tree/shrub will be classified as healthy (plants with no evident discoloration, dying or dead branches), stunted/stressed (plants with discoloration, deformity, or a high proportion of dead leaves), part dead (plants with multiple branches showing no green leaves or needles), or dead (stems with no green leaves evident). The following parameters will be derived from the recorded data;

*total stems per acre* – the tally of all plants, divided by the area sampled (broken down by species),

*live trees/shrubs per acre* – the total of all healthy and stunted/stressed stems, divided by the area sampled.

*proportion healthy, stressed etc.* – the number of plants within a given category as a proportion of the total number of stems.

Monitoring will be used to determine progress toward, or attainment of the following rehabilitation parameters:

#### Cover within access trail areas

-Herbaceous cover	40% on treated areas or 80% of control areas
-Shrub/seedling cover	50% on treated areas or 80% of control areas
-Total ground cover	90% on treated areas or 80% of control areas

***Cover within parking loop area***

- Herbaceous cover 70% on treated areas or 80% of control areas
- Shrub/seedling cover 20% on treated areas or 80% of control areas
- Total ground cover 90% on treated areas or 80% of control areas

***Structure***

- Frequency of trees and shrubs 50% on treated areas or 80% of control areas
- Live trees/shrubs per acre 200 on treated areas or 80% of control areas

***Structure within parking loop area***

- Frequency of trees and shrubs 10% on treated areas or 80% of control areas
- Live seedlings per acre 100 on treated areas or 80% of control areas

**Composition**

- Sum of the importance values for the five dominant herbs will be less than 1.75.
- Noxious weeds will be controlled with no infestations larger than one square meter.

**5.2 Monitoring Schedule**

The project area will be inventoried annually for revegetation success for the first three years or until the goal parameters are met. During these annual inventories, species composition, percent cover, and condition will be described within all planted areas.

Additional monitoring/rehabilitation measures will be necessary if the

- target parameters are not met within three years. Or the monitored parameters drop below target by 15 percent or more any time after their initial attainment
- herbaceous cover fails to increase annually for the initial three years
- seedling mortality exceeds 30 percent
- the proportion of stressed, part-dead and dead seedlings/shrubs exceeds 40 percent

The type and extent of additional rehabilitation measures will be determined by the factors limiting rehabilitation success. Measures may include:

- seeding with the same or a modified seed mix
- addition of amendments such as fertilizer or soil texture modifiers
- planting additional seedlings and shrubs with browse and or rodent protective shields
- planting additional seedlings/shrubs at a larger size

-using exclosures to limit foot and ungulate traffic through vulnerable parts of the rehabilitated area

## 6.0 Herbicide Use

Where weed infestations are small (<25 plants) mechanical control of weeds may be preferable to herbicide use. Herbicides will be selected in consultation with Forest Service staff. Those herbicides with minimal non-target effects will be favored. Sensitive areas where herbicides are not to be used will be identified in coordination with Forest Service staff. Chemical treatments will be performed by a licensed pesticide applicator in accordance with relevant regulations. The licensee or its contractors will submit a Pesticide Use Proposal (where herbicide will be applied on federally administered lands) prior to herbicide application and a pesticide application report within 48 hours of spraying. It is expected that certified pesticide applicator is trained in the safe handling of herbicides; thus, all foreseeable precautions are not stipulated in this document.

### 6.1 Herbicide Application

Due to the site's proximity to the Buffalo River, no ester formulations of herbicides will be used. Only herbicide approved for use near water will be used (Aua-Klen, Landmaster, Glyphomate, or Rodeo). The licensed pesticide applicator will adhere strictly to herbicide label instructions and will keep a record of herbicide use. The herbicide record will include:

- Product name and EPA registration number (if applicable)
- Total amount of herbicide applied
- Size of the treated area
- Location of the treated area
- Date
- Applicator's name and certification information

Vehicle mounted sprayers may be used in areas that are easily accessed. Operators will not drive such vehicles off of established roads and their immediate right-of-ways. Such vehicles will be inspected and cleaned before leaving infested areas to prevent the spread of weeds along roadways. Backpack spraying may be used in less accessible areas. Prior to leaving an infested site the applicator will ensure that he/she is not transporting weed seed or propagules. Equipment will be calibrated prior to spraying and checked at intervals thereafter to confirm the correct application rate. Weather conditions that will preclude herbicide application include:

- Wind exceeding six miles per hour for liquid herbicides or 15 miles per hour for granular herbicides;
- Precipitation or imminent threat of precipitation; or, snow or ice covering foliage.



Herbicides will not be stored on-site. Transport of herbicides will adhere to the following guidelines:

- Chemical concentrate will be transported in sealed containers in a manner that prevents spilling
- Concentrate will be isolated from food, clothing, and safety equipment during transport
- All herbicide containers will be inspected daily for leaks

## **6.2 Herbicide Spills and Cleanup**

Precautions will be taken to avoid spills and minimize their potential effects. Herbicides will not be mixed within 200 feet of wetlands or open water. When possible, herbicides will be mixed in parking areas, turnouts or other non-vegetated sites. Appropriate funnels and other aids will be used to facilitate spill-free mixing. Vehicles transporting herbicides will carry and spill kit to allow effective response to chemical spills. Such a spill kit will contain:

- Protective clothing and gloves
- Absorptive material
- Plastic bags and bucket
- Shovel
- Fiber brush
- Dust Pan

In the event of a spill, priority will be place on protecting workers, containing the spill, and cleaning up. Workers will wear appropriate protective clothing. After leaks are contained, contaminated adsorptive material and soil will be deposited in an authorized disposal site.

## **6.3 Worker Safety**

All herbicide applicators will have readily accessible copies of the project's herbicide handling plan. Herbicide label instructions will be strictly adhered to at all times. The certified applicator will wear appropriate protective clothing. At least two-gallons of fresh water, mild soap, and an eye-wash bottle will be readily available. Directions to the nearest medical facility and emergency phone numbers will be carried in the vehicle transporting herbicides.

## **7.0 Summary**

These revegetation and rehabilitation measures are designed to create a sustainable native community of plants within the project's disturbed areas that will aid in curbing erosion, increase local wildlife habitat, and add to the area's scenic qualities.

## **8.0 Comments and Responses**

**USFS April 21, 2005**

### **USFS Comment 1**

Section J - 8, Table 3. The Forest suggests removing sheep fescue (*Festuca ovina*) and elk sedge (*Carex geyerii*) from the seeding mix. The available cultivars of sheep fescue are all non-native and elk sedge should come in on its own and would be extremely expensive to purchase as seed - if found available. Increase the percentage of slender wheatgrass to replace sheep fescue and elk sedge.

**Response:** The licensee is in agreement

### **USFS Comment 2**

There should be a section or paragraph detailing the quality and point of origin of seed and seedlings used. All seed needs to be certified weed free.

**Response:** The licensee will keep the USFS informed about the point of origin and quality of all seedlings used.

### **USFS Comment 3**

The number of shrubs to be used seems very extensive for the level of disturbance. Instead we recommend that the site be prepared and seeded the first year and plant the shrubs the next year if needed as determined by monitoring, i.e. are there shrubs and trees resprouting and establishing on their own. To preserve local site adaptations it is recommended that local stock be used or transplanted from approved surrounding locations. Topsoil should only be removed and stockpiled if absolutely necessary for construction. For example revegetation would be more effective for the concrete truck access for the fishway if topsoil could be left in place and then ripped post construction. This would preserve the native seed bank and allow resprouting of some shrubs.

**Response:** The licensee is in agreement.

### **USFS Comment 4**

The Revegetation Plan may need modification through the Scenery Management Plan as there may be areas where the concern is more over visuals than erosion. For example from a visual standpoint we may request fewer and larger shrubs strategically placed.

**Response:** The licensee is in agreement.

### **USFS Comment 5**

Ripping should be done to a depth of at least 12 inches or to the depth practical where bedrock occurs.

**Response:** The licensee is in agreement.

## ***Section I***

### ***B E/A for Threatened, Endangered, and Sensitive Species***

# Biological Evaluation/Assessment for Threatened, Endangered, and Sensitive Species

## **1.0 Introduction**

A license was issued to Fall River Rural Electric Cooperative, Inc. (Fall River) in November of 2004 by the Federal Energy Regulatory Commission (Commission) for the alteration and continued operation of the Buffalo River Hydroelectric Project. The 250-kilowatt (kW) run-of-river project is located on the Buffalo River near its confluence with the Henry's Fork of the Snake River, north of Ashton, in Fremont County, Idaho. The license stipulates several terms and conditions which must be met with approval from various resource agencies. The purpose of this biological evaluation is to describe the site specific effects the construction and operation of this project will have on the area's sensitive species and species protected under the Federal Endangered Species Act. This document has been developed in response to Article #401 4(e) 18-19 and US Forest Service (USFS) Condition #'s 18-19 of the license which states:

### ***Condition No. 18 - Protection of Threatened and Endangered Species Plan***

***Within 90-days prior to any ground-disturbing activity that may affect a federally listed or proposed species and their critical habitat, the Licensee shall file with the Commission a Threatened, Endangered, and Proposed for Listing Species Plan that is approved by the Forest Service in consultation with appropriate Federal and State agencies. This Plan shall describe how the Licensee shall coordinate, consult, and prepare a biological assessment evaluating the potential impact that any action may have on listed and proposed species and their habitat. At a minimum the plan shall:***

- Develop procedures to minimize adverse effects to listed species,***
- Ensure project-related activities shall meet restrictions included in site management plans for listed species,***
- Develop implementation and effectiveness monitoring of measures taken or employed to reduce effects to listed species,***
- Identify required elements contained within a biological assessment.***
- All construction shall be timed to avoid conflicts with sensitive species.***

***Condition No. 19 – Forest Service Sensitive Species Biological Evaluation***

***Within 90-days prior to implementing any activity that may affect a Forest Service sensitive species and their habitat, the Licensee shall file with the Commission a biological evaluation (BE) for Sensitive Species that is approved by the Forest Service.***

***At a minimum incorporate the following mitigation in the BE:***

- Develop procedures to minimize adverse effects to sensitive species.***
- Develop implementation and effectiveness monitoring of measures taken or employed to reduce effects to sensitive species.***
- All construction shall be timed to avoid conflicts with sensitive species.***

This evaluation considers all USFS sensitive species, and species protected under the Federal Endangered Species Act that may occur in the project area. Twelve species of wildlife and two species of plants are included. Information in this evaluation was compiled from agency records, species accounts, staff correspondence, and site specific surveys of the project area for sensitive species and potential habitat.

**2.0 Summary of Effects**

The licensee proposes to construct a new concrete intake structure with fish screens, a fish ladder, and seal the face of the dam. Construction of the Buffalo River Hydroelectric Project will take place over a three month period (August-October 2005).

Sensitive species may experience the following project effects:

- temporary disturbance due to construction noise, including disturbance outside the immediate project area
- temporary displacement during construction from habitats at the base of the dam or along the staging area.
- temporary reduction in the quality of habitat within areas disturbed during construction
- potential for impaired water quality during construction.

Of the 14 species considered in this biological evaluation one is likely to be affected by project construction. Bald eagles may temporarily avoid foraging in the project area during construction. However, no associated effects are anticipated to disrupt reproductive success or survival of local bald eagles.

### **3.0 Effects on Sensitive Wildlife**

#### **3.1 Northern goshawk**

The northern goshawk is a species of special concern in Idaho and a USFWS watch species (IDFG 2002). It nests from northern Canada and Alaska south to the Great Lakes and through the Rocky Mountains and forests of the Pacific Northwest.

