



United States
Department of
Agriculture

Forest
Service

Rocky
Mountain
Region

740 Simms Street
Golden, CO 80401
Voice: 303-275-5350
TDD: 303-275-5367

File Code: 2770

Date: August 25, 2010

Ms. Kimberly D. Bose
Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

**Re: FINAL TERMS, CONDITIONS, RECOMMENDATION, AND SUMMARY OF
MANAGEMENT DIRECTION AND INFORMATION for the Spearfish Hydroelectric
Project, P-12775-001, City of Spearfish, SD**

Dear Ms. Bose:

On July 15, 2009, the U.S. Forest Service, pursuant to the Federal Power Act, timely filed preliminary 4(e) terms, conditions, and summary of management direction and information for the Spearfish Hydroelectric Project with the Federal Energy Regulatory Commission (accession number 20090715-5111). By this letter, we are submitting our final terms, conditions, recommendation, and summary of management direction and information for the Spearfish Hydroelectric Project (P-12775-001).

Please contact Jerry Bird, Regional Hydropower Coordinator, at 801-236-3463, if you have questions regarding this filing or require additional information.

Sincerely,

/s/ Antoine L. Dixon (for)

RICK D. CABLES
Regional Forester

Enclosures

cc: Service List



CERTIFICATE OF SERVICE

I, Judy Appelhans, Physical Resources Assistant, for the U.S. Forest Service, hereby certify that on this 25th day of August, 2010, I have served a copy of the forgoing **Final Terms, Conditions, Recommendation, and Summary of Management Direction and Information by the United States Department of Agriculture** electronically per Commission direction, or by First Class U.S. Mail, postage prepaid, upon each person designated on the official Service List compiled by the Secretary for the Spearfish Hydroelectric Project No. P-12775-001, and that the same **Final Terms, Conditions, Recommendation, and Summary of Management Direction and Information** were electronically filed with the Commission this same day.

/s/ Judy Appelhans
Judy Appelhans

Enclosure 1. US Forest Service; Preliminary Terms, Conditions, and Recommendation; P-12775-001

ENCLOSURE 1

US FOREST SERVICE, ROCKY MOUNTAIN REGION

FINAL TERMS, CONDITIONS, AND RECOMENDATION

SPEARFISH HYDROELECTRIC PROJECT, NO. P-12775-001

AUGUST 2010

I. GENERAL

License articles contained in the Federal Energy Regulatory Commission's (Commission) Standard Form L-01 issued by Order No. 540, dated October 31, 1975, cover those general requirements that the Secretary of Agriculture, acting by and through the United States of America, USDA Forest Service (FS), considers necessary for adequate protection and utilization of the land and related resources of the Black Hills National Forest (BKF). Under authority of section 4(e) of the Federal Power Act (FPA, 16 U.S.C. 797(e)), the following terms and conditions are deemed necessary for adequate protection and utilization of BKF lands and resources. These terms and conditions are based on those resources and management requirements enumerated in the Organic Administration Act of 1897 (30 Stat. 11), the Multiple-Use Sustained Yield Act of 1960 (74 Stat. 215), the National Forest Management Act of 1976 (90 Stat. 2949), the Wilderness Act of 1964, the Federal Land Policy and Management Act (90 Stat. 2743), and any other law specifically establishing a unit of the National Forest System (NFS) or prescribing the management thereof (such as the Wild and Scenic Rivers Act), as such laws may be amended from time to time, and as implemented by regulations and direction, including but not limited to FS Manual direction, FS Handbook direction, and approved Land and

Enclosure 1. US Forest Service; Preliminary Terms, Conditions, and Recommendation; P-12775-001

Resource Management Plans prepared in accordance with the National Forest Management Act. Therefore, pursuant to section 4(e) of the FPA, the following conditions covering specific requirements for the Spearfish Hydroelectric Project (Project) for protection and utilization of NFS land shall also be included in any License amendment issued.

Section 10(a)(2)(B) of the Federal Power Act states that the Commission shall consider the recommendations of Federal and State agencies exercising administration over flood control, navigation, irrigation, recreation, cultural and other relevant resources of the State in which the Project is located, and the recommendations (including fish and wildlife recommendations) of Indian tribes affected by the Project. Utilizing this authority the FS is also submitting a recommendation pursuant to the authorities under section 10(a) of the Federal Power Act.

II. STANDARD US FOREST SERVICE CONDITIONS

Condition No. 1—Requirement to Obtain a US Forest Service Special Use

Authorization

If during the term of the License the Commission determines that the Project involves the use of any additional National Forest Service (NFS) lands, outside the current Project boundary, the Licensee shall obtain a special use authorization from the US Forest Service for the occupancy and use of such additional NFS land. The Licensee shall obtain the executed authorization before beginning any ground disturbing activities on NFS land covered by the special use authorization, and shall file that authorization with

Enclosure 1. US Forest Service; Preliminary Terms, Conditions, and Recommendation; P-12775-001

the Commission. The Licensee shall be responsible for the costs of collecting all information directly related to the evaluation of the effects of the proposed occupancy and use that the US Forest Service needs in order to make a decision concerning issuance of a special use authorization.

If during the term of the License the Licensee proposes to perform any Project construction work, the Licensee shall obtain a construction temporary special use authorization before beginning any ground disturbing activities on NFS land. The Licensee shall be responsible for the costs of collecting all information directly related to the evaluation of the effects of the proposed construction that the US Forest Service needs in order to make a decision concerning issuance of a construction temporary special use authorization. The Licensee may commence ground disturbing activities authorized by the License and construction temporary special use authorization no sooner than 60 days following the date the Licensee files the US Forest Service temporary special use authorization with the Commission, unless the Commission prescribes a different commencement schedule. In the event there is a conflict between any provisions of the License and the US Forest Service special use authorization, the special use authorization shall prevail to the extent that the US Forest Service, in consultation with the Commission, deems necessary to protect and utilize NFS resources.

Condition No. 2—US Forest Service Approval of Final Design

Before any construction of the Project occurs on NFS land, the Licensee shall obtain the prior written approval of the US Forest Service for all final design plans for Project

Enclosure 1. US Forest Service; Preliminary Terms, Conditions, and Recommendation; P-12775-001

components that the US Forest Service deems as affecting or potentially affecting NFS resources. The Licensee shall follow the schedules and procedures for design review and approval specified in the US Forest Service construction temporary special use authorization. As part of such prior written approval, the US Forest Service may require adjustments in final plans and facility locations to preclude or mitigate impacts and to assure that the Project is compatible with on-the-ground conditions. Should such necessary adjustments be deemed by the US Forest Service, the Commission, or the Licensee to be a substantial change, the Licensee shall follow 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 of the Secretary of Agriculture made pursuant to section 4(e) of the Federal Power Act.

Condition No. 3—Approval of Changes after Initial Construction

Notwithstanding any License authorization to make changes to the Project, the Licensee shall get written approval from the US Forest Service prior to making any changes in the location of any constructed Project features or facilities, or in the uses of Project lands and waters, or any departure from the requirements of any approved exhibits filed with the Commission. Following receipt of such approval from the US Forest Service, and at least 60 days prior to initiating any such changes or departure, the Licensee shall file a report with the Commission describing the changes, the reasons for the changes, and showing the approval of the US Forest Service for such changes. The Licensee shall