##### **3.1.1 Assessment of Habitat**

Northern goshawks nest in coniferous forests and hunt forest birds, particularly grouse. It may also take mammals as large as rabbits. Goshawks occur as permanent residents in the project region. These birds may be seen incidentally near the project site, but are not known to nest nearby or use project areas for feeding. The project will not affect nearby forests.

##### **3.1.2 Protection and Mitigation Measures**

No protection or mitigation measures are proposed because the project is not expected to affect northern goshawks.

##### **3.1.3 Effects of Construction and Operation**

No effects are anticipated because the project will not alter suitable habitat for northern goshawks and construction noise is not expected to penetrate potential habitat.

#### **3.2 Western Toad**

The western toad is listed as an Idaho state species of concern and a USFWS species of concern in the project region (IDFG 2002). Criteria for listing include population declines, threatened habitat, or declines in closely related taxa. Western toad populations appear to be declining in the Greater Yellowstone Ecosystem and other parts of the western U.S. No records of toads in the immediate project vicinity exist, although sightings have been recorded north and immediately south of the project area (Link et al. 2001; Nussbaum et al. 1983). Nearly all of Fremont County is identified as potential range for the Western toad (Link et al. 2001).

Western toads are largely terrestrial, although usually found in the proximity of water. They

are found from lowlands to montane elevations and from moist coastal areas to northern deserts.

### 3.2.1 Assessment of Habitat

Toads use small mammal burrows or dig in loose soil, and hibernate through the winter months (Link et al. 2001; Nussbaum et al. 1983). They feed on insects, worms, and crayfish. Western toads breed during early summer in shallow, still or slow moving water (Link et al. 2001).

The project site is not likely to contain habitat significant to western toad populations. The immediate project vicinity is not a suitable breeding area for this species, as toads require still or slow moving water for breeding and larval development. However, western toads may use the banks of the project site for feeding or hibernating.

### 3.2.2 Protection and Mitigation Measures

The following protective measures are designed to protect western toads should they occur in the proposed project area:

- Limit construction to late summer/early fall to avoid disturbance to breeding amphibians.
- Where disturbed areas are up-slope from aquatic habitat, stake erosion control fiber mat in place over exposed soil. Protective mat or equivalent structure should remain in place until vegetation cover becomes established.
- If herbicide application becomes necessary within areas up-slope from aquatic habitat, select a contact herbicide with no residual effects in the soil.

### 3.2.3 Effects of Construction and Operation

Given the recommended protection and mitigation measures, potential habitats for this species should not be affected by project activities. No effects are anticipated.

## 3.3 Gray wolf

The gray wolf is listed as endangered outside of Alaska under the Endangered Species Act. It currently ranges throughout Canada and Alaska and is also found in northern Washington, Idaho, and Montana. Wolves have also been reintroduced to Yellowstone National Park and wilderness areas of central Idaho. These reintroduced populations are listed as experimental non-essential populations under the Endangered Species Act (IDFG 2002).

### 3.3.1 Assessment of Habitat

The occurrence of this species has not been fully documented in the project area. Wolves from Yellowstone National Park have the potential to range near here. However, the project does not occupy important feeding or denning areas.

### 3.3.2 Protection and Mitigation Measures

No protective measures are planned for gray wolves because no effects are anticipated.

### 3.3.3 Effects of Construction and Operation

Project construction and operation are not expected to affect gray wolves. The project will not disturb any feeding or potential denning areas.

## 3.4 Townsend's big-eared bat

The Townsend's big-eared bat is an Idaho state species of concern and a USFWS species of concern in the region (IDFG 2002). Concern over the species arises because of declines in the number of bats found in hibernacula in southern Idaho. This bat is found from British Columbia, east through Montana, south into western south Dakota, Nebraska, Kansas, Oklahoma and Texas, into Mexico and along the Pacific Coastal States of California, Oregon, and Washington. It has been collected from 17 counties in Idaho and may occur near the project site (Link et al. 2001).

### 3.4.1 Assessment of Habitat

Townsend's big-eared bats use a variety of habitats from shrub steppe to coniferous and deciduous forests. In Idaho, abandoned mines, old buildings, and lava tube caves provide winter hibernacula and maternity sites. During the summer they roost in these areas and also in trees and under bridges. Townsend's big-eared bats feed predominantly on moths, but also ingest beetles and flies (Link et al. 2001). Although Townsend's big-eared bats may occur or feed incidentally near the project area, no important habitat occurs at the site.

### 3.4.2 Protection and Mitigation Measures

No protective measures are planned for Townsend's big-eared bats because no effects are anticipated.

### 3.4.3 Effects of Construction and Operation

Project Construction and operation are not expected to affect Townsend's big-eared



bats. The project will not disturb potential roosting habitats or interfere with feeding activities.

### 3.5 Trumpeter swan

The trumpeter swan is listed as an Idaho state species of concern as well as a USFWS species of concern in the region (IDFG 2002). Their range extends from Alaska to southeastern Oregon, Idaho, and Wyoming. Winter migrants can be found south into California, Utah, New Mexico, and Colorado (DeGraaf et al. 1991). The Rocky Mountain population of trumpeter swans was near extinction in 1935 and now numbers over 2,000 individuals. Over 500 swans reside year-round in the Greater Yellowstone region; the remaining birds nest in Canada during the summer (Shea 1993). The Buffalo and Henry's Fork Rivers are important wintering areas for trumpeter swans.

#### 3.5.1 Assessment of Habitat

Nesting swans require emergent and submerged aquatic vegetation and prefer fertile marshes or lakes. During winter, swans use shallow rivers with open water and level terrain nearby (DeGraaf et al. 1991; Link et al. 2001). Trumpeter swans feed on aquatic vegetation and occasionally graze upland areas. In Idaho, they feed primarily on pondweed and water-milfoil (Link et al. 2001).

Trumpeter swans can be observed in the project area from mid-November to early April. High concentrations of wintering swans in the project region have created concern over habitat deterioration and vulnerability of the flock to localized severe weather (Shea and Drewien 1999). Efforts to disperse and relocate this concentration of swans have been in place since 1990 and have resulted in fewer swans in the project area. During 2001, mid-winter surveys recorded 989 trumpeter swans in the Island Park area.

#### 3.5.2 Protection and Mitigation Measures

No permanent protection or mitigation measure are planned for the trumpeter swans because the project is not expected to affect this species.

#### 3.5.3 Effects of Construction and Operation

Since project construction will be completed by October of 2005, no negative construction related impacts to wintering trumpeter swans are anticipated. Swan habitat will not be permanently altered during project construction or operation.

### 3.6 Whooping crane

The whooping crane is listed as an endangered species by the state of Idaho and as a federal endangered species under the ESA. However, whooping cranes in Idaho, introduced to the Grays Lake NWR, are classified as an experimental/nonessential population (IDFG 2002). Only 163 wild whooping cranes remain, 13 of these in the Gray's Lake flock (DeGraaf et al. 1991). Whooping cranes breed in south central Mackenzie and northern Alberta and winter on the Gulf Coast of Texas (DeGraaf et al. 1991). The Gray's Lake birds winter in central New Mexico. Whooping cranes have been documented in eastern Idaho, including Island Park Reservoir, and may migrate through or incidentally occur near the project site (Link et al. 2001).

#### 3.6.1 Assessment of Habitat

Whooping cranes nest in open marshes on mounds of emergent vegetation and inhabit aspen parkland, northern forests, short grass plains, river deltas, and tundra during the summer. They winter on tall grass prairies, salt flats, coastal marshes and lagoons. Winter foods include crustaceans, insects, sedges, and sprouting grain (DeGraaf et al. 1991). During the summer whooping cranes feed on insects, crustaceans and berries (Link et al. 2001). Whooping cranes may incidentally occur on the project site, but suitable nesting habitat does not occur near the Buffalo River hydroelectric project.

#### 3.6.2 Protection and Mitigation Measures

No protection or mitigation measures are planned for whooping cranes because the project is not expected to affect this species.

#### 3.6.3 Effects of Construction and Operation

Due to the lack of appropriate habitat in affected project areas no effects on whooping crane are anticipated.

### 3.7 North American wolverine

The North American Wolverine is Idaho state species of concern and a USFWS watch species (IDFG 2002). It is found from northern Canada south to northern Washington, Idaho, and Montana. It occurs further south in the Rocky, Cascades, and Sierra Nevada Mountains.

#### 3.7.1 Assessment of Habitat

Wolverines are secretive and feed primarily on carrion and a variety of mammals. They may also eat berries and roots. Adults typically have home ranges of 150-200 square miles (Zevloff and Collett 1988). Young are born in the early spring in

protected areas. Wolverines occur in the project region, but are rarely observed due to their secretive habits. The project area does not provide unique habitat for this species and frequent recreation use also diminishes the possibility of the area being suitable wolverine habitat.

### 3.7.2 Protection and Mitigation Measures

No protection measures are specifically planned for wolverines.

### 3.7.3 Effects of Construction and Operation

The project is not expected to affect wolverines. Wolverines do not frequent the project area and construction activity should not disturb wolverines or alter their habitat.

## 3.8 Bald eagle

The bald eagle is listed by the state of Idaho as endangered and by the USFWS as threatened under the ESA (IDFG 2002). Bald eagles breed locally through the western U.S., primarily along rivers, large lakes, and reservoirs (Link et al. 2001). Populations in Idaho have risen from 11 documented territories in 1979 to 138 in 2000 (Beals and Melquist 2001; Link et al. 2001). Breeding eagles are permanent residents in the project area and may be joined by migratory individuals from Canada during the fall, winter, and spring. Wintering bald eagles feed on carrion, fish and waterfowl, while in summer, diet is predominately fish and waterfowl.

### 3.8.1 Assessment of Habitat

There are at least 12 known active eagle nest sites within the project region. Three territories occur in the vicinity of the Pond's Lodge hydroelectric project, one on the Buffalo River (IDFG nest # 18IC17), two on the Henry's Fork River downstream (Box Canyon and Last Chance; IDFG nest # 18IC03 and 18IC12 respectively; Figure 3-14) and one nearby on state owned lands (IP Bills; IDFG nest # 18IC13; Beals and Melquist 2001; Figure 3-14). The Box Canyon pair are known to feed at the base of Island Park Dam during the winter and may also use the tailrace from the Pond's Lodge hydroelectric project (Stricklan 1992). Winter feeding areas are particularly important because nesting is initiated before ice has cleared off of many summer feeding sites. The Buffalo River nest was not occupied in 2000. During the same year the Box Canyon nest failed and the Last Chance and IP Bills nests each fledged one eagle.

### 3.8.2 Protection and Mitigation Measures

The following protective measures are designed to protect bald eagles in the proposed project area:

- Construction activity will begin after 8:00 a.m. and end before 6:00 p.m. to minimize disturbance during peak eagle foraging hours.
- Limit construction activity to August-October
- Keep construction traffic and speeds on existing roads comparable to existing conditions

### 3.8.3 Effects of Construction and Operation

Minimal effects are anticipated on eagles foraging during the early morning and late evening when equipment will be idle. However, it is expected that some mid-day foraging eagles will be displaced due to construction activity. These eagles are expected to use other suitable habitats either below Island Park Dam in the River or above in the Reservoir.

## 3.9 Yuma myotis

The yuma myotis is not protected by the state of Idaho, but is a USFWS watch species in the region, indicating unique habitat needs or a lack of information on the population (IDFG 2002). Yuma myotis are found from western British Columbia, south into western Montana, Idaho, eastern Washington, Colorado, New Mexico, and Arizona to central Mexico. Populations also extend along the Pacific Coastal areas of Baja California, California, Oregon, and Washington. They range throughout Idaho, although little is known about maternity colonies and winter roosts (Link et al. 2001).

### 3.9.1 Assessment of Habitat

Yuma myotis are closely associated with water and riparian habitats. They feed on moths and emerging aquatic insects. Maternity colonies may form in mines and caves with high humidity and low human disturbance. During the summer they roost in crevices in cliffs, old buildings, mines, caves, bridges, and abandoned cliff swallow nests. No large winter concentrations of this species have been studied in Idaho (Link et al. 2001). The Pond's Lodge area may provide feeding habitat for the yuma myotis. No roosting areas are obvious in the project vicinity.

### 3.9.2 Protection and Mitigation Measures

No protection or mitigation measures are proposed because the project is not expected affect yuma myotis

### 3.9.3 Effects of Construction and Operation

No effects are anticipated because suitable habitat for yuma myotis will not be significantly altered within or adjacent to affected project areas.

### 3.10 Western small-footed myotis

The western small-footed myotis is not protected by the state of Idaho, but is a USFWS watch species in the region, indicating unique habitat needs or little information about the species (IDFG 2002). This species ranges from southern British Columbia, Alberta and Saskatchewan along the western edge of the Dakotas, Nebraska, Kansas, Oklahoma, and northern Texas into central Mexico, then west to northern Baja California and along the eastern half of the Pacific Coast states of California, Oregon and Washington. In Idaho, it is known to occur in most of the southern part of the state (Link et al. 2001).

#### 3.10.1 Assessment of Habitat

Western small-footed myotis are found in a variety of habitats including arid shrub steppe, talus slopes, coniferous forest, and grasslands. In Idaho, they are associated with lava-tube caves where they hibernate in cracks and crevices. Western small-footed myotis forage for moths, flies, and other insects along cliffs and rocky slopes. Summer roosts include rock crevices, boulders, loose bark, and buildings (Link et al. 2001). Although the western small-footed myotis may incidentally occur at the project site, habitats important to this species are not found in the project area.

#### 3.10.2 Protection and Mitigation Measures

No protection or mitigation measures are proposed because the project is not expected to effect western small-footed myotis.

#### 3.10.3 Effects of Construction and Operation

No effects are anticipated because suitable habitat for western small-footed myotis does not occur within the affected project areas.

### 3.11 Columbia spotted frog

The Columbia spotted frog is a species of concern in Idaho and a species of concern on the Targhee National Forest (IDFG 2002). Spotted frogs are found from extreme southeastern Alaska, south through western Alberta to coastal Oregon and Washington, and east to northern Wyoming, northern Utah, and central Nevada (Link et al. 2001). Records of this species do exist within the project vicinity (Nussbaum et al. 1983).

### 3.11.1 Assessment of Habitat

Spotted frogs occupy the margins of lakes, ponds, and slow-moving backwater pools. They breed among emergent vegetation. Spring amphibian surveys (2002) did not find spotted frogs at the project site. Although a limited amount of suitable habitat may occur within the project area it is not an ideal area for the species because of the vulnerability of high flows in the area.

### 3.11.2 Protection and Mitigation Measures

The following protective measures are designed to protect spotted frogs should they occur in the proposed project area:

- Limit construction to late summer/early fall to avoid disturbance to breeding amphibians.
- Where disturbed areas are up-slope from aquatic habitat, stake erosion control fiber mat in place over exposed soil. Protective mat or equivalent structure should remain in place until vegetation cover becomes established.
- If herbicide application becomes necessary within areas up-slope from aquatic habitat, select a contact herbicide with no residual effects in the soil.

### 3.11.3 Effects of Construction and Operation

Given the recommended protection and mitigation measures, potential habitats for this species should not be affected by project activities. No effects are anticipated.

## 3.12 Grizzly bear

Grizzly bear are listed as threatened under the Endangered Species Act. This species is found in northern and western Canada south to extreme northern Washington and Idaho. It also occurs in Glacier and Yellowstone National Parks.

### 3.12.1 Assessment of Habitat

Bears are omnivores and habitat generalists. Although they once ranged throughout the western United States, human conflicts currently limit their distribution. Human development negatively affects grizzly populations because of conflicts arising from livestock predation and direct human-bear encounters. In general, the project area lacks development with the exception of recreational use areas. The project area is classified "Management Situation III" grizzly bear habitat. This type of habitat is

defined as areas where bear presence is possible but infrequent, and where habitat maintenance and improvement are not management considerations.

### 3.12.2 Protection and Mitigation Measures

No measures are proposed for the protection of grizzly bears because the project is not expected to affect this species.

### 3.12.3 Effects of Construction and Operation

Construction and operation of the proposed hydro power project are not expected to affect grizzly bears.

## 4.0 Effects on Sensitive Plants

The Buffalo River Hydroelectric project is located at the juncture of three different vegetation regions. The dominant species are from the Rocky Mountain Association, but Intermountain and Great Basin species are also present. Upland areas are characterized by lodgepole pine (*Pinus contorta*), occasional Douglas-fir (*Pseudotsuga menziesii*) and subalpine fir (*Abies lasiocarpa*) also occur. Forests are fairly open and dry, and the relatively consistent topography at approximately 6,300 ft. encourages somewhat uniform plant communities.

Microclimatic and edaphic conditions encourage greater plant diversity along the Henry's Fork and Buffalo Rivers. Douglas-fir is dominant in pockets and subalpine fir is particularly common along the Buffalo River. Riparian shrub species include chokecherry (*Prunus virginiana*), wild rose (*Rosa nutkana*), white spirea (*Spirea betulifolia*), birch (*Betula* sp.), willow (*Salix* sp.), and aspen (*Populus tremuloides*).

The immediate project vicinity is characterized by a steep basalt face along one bank of the forebay and a marshy area dominated by grasses, sedges, and rushes along the other bank. Downstream along the tailrace, upland vegetation frequently grows to the river margins. In many reaches, riparian shrubs are limited to a narrow strip.

Historically, fire shaped local plant communities. More recently, timber management has been the primary disturbance. During the 1980s a severe mountain pine beetle infestation necessitated intensive salvage logging and revegetation efforts (USDA Forest Service 1985). Concentrated use of the project area by anglers and other recreational users has created disturbance to forb and graminoid communities.

The Targhee National Forest manages the majority of land in the project region, including the project site. Currently there are 12 sensitive species tracked on the forest and one threatened species. None of these species are documented within or near the project area (USFS 2002). Only one sensitive species, pink agoseris (*Agoseris lackschewitzii*), may find suitable habitat within the project area (USFS 2002).

The movement of construction equipment to repair the dam may disturb up to 2,500 square feet of upland vegetation. Repairs could change the depth and flow of water through approximately 500 square feet of wet meadow on the west side of the tailrace.

Prior to 2002 no site specific vegetation study had been completed in the project area. To adequately determine the effects of dam repairs on vegetation, surveys were conducted in 2002 by Ecosystems Research Institute with the following objectives: to locate pink agoseris and Ute ladies' tresses within potentially disturbed areas; and to characterize plant species composition, relative abundance, and structure within areas that may be disturbed. Neither Ute ladies' tresses nor pink agoseris were encountered in the surveys.

No measures specifically designed to protect sensitive, threatened, or endangered plants have been recommended because no species with this designation has been found within affected project areas. General measures designed to control weeds and restore disturbed areas have been proposed and will indirectly benefit those sensitive plants with potential habitat in the project vicinity by preserving/restoring these habitats for potential future occupancy. These protection and mitigation recommendations include:

- Implement the comprehensive Vegetation Management Plan.
- Limit construction traffic as much as possible to established roads, parking lots, and staging areas.
- Establish designated parking and walkway areas for long-term access to the powerhouse to limit trampling of vegetation.
- Review all revegetation plans with USFS personnel that have experience establishing plantings in the project region prior to ground disturbance.

Since no sensitive, threatened, or endangered species were located during surveys, no direct effects are anticipated.

## **5.0 Cumulative Effects**

Several aspects of the proposed Buffalo River Hydroelectric Project may contribute to additive effects on sensitive wildlife and plants. A discussion of these cumulative facts is included below, along with a summary of how each will affect sensitive, threatened, or endangered plants and wildlife.

### **5.1 Disturbance Caused by Construction Activity**

Disturbance to wildlife from sound and human presence at the base of the dam in addition to angling and other recreational activities may magnify effects to sensitive species. Sensitive species that forage or breed in the vicinity may be affected by such disturbance. Bald eagles have the potential for this type of affect. Other species either do not have



suitable habitat within areas affected by construction disturbance, or use affected habitats incidentally and would not be negatively affected by cumulative disturbance..

Foraging bald eagles may be sensitive to this cumulative impact because angling activity is high within favorable foraging habitats elsewhere surrounding the project area. However, because project construction will occur outside of peak eagle foraging hours and abundant fish and water fowl are available in the Henrys Fork and Island Park Reservoir, effects are expected to be minimal.

## 5.2 Soil Disturbance and Weed Introductions

Activities that introduce weed propagules or additional soil disturbance to affected project areas may increase the potential for noxious weed impacts within and adjacent to the project area. Such activities may include recreationists entering the area from weed-infested locales, concentrated recreational use that could cause soil disturbance, and illegal off-road vehicle use. These factors may combine to introduce and spread noxious weeds in the project area and the adjacent habitats. In addition, disturbed project soils may provide a seedbed for noxious weeds that could then expand their distribution into less disturbed habitats. No sensitive plants have been located within the project area; however, these cumulative effects have potential to affect sensitive species in two ways. First, weeds may degrade potential habitats that occur in the project vicinity. These habitats are not currently occupied, but provide habitat for future populations of sensitive plants. Second, robust weed populations could contribute to the expansion and colonization of new areas. Habitats outside of the project area that are currently occupied by sensitive plants may be indirectly affected by noxious weeds promoted by project related ground disturbance. These cumulative effects are not expected to be significant if the comprehensive vegetation management plan is adhered to. This plan provides for frequent/regular control of weeds in and adjacent to the project area for the term of the license. The vegetation management plan also specifies restoration guidelines, because healthy native plant communities are more resistant to weed invasion.

## 6.0 Comments and Responses

USFS April 21, 2005

### **USFS Comment 1**

Yellowstone cutthroat is also a sensitive species that occurs within the Henrys Fork and needs to be addressed in the BE. A "May Impact" determination would be appropriate.

**Response:** The licensee is in agreement, please see Table I - 1.

**USFS Comment 2**

Incorporate a summary table that displays the determinations for all sensitive species such as the one below.

Species	No Impact	May Impact Individuals Or Habitat, But Will Not Likely Contribute To A Trend Towards Federal Listing Or Loss Of Viability To The Population Or Species	Will Impact Individuals Or Habitat With A Consequence That The Action May Contribute To A Trend Towards Federal Listing Or Cause A Loss of Viability To The Population Or Species	Beneficial Impact
Yellowstone Cutthroat		X		

**Response:** The following page contains the requested table, Table I - 1.

<b>Species</b>	<b>No Impact</b>	<b>May Impact Individuals Or Habitat, But Will Not Likely Contribute To A Trend Towards Federal Listing Or Loss Of Viability To The Population Or Species</b>	<b>Will Impact Individuals Or Habitat With A Consequence That The Action May Contribute To A Trend Towards Federal Listing Or Cause A Loss of Viability To The Population Or Species</b>	<b>Beneficial Impact</b>
Yellowstone Cutthroat		x		
Northern Goshawk	x			
Western Toad		x		
Gray Wolf	x			
Townsend's Big-eared Bat	x			
Trumpeter Swan	x			
Whooping Crane	x			
North American Wolverine	x			
Bald Eagle		x		
Yuma Myotis	x			
Western Small- footed Myotis	x			
Columbia Spotted Frog		x		
Grizzly Bear	x			
Pink Agoseris	x			

Table I - 1

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***Exhibit A***

***Correspondence on  
Plans***



United States  
Department of  
Agriculture

Forest  
Service

Caribou-Targhee  
National  
Forest

1405 Hollipark Drive  
Idaho Falls, ID 83401  
208-524-7500

File Code: 2770

Date: April 7, 2005

Brent L. Smith  
Northwest Power Services, Inc  
P.O. Box 535  
Rigby, ID 83442

Re: Buffalo River Hydroelectric Project, FERC Project #1413

Dear Brent:

The USDA Forest Service has received for review and comment several plans submitted by Northwest Power Services, Inc. These plans are required by the Buffalo River Hydroelectric Project, Federal Energy Regulatory Commission (FERC) Project # 1413 License issued November 5, 2004. These plans are dated March 11-23, 2005 and request comments within 30 days. As identified and agreed upon in your telephone conversation with Lee Mabey on March 30, 2005, the USDA Forest Service will review all of these plans and provide one response to Northwest Power Services, Inc. by April 23, 2005, which is 30 days from the date the last plan was submitted.

If you have any questions or need additional information, please contact Lee Mabey, Team Leader at (208) 557-5784.

Sincerely,

JERRY B. REESE  
Forest Supervisor

cc: Ms. Magalie R. Salas, Secretary, Federal Energy Regulatory Commission, 888 First Street  
N.E., Washington, DC 20426

**IDAHO FISH & GAME**

Upper Snake Region  
4279 Commerce Circle  
Idaho Falls, Idaho 83401

Dirk Kempthorne / Governor  
Steven Huffaker / Director

1c

8

11 April 2005

Brent Smith  
President, Northwest Power Services Inc.  
PO Box 535  
Rigby ID 83442

**RE Buffalo River Hydroelectric FERC #1413 Article 406 Condition 14 Fish Screen,  
and Article 405 Fishway Design:**

Dear Brent:

Idaho Department of Fish and Game (IDFG) has reviewed the above referenced letters and accompanying diagrams. IDFG has been involved in FERC #1413 re-licensing and associated articles of the license since the process' inception. We are in receipt of letters and engineering drawings for (1) the proposed fish screen mechanism as required in article 406, letter dated March 22, 2005 and (2) the proposed fishway design as required by article 405, letter dated March 11, 2005.

**Fish Screen Mechanism, Article 406:**

We support the intake and fish screen as proposed in the drawings. We believe that the intake section of the screen, and the 1/4 inch design openings, will serve to protect all but the very smallest of fish from passing into the turbines. Other documents relate to the estimated 0.8 feet per second approach velocity of the water going through the intake screen. This velocity should serve to protect all but the smallest of fish from becoming impinged upon the intake screen. The dimensions and estimated water velocities approaching the screen are acceptable to us.

We understand that the re-licensing process necessitates monitoring of this intake screen. We are unsure at this point, how the screen will be cleaned and are accepting that it will somehow occur manually. That is, no additional hardware, or grates will be attached to the screen mechanism. We would like to see the proposed method of cleaning the intake screen, the schedule it might occur, and any conceptual plan you might have for monitoring fish impingement.

**Fishway Design, Article 405:**

IDFG staff has worked in conjunction with your staff and consultants, and with those from the U.S. Forest Service, and the Henry's Fork Foundation to develop the best design possible given the conditions under which this fishway must be built and function. We believe that together, we have provided recommendations resulting in a design with an excellent likelihood of functioning successfully. We are satisfied that you have provided ample opportunity for IDFG to review and consult in the design phase, and you have recommended a final design acceptable to us.

It will be critical to monitor construction of the fishway to assure that slopes, pool sizes, pool width/length ratios, and all other design features are constructed appropriately. To this end, we anticipate having our Environmental Staff Biologist Gary Vecellio observe construction as the plan becomes a reality. We also hope you will invite others who helped in this design, and hope you have retained the services of the engineering firm (Sunrise Engineering Inc.) responsible for the drawings to monitor fishway construction.

We are concerned that several very specific design recommendations actually appear in the final product. Critical design features include:

- Pool width/depth ratios of 1:1 or larger. Each pool must be as long, or longer than it is wide to reduce the likelihood of patterns of turbulence within and among pools.
- Wing walls where the water inside the fishway turns 180 degrees must be angled at 45 degrees as shown in sheet number 4.
- Piping for the auxiliary water flow is critical to fishway efficiency. The additional flow provided at the valve box near the downriver end of the fishway must be angled parallel to the outflow of the fishway,
- It is critical that the entrance pool (large drawing, sheet 10) of the fishway (for fish moving upstream) be located in the existing natural pool of the Buffalo River. The pool lengths and fishway total length is designed to utilize this natural resting pool for fish to begin swimming into the fishway.
- Rock to be used to line the floor of the fishway must be rounded river rock, not angular broken basalt. These should average 4" to 6" mean diameter (sheet 4).
- Baffle boards installed between pool sections are to be designed specifically as shown in Drawing C, Sheet 5. To achieve both streaming and plunging flows within the fishway, we anticipate needing this specific design. The orifice within the baffle board sections should initially be placed opposite (not below) the notch in the top baffle board (drawing C, Sheet 5).
- It is critical that the design is able to be modified post-construction. By this we mean that the baffles will be able to be removed, replaced, and changed in design and orifice location. This will necessitate that slots are used to place these baffle boards (drawings C & E, sheet 5).

We are concerned that you may need to engineer and construct some form of cage, or cage-holding mechanism at the upstream end of the fishway for use in your monitoring program. This is not shown in your drawings. Also, is additional engineering necessary to de-water the fishway for moving or replacing baffles. Should drawings of the mechanisms needed to dewater the fishway accompany this package?

IDFG supports your plans and engineering for the fish screen and fishway. We believe that the designs and engineering approaches taken will be likely to allow upstream and downstream passage of salmonids down to 100mm in length. We appreciate being an integral part of the design process for these components. We believe you have entirely complied with FERC requirements within Articles 405 and 406 to provide consultation to IDFG in these phases.



**If you have any questions, please contact our Environmental Staff Biologist Gary Vecellio at 525-7290.**

Sincerely,

A handwritten signature in black ink that reads "R.J. Saban". The signature is written in a cursive, flowing style.

**Robert J. Saban  
Regional Supervisor**

**RJS:gmw**

**Cc: Natural Resource Policy Bureau, IDFG  
Phil Jeppson, IDFG Engineering  
Fisheries Bureau, IDFG  
Jim Fredericks, IDFG  
Lee Mabey, USFS  
Jim DeRito, HFF  
Scott Christensen, GYC**

**IDAHO FISH & GAME**

Upper Snake Region  
4279 Commerce Circle  
Idaho Falls, Idaho 83401

Dirk Kempthorne / Governor  
Steven Huffaker / Director

13 April 2005

Brent Smith  
President, Northwest Power Services Inc.  
PO Box 535  
Rigby ID 83442

**RE Buffalo River Hydroelectric Project, FERC 1413, Construction Plans:**

Dear Mr. Smith :

Idaho Department of Fish and Game (IDFG) has reviewed the above referenced report and plans, consulted with the U.S. Forest Service (USFS) and several non-governmental entities, and we submit the following comments for your consideration. IDFG has been involved in FERC #1413 re-licensing and associated articles of the license since the beginning. The construction plans cover 11 sections pertaining to FERC #1413, including Fishway and Fish screen monitoring plan (Article 407), Public Safety Plan (Article 410, and USFS Condition #15), and Recreation Plan (USFS Condition #10).

**Fishway & Fish Screen Monitoring Plan (Article 407), Section D:**

As noted in our letter dated 11 April 2005, we support the intake and fish screen as proposed in the drawings. We also support the fishway diagrams with consideration to our comments of 11 April 2005.

Section 2.1 Fish Screen Monitoring states that the approach velocity of water toward the fish screen will be 0.8 feet per second. We request that basic measurements be made to establish this approach velocity upon plant operation. Further, we request that you attempt to document a zero 'sweeping' velocity along the fish screen.

Section 2.2 Fish Ladder Monitoring- Please provide a diagram or engineering drawings of the fish trap to be used in monitoring upstream fish use of the fishway. We recognize that the drawing may be conceptual at this point. We request that the monitoring project be designed to verify that downstream fish passage through the fishway occurs as well as upstream fish passage. We recognize that the majority of flow, and presumably fish, will wash downstream via the overflow.

Please state that you will allow access to IDFG, and the U.S. Forest Service (USFS) to all fishway facilities and screens in order to monitor conditions. We intend to take flow measurements within the fishway at varying water levels in hopes of achieving the best fish passage conditions possible by altering baffle shapes and orifice positions if necessary.

**Diversion Operation Plan, Article 410, Section E:**

Please comment on your need to remove sediment from the forebay of the project in the past. Your statement that it will not be necessary may be correct. But, if sediment removal is necessary due to an upstream event, we would like your plans on how it will occur.

Under Procedures for flood conditions, you state that you intend to "pull the stop logs increasing flow through the dam spillway" if this becomes necessary. IDFG requests that, should this occur, you closely monitor for changes in the streambed at the downstream entrance to the fishway and below. The fishway is designed to begin at a critical pool along the upstream migration path. If pulling stop logs to increase flow through this section occurs, we need to ensure that the stream channel is monitored for alteration. If the fishway entrance pool is changed or destroyed, or the fishway entrance conditions altered, IDFG needs assurance that it will be reconstructed. Your procedures for flood conditions must incorporate monitoring of the channel from the fishway entrance downstream at least 50 meters.

**Public Safety Plan, USFS Condition #7, Section F:**

You claim that the river corridor between the highway 20 bridge and the hydropower backwaters is "a very low use recreational area". We do not agree, but suggest that fishing is an important recreational use in this area. Other uses such as skiing and waterfowl watching are also popular. We suggest that the primary factor keeping fishing use lower than what might be expected is a lack of access along this section of river. The Buffalo Summer Home area on the south river shore detracts from the public accessing the river corridor along the most frequently traveled shore (Forest Road 136). We suggest that the hydropower facility owners consider cooperative efforts to increase recreational access to this river from the southern shore (see next section).

Exhibit B shows approximate locations of "Danger-No Boating or Swimming Beyond this Point" signs. We would like to know the rationale for the location of these signs. Are there conditions in your FERC license stating that these signs are placed a specific distance from the dam? Are these recommendations or regulations given to you in your Special Use Permit by the USFS? We would like you to consider and report what is necessary (by law or permit condition) in terms of this signage. If this signage is entirely voluntary, then we would like to cooperatively re-consider what boating usage may be reasonable and safe in the forebay above the dam.

**Recreation Plan, USFS Condition #10, Section G:**

This section addresses, in part, "future development or rehabilitation of recreation facilities or sites". We request that the facility owners/operators cooperate with IDFG, Idaho Department of Parks and Recreation, and the USFS and consider building a non-motorized boating access in the backwaters of the facility. This river corridor is, in our opinion, not appropriate for motorized boating. However, it is designated by the USFS as "Eligible Recreational River" from the confluence of Elk Creek to the forebay of the hydropower project.

IDFG believes that quality recreational fishing and wildlife watching opportunities would perhaps be opened by allowing people to take out canoes or personal non-motorized watercraft such as pontoon boats near where the "Danger-No Boating" signs now are. Canoes and personal non-motorized watercraft would be able to enter the river either at the USFS fishing pier, USFS

campground, or Highway 20 bridge for a leisurely and youth-friendly fishing and floating experience. This would necessitate a landing and path to take their boat out near the parking area at the end of Riverside Drive. We believe that the groups should cooperate and explore this possibility as part of your recreational plan.

We understand that operators of the hydropower facility are perhaps the primary users of the USFS road on the northern shore of the Buffalo River below the Highway 20 bridge. Please disclose any plans you have to gravel, grade, harden or upgrade this road for access to your facility which may be used by the public.

Thank you for the opportunity to comment on this document. If you have any questions, please contact our Environmental Staff Biologist Gary Vecellio at 525-7290.

Sincerely,



R. J. Saban  
Regional Supervisor

RJS:grv

Cc: Natural Resource Policy Bureau, IDFG  
Adrienne Keller, USFS  
Lee Mabey, USFS  
Jim DeRito, HFF  
Scott Christensen, GYC  
Mary Lucachick, IDPR



STATE OF IDAHO  
DEPARTMENT OF  
ENVIRONMENTAL QUALITY

900 North Skyline Dr., Suite B • Idaho Falls, Idaho 83402-1718 • (208) 528-2650

Dirk Kempthorne, Governor  
Toni Hardesty, Director

April 20, 2005

Mr. Brent Smith  
Northwest Power Services, Inc.  
PO Box 535  
Rigby, Idaho 83442

**RE: BUFFALO RIVER HYDROELECTRIC PROJECT (FERC # 1413) CONSTRUCTION PLANS**

Dear Mr. Smith:

The Idaho Department of Environmental Quality (IDEQ) has reviewed your construction plans, dated March 16, 2005. We would offer the following comments and suggestions:

**General Comments**

All in-stream excavation should be conducted in a manner which minimizes sediment transport and turbidity. This can be accomplished through effective use of best management practices (BMPs), timing, and precise excavation.

**Specific Comments**

**Section 3.1.1.** The temporary storage area should be separated from the river with silt fence or suitable erosion control best management practice.

**Section 3.2.1.** The turbidity of the river below the location of the coffer dam and removed water shall not exceed state water quality standards (see IDAPA 58.01.02 for details). Real time monitoring should be reviewed during the activity so that construction or pumping activities can be curtailed if necessary.

In addition, IDEQ will not be issuing any addition water quality certifications for the construction outlined in the plan. The November 28, 2003 water quality certification issued by this office covers the construction activities detailed in your construction plans.

If IDEQ can clarify any of our comments or can be of addition assistance, please do not hesitate to contact me at 208.528.2650 or [tsaffle@deq.idaho.gov](mailto:tsaffle@deq.idaho.gov).

Sincerely,

A handwritten signature in black ink, appearing to read "Troy Saffle", is written over a horizontal line.

Troy Saffle  
Regional Water Quality Manager  
Idaho Falls Regional Office

c: James Johnston, Regional Administrator  
Gary Vecellio, IDFG  
Lee Mabey, USFS

IFRO

30061



United States  
Department of  
Agriculture

Forest  
Service

Caribou-Targhee  
National  
Forest

1405 Hollipark Drive  
Idaho Falls, ID 83401  
208-524-7500

File Code: 2770

Date: April 21, 2005

Brent L. Smith  
Northwest Power Services, Inc  
P.O. Box 535  
Rigby, ID 83442

Re: Buffalo River Hydroelectric Project, FERC Project #1413

Dear Brent:

The USDA Forest Service has received for review and comment several plans submitted by Northwest Power Services, Inc. These plans are required by the Buffalo River Hydroelectric Project, Federal Energy Regulatory Commission Project No. 1413 License issued November 5, 2004. These plans are dated March 11 to 23, 2005 and request comments within 30 days. As identified and agreed upon in your telephone conversation with Lee Mabey on March 30, 2005 and documented in my letter to you dated April 7, 2005, the USDA Forest Service has reviewed all of these plans and is providing one response to Northwest Power Services, Inc. by April 23, 2005, which is 30 days from the date the last plan was submitted.

Detailed Forest Service comments on the attached plans are included within Enclosure 1. A total of twelve plans were submitted and the Forest Service is approving eight of the twelve plans with some edits (see Enclosure 1). The plans which are not approved include the Construction, Recreation, Safety and Scenery Plans. It is anticipated that Forest Service comments will be addressed in all the plans and additional details (as requested in Enclosure 1) will be provided to the Construction, Recreation, and Scenery Plans prior to them being resubmitted for approval.

We appreciate the opportunity to review and comment on these plans and look forward to working with you on the approval of the Construction, Recreation, and Scenery Plans.

If you have any questions or need additional information, please contact Lee Mabey, Team Leader at (208) 557-5784.

Sincerely,

JERRY B. REESE  
Forest Supervisor

Enclosure



**cc: Ms. Magalie R. Salas, Secretary, Federal Energy Regulatory Commission, 888 First Street  
N.E., Washington, DC 20426**

## **Enclosure 1**

### **Comments on Buffalo River Hydroelectric Project (P-1413) Plans**

#### **Condition No. 1 - Approval of Final Design (Article #401)**

*Prior to undertaking activities on National Forest System lands, the Licensee shall obtain written approval from the Forest Service for all final design plans for project components that the Forest Service deems as affecting or potentially affecting National Forest System lands and resources. As part of such prior written approval, the Forest Service may require adjustments in final design plans and facility locations to preclude or mitigate impacts and to assure that the project is compatible with on-the-ground conditions. Should the Forest Service, the Commission, or the Licensee determine that necessary changes are a substantial change, the Licensee shall follow the procedures of Article 2 of the license. Any changes to the license made for any reason pursuant to Article 2 or Article 3 shall be made subject to any new terms and conditions the Secretary of Agriculture may make pursuant to section 4(e) of the Federal Power Act.*

The Forest has received for approval stamped engineering plans for the intake structure and screen, fish ladder, and sheet piling. The fish ladder will be commented on under Article 405 Upstream Fishway Design Drawings and under Condition No. 13 Scenery Management Plan.

We offer the following comments on the Final Design Plans and Specifications:

- The sheet piles placed around the dam structure are supposed to be grouted in place using a tremie. It is important that the tremie be positioned as close to the point of placement as possible to avoid segregation of the grout as it passes through the water. A note in the specs or plans would be appropriate.
- The Erosion Control Plan Section 3.2 indicates that continuous turbidity monitoring will take place during construction of the intake, grouting sheet piles, construction of fish ladder, and removal of coffer dam. There does not appear to be any mention of turbidity monitoring in the plans or specs. There should be a spec indicating the required type of sampling device, max turbidity, and action to take if levels are exceeded. Monitoring of pH levels is recommended during the grouting process (see Erosion Control Plan comments).
- The Erosion Control Plan Sections 3.2.7 and 3.2.8 indicates the use of erosion control devices such as silt fence and straw bales to limit the intrusion of sediment into the river. There is no mention of erosion control in the plans or specs, therefore, it is recommended that the required erosion control devices and placement be included in the plans and specs.
- There is a lack of detail in the construction plans which do not allow a full determination of how changes due to project construction may impact or change



recreational access or affect scenic values. For example the rocky cliff area between the intake and the powerhouse is likely to be modified to provide a safer access to the screen, dam and fish ladder facilities, however, there is no acknowledgement or description of these changes identified. Previously there was mention of a self cleaning mechanism for cleaning the intake screen yet no detail has been given. In addition the construction of the access across the dam is not described. In earlier conversations we discussed the need that rock used to create a flat driveable surface across the top of the dam needed to be similar in color to the existing rock. We also provided information regarding a possible pit source on the Forest where arrangements could be made to secure the needed rock.

- Plans need to show full detail of fish ladder exit or water entrance.

At this time without full detail it is not possible for the Forest to approve these plans or predict the full impacts of this project on other items of concern to the Forest.

**Condition No. 16 - Erosion Control Measures Plan (Article # 302 - Section A of Construction Plans)**

*At least 90-days prior to any ground-disturbing activity, the Licensee shall file with the Commission an Erosion Control Measures Plan that is approved by the Forest Service. The Plan shall include measures to control erosion, stream sedimentation, dust, and soil mass movement. Upon approval, the Licensee shall implement the plan.*

We have the following comments regarding Section A of the Construction Plans:

**General Erosion Control Measures**

3.1 – 1 The Forest requests that the staging area be moved to an approved location southwest of the proposed staging site. The staging area needs specific locations to be identified for spoil storage, a hazardous materials storage area and a concrete cleaning area to avoid unnecessary site impacts. The plan needs to state specifically that the area outside of the staging area will not be used. The edge of the spoil piles needs to be at least 50 feet away from the slope break near the edge of the trees not 50 feet from the river. The hazardous materials need to be located at least 150 feet from the river. A suggestion would be to place it in the southeast corner of the staging area. The staging area needs to have a silt fence or equivalent between it and the river. Restoration of the staging area needs detailing in the Revegetation Plan.

3.1 - 2 It is stated that disturbances beyond permanent roads and parking areas will be revegetated. Treatment of access roads, project roads and parking areas need to be defined and approved in the recreation site plan, Road Use Permit and Special Use Permit. A recreation site plan has not yet been prepared (see comments under Recreation Plan). The Erosion Control Plan should state the specific page and section in the Vegetation Management Plan that addresses how areas will be revegetated.

3.1 – 4 Practices to confine, remove and dispose of excess concrete, cement, and other mortars or bonding agents, including measures for washout facilities needs to be incorporated. A silt fence or equivalent needs to surround the cleaning area. Any waste materials deposited during the cleaning process are to be removed and disposed of properly. Runoff into the river is not permitted. Equipment cleaning needs to be done at least 50 feet away from the slope break near the edge of the trees.

3.1 -5 The Forest requests that decomposable fiber mats are replaced by hydro mulch as hydro mulch is less susceptible to impacts by animals that sometimes get entangled in fiber mats. If straw or straw bales are used they shall be certified weed free. Figure A-3 shows an access road in red to the dam with no explanation of surfacing or how it will be made passable nor does the Vegetation Management Plan provide details concerning its restoration. No detail is given on the concrete truck access, the more native soil that can be left in place the easier site restoration will be.

3.1 -7 The agreement and terms of use for the Riverside Road access road will be covered under the Road Use Permit Condition # 8.

In general sediment and erosion control should include project perimeter controls such as silt fencing, fiber wattle barriers and/or dikes, and ditches, as needed. To the extent practicable, best management practices (BMPs) will be used to contain, control and screen stormwater from entering the river and associated wetlands and/or riparian areas. Inside the perimeter protection, BMPs will be used to limit and control the velocity of water running over and through the construction site to limit the amount of sediment picked up by stormwater. This will include placing check dams or channel liners in drainage channels, covering high use areas with coarse materials that will allow water infiltration but resist erosion and prevent rutting and mud puddles from forming during storms.

#### **Construction of the New Intake Structure**

3.2.1 How and to what degree will the existing rock outcrop in the area by the intake be modified? Incorporate state standards for turbidity as listed in 4.2 if standards are exceeded work should be halted until turbidity can be minimized to acceptable standards.

Water pumped from any in-river excavation or other disturbances should not be placed into any waterbody until it meets Idaho Department of Environmental Quality (IDEQ) water quality standards. The water should be land applied to suitable uplands or stored in settling basins that are large enough to treat all pumped water.

#### **Sealing the Upstream Face of the Dam**

3.2.2 Incorporate state standards for turbidity and pH as listed in 4.2 if standards are exceeded work should be halted until turbidity or pH can be minimized to acceptable standards. Cleaning of concrete and grout implements needs to be done at least 50 feet away from the slope break near the edge of the trees and within the confines of a defined area within the staging site. Waste and residue from the cleaning site must be removed and disposed of properly offsite.

**Pre-Construction Excavation**

3.2.3.1 Include state standards listed in 4.2, if standards are exceeded work should be halted until turbidity or pH can be minimized to acceptable standards. Rock generated by construction activities, such as fishway shelf excavation, may be used for construction purposes. Use of native rocks, such as rocks within the stream channel or dam face, for construction purposes is prohibited. Disturbance to the stream channel should be addressed so that at the end of the project the area looks much like it did at the beginning of the project while insuring the fish ladder functions appropriately.

**Construction of the Fish ladder**

Berms need to be removed and the area left in a manner that the aesthetics are preserved and the fish ladder functions appropriately. Include state standards for turbidity and pH listed in 4.2 of which if standards are exceeded work should be halted until turbidity or pH can meet state standards.

**Staging Area**

3.2.7 Hydro mulch is preferred over fiber mats (such as excelsior rolls with plastic mesh) since the plastic mesh is an entanglement hazard for people and wildlife.

**Dam Access**

3.2.8 Restoration of this area needs to be done in coordination with the site plan. Hydro mulch is preferred over fiber mats.

**Construction Area**

4.1 Specify certified weed free straw will be used as identified in the revegetation section.

**Buffalo River Water Quality**

4.2 The Idaho DEQ standard for pH of 6.5-9.0 needs to be incorporated. The lower monitoring site should be within the Buffalo River proper above the confluence with the Henrys Fork. Field monitoring should be done with field calibrated equipment so if standards are exceeded, construction can be stopped immediately and construction methods can be evaluated and changed to ensure standards are met. Any violations along with changes made to avoid further violations shall be reported within one day of the occurrence to the designated Forest Service Inspector and Troy Saffle of Idaho DEQ. Any resulting fish kills and there extent (although not expected) shall be reported immediately to Idaho Fish and Game and the Forest Service. All state standards need to be met.

It is not sufficient to provide continuous monitoring and then report violations post construction. Field monitoring is recommended during times likely to create problems such as: the initial dewatering and building of cofferdams, sheet pile placement and fish ladder construction. Field monitoring of pH is needed during grouting procedures and cement work. The Forest recommends an additional monitoring site or at least grab samples be taken in the immediate discharge area or point of impact.

Upon incorporation of these comments this plan is considered approved.

**Temporary Emergency Action Plan (Article #304 - Section B of Construction Plans)**

The Forest accepts this plan as written.

**Hazardous Substance Plan (Article #404 – Section C of Construction Plans)****2.1 Hazardous Substances to be on Site**

Please add: fueling of equipment will occur at least 150 feet from any stream waterbody, except for equipment that is permanently stationed (*i.e.*, crane) or onsite pumps that are continuously running. In these instances precautions will be taken so if spilled, fuel will be contained and contamination prevented. Machinery and implements that are used during the project will be in good repair, and free of excessive leaks. When changing hydraulic lines, care will be taken to keep hydraulic fluid from entering any waterbody or soils. It is recommended as a preventative measure that refueling in the staging area be done within a containment cell.

**2.2 Storage and Containment of Hazardous Materials**

Locate the hazardous material storage area in the southeast corner of the staging area at least 150 feet from the stream. Fueling and other chemicals, including small fuel cans, oil and hydraulic fluid containers and concrete chemicals, will be stored at least 150 feet from any stream channel, wetland or waterbody and must be fully contained.

**2.3 Cleanup and Spill Containment**

Spill containment kits, capable of containing the amount of hazardous products capable of being spilt, will be kept at the construction site and used in case of spills. Delete “the contaminated soil will be removed and disposed of in a manner predetermined by the USFS” and replace with “Reporting and Remediation guidelines as required by IDEQ, OSHA, and EPA will be followed.”

Upon incorporation of these comments the Hazardous Substance Plan is considered approved.

**Fishway and Fish Screen Monitoring Plan (Article # 407 – Construction plans Section D)****2.1 Fish Screen Monitoring**

Change first sentence spelling of mortalities to mortalities. In addition to recording species, number and length please add likely cause of death such as: angling, impingement, or avian. Predators in the area are likely to key into mortalities if they are occurring and will likely remove many dead fish before they can be enumerated. Observations should include looking for signs of predators (presence, tracks, scat, etc.) and recording these instances. To minimize possible loss to predators, screens need to be cleaned and checked early in the morning and late in the afternoon.

Only occasional mortalities are expected. If high numbers of mortalities are observed these will be reported immediately. Reporting of mortality data is requested to be given in an electronic format using Microsoft Excel or in a format capable of being imported easily into Excel.

## **2.2 Fish Ladder Monitoring**

Please add a sentence stating that the licensee shall be responsible for the term of the license to ensure proper function of the ladder. The ladder shall be considered properly functioning when it is working as designed with the orifices and auxiliary intake being free of debris with a uniform depth of water over each weir and the entrance submerged to the proper depth with sufficient flows to provide attraction to the entrance. Proper function of the ladder needs to be assured daily and documented on a weekly basis with frequency and type of problems reported.

The fish trap that is to be installed at the exit of the fish ladder needs to conform to the following:

- have a screen or vertical opening of no greater than 5/8"
- be 3-5 feet wide and at least 5 feet long to provide refuge from intake
- be secured to prevent tampering with access provided to IDFG, HFF, and USFS,
- designed to allow processing in the dry
- have a secured opening where fish can pass quickly through when not being captured
- be designed so as to prevent fall back into the fish ladder of trapped fish
- be designed to allow crowding of the fish to ensure efficient capture for processing
- be removable
- designed so flows to the ladder can be shut off for maintenance or inspection

Under licensee responsibilities, please add that modifications to flow patterns below the dam could include minor restructuring of the dam face or approach channel to assure efficient attraction and passage. If sealing of the dam is not successful and a majority of water continues to leak through the dam it may be necessary to alter portions of the channel below the dam to facilitate fish finding the ladder.

As mentioned in NPSI April 15, 2004 letter the ongoing cooperation with HFF concerning the video monitoring is expected to continue. In this same spirit of cooperation it is expected that if agencies or NGO's wish to further investigate questions concerning the effects of the Buffalo River Hydroelectric Project that the licensee would provide assistance through on-site personnel.

## **3.0 Agency Cooperation and Design Modifications**

It is requested that NPSI's April 15, 2004 letter regarding monitoring be incorporated by reference into the monitoring plan.

Upon incorporation of these comments the Fishway and Fish Screen Effectiveness Monitoring, Evaluation, and Maintenance Plan is considered approved.

**Condition No. 15 - Diversion Operation Plan (Article #410 – Construction Plans Section E)**

*Within 1 year of license issuance the Licensee shall file with the Commission a Diversion Operation Plan that is approved by the Forest Service. At a minimum the Plan shall address:*

- *A policy and methodology for passing large woody debris fully intact over the dam as mentioned in license application,*
- *Methods for sediment flushing or removal,*
- *Procedures for flood conditions, methods of erosion prevention in the diversion area and spillway channel,*
- *Trash and debris removal, and*
- *An implementation schedule and maintenance program.*

*Upon Commission approval, the licensee shall implement the plan. The Commission may require changes to the plan to ensure adequate protection of the environmental, scenic and cultural values of the project area.*

Continued equipment access across the dam post construction has not been approved. It would be prudent during construction to incorporate other methods to pass large debris through the spillway such as a winching system.

Fine sediment is currently flushed during periods of high runoff. We agree sediment flushing is not an issue given past operation and stream type.

As part of the maintenance plan ensure that the spillway is kept free of debris that could hinder its effectiveness during high flow events. All debris needs to pass beyond the concrete sill and at an elevation below the concrete apron. The fish ladder is likely to provide a new catch point for debris. This debris may need to be passed on to minimize erosion and conflicts with ladder operation.

Upon incorporation of these comments the Diversion Operation Plan is considered approved.

**Condition No. 7 – Public Safety Plan (Construction Plans Section F)**

*Within 6 months of the license issuance, the Licensee shall file with the Commission a Public Safety Plan approved by the Forest Service. This plan will identify potential hazardous situations, evaluate all project facilities for conformance with the International Building Code, and identify measures necessary to bring project facilities in conformance with the Code, and shall include a schedule for completion of any hazard abatement measures. The plan will also identify how the project complies with FERC's Guidelines for Public Safety at Hydropower Projects (March 1992).*

*The Licensee shall perform daily (or on a schedule otherwise agreed to by the Forest Service) inspections of Licensee's construction operations on National Forest System lands while construction is in progress. The Licensee shall document these inspections (informal writing sufficient) and shall deliver such documentation to the Forest Service on a schedule agreed to by the Forest Service. The inspections must include fire plan compliance, measures to provide for public safety, and environmental protection. The Licensee shall act immediately to correct any items found to need correction.*

This plan is to identify potential hazardous situations, evaluate all project facilities for conformance with the International Building Code, and identify measures necessary to bring project facilities in conformance with the Code, and shall include a schedule for completion of any hazard abatement measures. The plan will also identify how the project complies with FERC's Guidelines for Public Safety at Hydropower Projects (March 1992). The Forest has no knowledge or evidence that this has been completed.

The Forest has the following additional comments:

- Reference within Safety Plan what standards are being followed for example OSHA, Manual of Uniform Traffic Control Devices (USDOT), or local ITD standards.
- Correct spelling in the plan from sight to site.
- It should be stated that the area will be signed and closed to public access during construction at an appropriate turnaround location such as the snowmobile parking area or intersection of road from the Box Canyon Campground. Area closure signing needs to be coordinated with issuance of a Forest Service Closure Order for the site.
- To facilitate public safety and awareness post weekly a construction schedule at the snowmobile parking area and provide a copy to the Island Park Forest Service Office.
- Local residents will need access to summer homes.
- Roads and highways should be signed as appropriate to comply with federal and state highway standards for construction and heavy truck traffic.
- As warranted signs should be posted upstream with appropriate warnings.
- Documentation of inspections and compliance shall be provided twice a week for the project inspector on Monday and Thursday.
- A sign stating there is "no designated take out ahead" needs to be placed near Highway 20 or canoe takeouts need to be allowed at the project site if it is safe to do so.

Until compliance with paragraph one of this condition has been satisfied and the additional comments included this plan is not approved.

**Condition No. 10 - Recreation Plan (Construction Plans Section G)**

*Within 1 year of license issuance the Licensee shall file with the Commission a Recreation Plan that is approved by the Forest Service. The Plan shall, as appropriate, include:*

- *Licensee responsibility for construction, operation and maintenance of recreation facilities and sites on National Forest System lands,*
- *Specific mitigation measures for existing recreation facilities and sites, including compliance with the Americans with Disabilities Act. The plan should include accommodations for the existing parking area and turn-around at the end of Forest Road #80136, Riverside Drive.*
- *Planning for future development or rehabilitation of recreation facilities or sites. Future development or rehabilitation of recreation sites shall include the parking area, the short trail connecting parking area to Box Canyon Trailhead and turn around on the south side of the Buffalo River, access via Forest Road 80136, Riverside Drive. Other future recreation developments should include interpretive signing for hydropower facilities and the Box Canyon trail along the Henry's Fork River. A site plan should be provided at a scale of one inch equals 30, 40 or 50 feet and approved by the Forest Service prior to construction activities.*

In general, the Recreation Plan as stated in section G is an outline of objectives to be included in the site plan that is to be developed. In general we agree with these objectives with some exceptions. The Forests objectives for this site are as follows:

- **Parking Lot** - A gravel surface parking lot with six parking spaces. Located on the southwest side of existing loop on the end of the road. Parking lot will include rock parking barriers that are partially buried. (Precautions will need to be taken to preserve the island that exists in the loop drive on the end of the road prior to construction.)
- **Trailhead Bulletin Board** - A 4 by 6 foot wood bulletin board mounted on treated 4"x4" posts. This would be located next to the parking lot at the Box Canyon Trailhead.
- **Interpretive Trail/Overlook and Signs** - A gravel surface trail from the parking lot to the overlook where 2-3 interpretive signs would be placed that provide interpretation for the hydro project. This trail and overlook would be accessible with a gravel surface of 3/4" minus gravel. The location for this overlook and signing is tentatively identified as an area just below the dam on a naturally occurring shelf above the river.
- **Trail to Dam** - A trail from the parking lot to the dam that is constructed of treated timber steps (if needed) that are backfilled with 3/4" minus gravel. (It may be possible to just gravel the trail depending on the grade of the trail)

No formal consultation has occurred between the licensee and the Forest Service regarding the preparation of the recreation plans. And to our knowledge the site plan



requested in Condition No. 10 has not been prepared by the licensee or approved by the Forest Service.

Until such time that these requirements have been met through a reiterative planning process the Recreation Plan is not approved.

**Condition No. 12 - Heritage Resource Protection (Construction Plans Section H)**

*If during ground-disturbing activities or as a result of project operations, items of potential cultural, historical, archeological, or paleontological value are reported or discovered, or a known deposit of such items is disturbed on National Forest System lands the Licensee shall immediately cease work in the area so affected. The Licensee shall then notify the Forest Service and the Commission and shall not resume work on ground-disturbing activity until it receives written approval from the Forest Service.*

*If it deems it necessary, the Forest Service may require the Licensee to perform recovery, excavation, and preservation of the site and its artifacts at the Licensee's expense through provisions of an Archaeological Resources Protection Act permit issued by the Forest Service.*

Under procedure 2 add the additional contact:                      Caribou-Targhee National Forest  
Ali Abusaidi Forest Archaeologist  
(208)-557-5777

Upon the addition of this contact information the Heritage Resource Protection Plan is considered approved.

**Condition No. 13 - Scenery Management (Construction Plans Section I)**

*Within 1 year of license issuance the Licensee shall file with the Commission a Scenery Management Plan that is approved by the Forest Service. At a minimum, the Plan shall address:*

- *Clearings, spoil piles, and project facilities including diversion structures, penstocks, pipes, ditches, powerhouses, other buildings, transmission line corridors, fish ladders and access roads,*
- *Facility configurations, alignments, building materials, colors, landscaping, and screening,*
- *Proposed mitigation and implementation schedules necessary to bring project facilities into compliance with Targhee National Forest Land and Resource Management Plan direction and provide protection of scenic value, one of the outstanding and remarkable values (ORV's) of the eligible Wild Henry's Fork and Buffalo Rivers. The plan will include measures to protect visual resources during construction which involve ground disturbance and vegetation removal.*

*Mitigation measures shall include, but are not limited to:*

- *Surface materials and colors of the exterior of the powerhouse,*
- *Use of native plant materials to screen facilities from view,*
- *Surface treatment colors and use of native rock on new concrete exposures,*
- *Use of barrier rocks around parking area,*
- *Reshaping and revegetating disturbed areas*

In general this plan is vague and will need more detail before it can be approved. We need to know what is going to be removed or added and how those changes may affect the appearance of the site. It may work well to incorporate this plan with the site plan requested in the Recreation Plan to provide a visual sense of what will occur. The revegetation plan is also a critical component of mitigation that should be integrated.

### **3.1 Intake Structure and Fish Screens**

The plan should indicate what the concrete structure will look like in terms of surface treatment and color. The Forest recommends that the concrete be cast to resemble adjacent rock surfaces (to match the fish ladder structure) in terms of pattern, texture and color. All exposed concrete needs concrete dye mixed throughout. Please provide additional information regarding the height of the proposed mechanical screen cleaner or on its visibility from the Henrys Fork.

### **3.2 Sealing the Dam Face**

The steel sheet piles that are proposed need to be of a type of steel that will readily rust or darken to blend into the surroundings. Please provide details on how the top edge is to be finished.

### **3.3 Re-texturing the Powerhouse**

It is our understanding that Kodiak Black is the color of the existing block powerhouse and that the exposed concrete will be stuccoed in a suitable color that blends the exposed concrete with the block and lava outcrops. In addition if practical, please add shrub, tree plantings or large rocks around the foundation to give a lower profile to the structure as well as hide some of the foundation.

### **3.4 Parking and Staging Area**

A site plan needs to be prepared and approved.

### **3.4 Fish Ladder**

Alternative 1 as depicted in the final fishway design submitted March 11<sup>th</sup> is the preferred design. We have the following additional comments:

1. Match the color of the exposed concrete structure to the natural color of the surrounding basalt rock using dyed concrete for all visible surfaces.
2. Provide *horizontal relief and texture (varied depth of the face of the wall on a large scale to make use of natural light and shadow)* along the exposed vertical concrete surfaces as exists in the natural faces occurring in the area. Drawing number 2 depicts a 3" depth to provide texture in the wall. Depth should be varied across the face of the wall from as little as 3" to as much as 6" to take the most advantage of natural light and shadow to blend into the natural surroundings. Alternative 1 indicates a rough textured surface that is not obvious from drawing 2. The surface should contain as much texture as depicted in alternative 1.
3. Please provide *random* blocking along the vertical concrete surfaces to closely match the natural faces occurring in the area. The natural landscape in the river corridor is a combination of angular, irregular sized rectangular blocks and angular, irregular shaped boulders in a columnar and boulder arrangement. The final exterior of the fishway wall should be a combination of all of these elements: angular, irregular sized rectangular blocks, angular, irregular shaped boulders, a columnar pattern and a boulder like pattern matching the natural pattern behind the ladder.
4. The alternative 1 artist's rendition random relief pattern appears closer together than the 6" to 12" indicated in drawing 2. The artist's rendition is preferable than what appears to be wider spacing in drawing 2.
5. Please provide *random* vertical or edge relief along the top of the horizontal surfaces of the concrete *to break up the visual line*, similar in relief to surrounding natural surfaces. The top of the wall will be 7 1/2" wide according to drawing 2 and still allow for steel grating. This 7" portion of the wall must be randomly broken up horizontally to eliminate the unnaturally straight line. Straight lines and angles, along with random heights and lengths along the top of the wall would be sufficient. Too much symmetry should not be incorporated so it does not appear like the top of a castle wall.
6. The north elevation of the ladder in drawing 2 does not show any of the random relief patterns overlapping the top edge of the wall. Overlapping should occur randomly (so only a portion of the boulder/block is created) to help mimic the natural environment.
7. Native rock removed during construction should be backfilled along the base of the fishway in the river to hide the foundation.
8. The river channel west of the fishway and south of the dam should not appear to be dredged clean of native materials. Native rock and debris should be placed back in the river after construction on the dam is finished.
9. The east side of the ladder needs to "hug" the bank/rock wall as much as possible. Then rock can be placed behind and up to the top of the ladder wall. It will tie the ladder into the existing landscape and look much more natural from all viewing angles.
10. If feasible willow plantings and other shrubs could be planted in between the rocks next to the walls. This would help break up the long flat horizontal surface of the walls.

**Condition No. 17 - Vegetation Management Plan (Construction Plans Section J)**

*Prior to any ground-disturbing activity, the Licensee shall file with the Commission a Vegetation Management Plan that is approved by the Forest Service. At a minimum the Plan shall:*

- *Identify and prioritize (into high, moderate and low priority sites) all inadequately vegetated areas to be re-vegetated or rehabilitated along with an implementation schedule,*
- *List the species to be used along with planting locations, methods, and densities (emphasis shall be given to use of native species),*
- *Identify site preparation, irrigation, mulch, fertilizer, and herbivore protection requirements for plant establishment,*
- *Identify methods for prevention and control of noxious weeds. Treatment of existing infestations of highest priority weeds shall be initiated immediately upon approval of the vegetation management plan by the Commission,*
- *Identify all vegetation control methods the Licensee proposes to use at or along all project facilities,*
- *Explain re-vegetation and vegetation control methods and materials meet objectives for integrated noxious weed management, erosion control, wildlife habitat and other management direction,*
- *Develop a monitoring program to evaluate the effectiveness of re-vegetation, vegetation control, and noxious weed control measures, and*
- *Develop procedures for identification of additional measures that the licensee shall implement if monitoring reveals that re-vegetation and vegetation control is not successful or does not meet intended objectives.*

The Vegetation Management Plan is considered approved upon incorporation of the recommendations.

Section J - 8, Table 3. The Forest suggests removing sheep fescue (*Festuca ovina*) and elk sedge (*Carex geyeri*) from the seeding mix. The available cultivars of sheep fescue are all non-native and elk sedge should come in on its own and would be extremely expensive to purchase as seed - if found available. Increase the percentage of slender wheatgrass to replace sheep fescue and elk sedge.

There should be a section or paragraph detailing the quality and point of origin of seed and seedlings used. All seed needs to be certified weed free.

The number of shrubs to be used seems very extensive for the level of disturbance. Instead we recommend that the site be prepared and seeded the first year and plant the shrubs the next year if needed as determined by monitoring, i.e. are there shrubs and trees sprouting and establishing on their own. To preserve local site adaptations it is recommended that local stock be used or transplanted from approved surrounding locations. Topsoil should only be removed and stockpiled if absolutely necessary for construction. For example revegetation would be more effective for the concrete truck

access for the fishway if topsoil could be left in place and then ripped post construction. This would preserve the native seed bank and allow resprouting of some shrubs.

The Revegetation Plan may need modification through the Scenery Management Plan as there may be areas where the concern is more over visuals than erosion. For example from a visual standpoint we may request fewer and larger shrubs strategically placed.

Ripping should be done to a depth of at least 12 inches or to the depth practical where bedrock occurs.

**Condition No. 18 & 19 BE and BA for Threatened, Endangered, and Sensitive Species (Construction plans Section K)**

**Condition No. 18 - Protection of Threatened and Endangered Species Plan**

*Within 90-days prior to any ground-disturbing activity that may affect a federally listed or proposed species and their critical habitat, the Licensee shall file with the Commission a Threatened, Endangered, and Proposed for Listing Species Plan that is approved by the Forest Service in consultation with appropriate Federal and State agencies. This Plan shall describe how the Licensee shall coordinate, consult, and prepare a biological assessment evaluating the potential impact that any action may have on listed and proposed species and their habitat. At a minimum the plan shall:*

- *Develop procedures to minimize adverse effects to listed species,*
- *Ensure project-related activities shall meet restrictions included in site management plans for listed species,*
- *Develop implementation and effectiveness monitoring of measures taken or employed to reduce effects to listed species,*
- *Identify required elements contained within a biological assessment.*
- *All construction shall be timed to avoid conflicts with sensitive species.*

**Condition No. 19 – Forest Service Sensitive Species Biological Evaluation**

*Within 90-days prior to implementing any activity that may affect a Forest Service sensitive species and their habitat, the Licensee shall file with the Commission a biological evaluation (BE) for Sensitive Species that is approved by the Forest Service. At a minimum incorporate the following mitigation in the BE:*

- *Develop procedures to minimize adverse effects to sensitive species,*
- *Develop implementation and effectiveness monitoring of measures taken or employed to reduce effects to sensitive species,*
- *All construction shall be timed to avoid conflicts with sensitive species.*

The US Fish and Wildlife Service have accepted the determinations for Threatened and Endangered species.

The BE for Forest Service sensitive species is lacking in some details, however, we do not disagree with the determination of effects and we will consider the plan approved upon incorporation of the following changes.

Yellowstone cutthroat is also a sensitive species that occurs within the Henrys Fork and needs to be addressed in the BE. A "May Impact" determination would be appropriate.

Incorporate a summary table that displays the determinations for all sensitive species such as the one below.

Species	No Impact	May Impact Individuals Or Habitat, But Will Not Likely Contribute To A Trend Towards Federal Listing Or Loss Of Viability To The Population Or Species	Will Impact Individuals Or Habitat With A Consequence That The Action May Contribute To A Trend Towards Federal Listing Or Cause A Loss of Viability To The Population Or Species	Beneficial Impact
Yellowstone Cutthroat		X		

### **Fishway Design Comments**

Upon incorporation of the following comments the Forest Service considers the Fishway Design approved.

- The 4-6 inch rock to be placed within the ladder needs to be specified as 4-6" rounded river cobble.
- Drawings need to show water intake detail. There is no indication of how flows into ladder will be controlled or shut off.
- A short Guide wall (5 feet) at the exit is needed to guide fish away from entrainment into spillway or auxiliary flows to eliminate fall back. The fish trap will provide this ability when it is installed but, if it is not to be left permanently a guide wall will need to be constructed.
- Profile two on sheet 10 of 12 appears to be in error as the streambed profile is above the top of the weir.
- There is a risk that the 45 degree angled wall upstream of the fishway entrance will create a back eddy at the entrance disorienting fish and impeding the ability of fish to detect the entrance to the fishway. It is suggested to shorten the length

of wall that extends out into the pool, turn the entrance downstream, or lessen the angle of the wall so it is more parallel with the flows.

- **Auxiliary water entering the last (bottom) pool needs to have a diffuser installed so maximum velocities are 1 foot per second or less so fish are attracted to the weir and orifice not the auxiliary water inflow.**

# THE HENRY'S FORK FOUNDATION, INC.



April 22, 2005

Brent Smith  
Northwest Power Services  
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**Watershed Center**  
604 Main Street  
Ashton, ID 83420



RE: Buffalo River Hydroelectric Project, FERC Project #1413, Articles 405, 406, and construction plans.

Dear Brent:

The Henry's Fork Foundation (HFF) has received your letters of March 11<sup>th</sup>, 16<sup>th</sup>, and 22<sup>nd</sup> of 2005, requesting comments on proposed work identified in the license for FERC Project #1413. These three letters concern: 1) article 405 (proposed fishway design), 2) construction plans, and 3) article 406/Condition No. 14 (proposed fish screen on the powerhouse intake). The HFF offers the following comments for each of these three letters:

## 1) Article 405, fishway design

In general, the design characteristics of the fish ladder, i.e., the length, gradient, and predicted water velocities within, are all very conducive to the objective to pass four inch rainbow trout, at a minimum.

Will the plate on the side spill need to be adjusted manually to regulate flow in the ladder and will the side spill be managed in conjunction with a headgate (no detail is given for the exit of the ladder)? Similarly, no design (i.e., a guidewall) is shown for a means of preventing fish that exit the ladder from falling back over the adjacent spillway. Furthermore, no design is presented for the fish trap to be constructed at the ladder exit. Please incorporate the designs of the above into your diagrams.

The 8" axillary water pipe that is situated along side the wall to the entrance of the fish ladder should likely be extended so that it is even with the end of the wall and the entrance. As currently designed, fish may be attracted to the axillary flow outlet and bypass the ladder entrance. Fish attraction to the axillary flow may be further lessened if a diffuser is installed on the outlet to the axillary flow.

The current sill, water flow, or both, that is downstream of the spillway should be modified so that fish are not attracted to or able to navigate upstream in this direction. Adult rainbow trout currently navigate in this direction to enter the orifice of the existing fishway. The proposed fish



ladder would have no means to pass fish around the dam if they migrate upstream past the proposed ladder entrance. If a blockage or impediments were placed downstream of the spillway then fish would then be more likely to enter the fish ladder rather than spending time and energy trying to navigate towards the spillway.

It is recommended that the notch on the top of the weirs and the orifices through the weirs be located on the same side of the pools within the fish ladder. This should provide for better orientation of the fish moving upstream in addition to providing resting areas on the opposite side of the pools.

It has come to my attention, by way of Lee Mabey's consultation with Brent Mefford (BOR Hydraulic Engineer), that the 45° angle of the ladder entrance may be problematic and that the angle should be lessened. Brent Mefford's suggestions of shortening the length of wall that extends into exit pool and turning the entrance downstream so that it is more parallel with the flow should be incorporated into the design.

## **2) Construction plans**

### **Erosion Control Plan**

#### **3.2.3.2 Construction of the Fish Ladder:**

Daily grab samples will be taken downstream of the fish ladder during construction. Where and when will the grab samples be taken?

#### **4.2 Buffalo River Water Quality:**

A compliance report of water quality monitoring will be furnished to the listed organizations three months after completion of the project. However, no mention is made of providing water quality information to the organizations during the construction phase. It is recommended that this information be made available to the organizations on a weekly basis during the construction.

### **Fishway and fish screen effectiveness monitoring, evaluation, and maintenance plan**

#### **2.1 Fish Screen Monitoring:**

It is recommended that water velocity measurements be taken in front of the fish screen to evaluate if approach velocities meet the 0.8 feet per second for which the screen is designed.

## **2.2 Fish Ladder Monitoring:**

No mention is made on the installation and maintenance of the video recording camera in the fish ladder. This camera (Henry's Fork Foundation equipment) had been used in the existing fish ladder to document upstream fish movement and was maintained (changing video tapes, etc) by the hydroelectric facility personnel. Furthermore, it is noted in Northwest Power Services letter of April 15, 2004 in appendix D-1 of this section of the plan that: "operating personnel....maintain recording equipment...for a period of three years..". Please include this language in the body of the construction plan document.

Data collected from the fish trapping at the ladder will be reviewed after one year. This review is proposed to help guide sampling when it is most efficient, i.e., data collection can be consolidated when the ladder is most used. In addition, it should also be included that data collection, i.e., frequency of trap checking, could potentially be expanded, when the fish ladder is most used.

It is also recommended that upon completion of the fish ladder that flow and velocity measurements are taken at several places within the ladder. This would allow an evaluation of the velocities predicted by the design criteria within holding pools and at orifices.

One of the primary objectives of facilitating better fish passage upstream of the Buffalo River hydroelectric project is to allow fish access to habitat in the Buffalo River, i.e., winter rearing habitat, which may be limiting in the Henry's Fork River. This access should facilitate increased recruitment of age 1-year old rainbow trout to the Henry's Fork River. As such, part of the objective of the dam modifications is to not only enhance upstream fish passage, but also to facilitate downstream passage. Therefore, some consideration should be given to an evaluation of the outmigration of juvenile trout at the Buffalo River hydroelectric facility. Previous attempts by the Henry's Fork Foundation to monitor juvenile outmigration were not very successful because of the difficulty of sampling in the Buffalo River upstream of the hydroelectric facility. In addition, sampling at the dam was inefficient because of the movement of fish into the turbine intake or under the dam. The proposed work on the facility such as: installing a smaller screen on the turbine intake and sealing the face of the dam should provide an enhanced opportunity to determine the outmigration of fish at the dam. This is especially important given that upstream passage should be greatly enhanced with the proposed fish ladder. Given the above, it is recommended that the operating personnel be made available to check an outmigrant trap if this type of sampling is deemed valuable by the reviewing organizations at a later date.

**Recreation Plan**

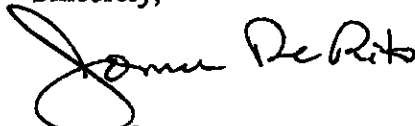
Will the Box Canyon trailhead at the parking area be accessible for hikers during the construction? If so, will a parking area be designated for these users during construction?

**3) Article 406/Condition No. 14, proposed fish screen**

The design of the proposed fish screen (1/4 inch mesh size with a large overall surface area of the screen) appears to address the desire to keep approach velocities around 0.8 feet per second. As noted above, upon completion of the intake structure then velocity measurements should be taken to verify that these screen criteria do result in the desired approach velocities. In addition, detailed records should be kept of any fish mortalities or impingements on the screen.

Thank you for informing the HFF about these license requirements and considering our comments.

Sincerely,

A handwritten signature in black ink, appearing to read "Jim De Rito". The signature is fluid and cursive, with a large loop at the end.

Jim De Rito  
Conservation Director  
Henry's Fork Foundation

cc: Lee Mabey, USFS  
Gary Vecellio, IDFG  
Scott Christensen, GYC



**United States Department of the Interior**  
**FISH AND WILDLIFE SERVICE**

Snake River Fish and Wildlife Office  
1387 S Vinnell Way, Suite 368  
Boise, Idaho 83709



Brent L. Smith  
NW Power Services, Inc.  
P.O. Box 535  
Rigby, Idaho 83442

**MAY 05 2005**

**Subject: Buffalo River Hydroelectric Project, Fremont County, Idaho**  
**-- Comments on Final Fishway Design**  
**FERC #1413-032 OALS #05-0525**

**Dear Mr. Smith:**

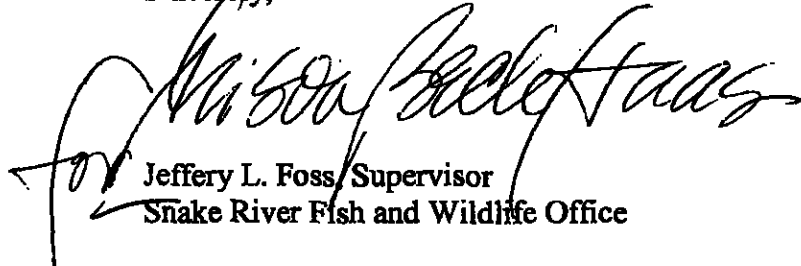
The Fish and Wildlife Service (Service) is writing to provide comments on the final design for the Buffalo River fishway (fishway). We received the final design and request for comments on March 14, 2005. We recognize that these comments will be received after the 30 day comment period you requested in your letter, and we request that they be considered to the extent possible. The Service is providing comments pursuant to our authorities under the Federal Power Act, as amended (16 U.S.C. 791 et seq.) and the Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq.).

The final fishway design proposed by Northwest Power Services, Inc., is intended to meet the requirements of Article 405 of the Subsequent License for the Buffalo River project issued by the Federal Energy Regulatory Commission on November 5, 2004. Based on our review, the final design meets the fish passage criteria previously recommended by the Service, USDA Forest Service, and Idaho Department of Fish and Game. The Service has the following two comments on the final design.

1. A short guide wall (e.g., 5 feet) located at the fishway exit is necessary to guide fish away from the spillway and auxiliary flows to prevent fall back and increase passage effectiveness. If the fish trap used for monitoring is left in place permanently a guide wall would not be necessary.
2. It is possible that the 45-degree angled wall at the entrance to the fishway may create a back eddy when higher flows occur, which could make it difficult for fish to detect the entrance of the fishway. This could be remedied by shortening the length of the wall, or by turning the entrance downstream, thereby lessening the angle and orienting the wall more parallel with the river flow.

The Service appreciates the Applicant's cooperative approach, and looks forward to continued discussions regarding this project. If you have any questions regarding our comments, please contact Kendra Wornack at (208) 685-6955.

Sincerely,

A handwritten signature in black ink, appearing to read "Jeffery L. Foss". The signature is fluid and cursive, with a large initial "J" and "F".

Jeffery L. Foss, Supervisor  
Snake River Fish and Wildlife Office

cc: FWS, Chubbuck (Deb Mignogno)  
CTNF, Idaho Falls (Lee Mabey)  
IDFG, HQ-Boise (Scott Grunder)  
IDFG, Idaho Falls (Gary Vecellio)  
FERC, Washington DC

Document Content(s)

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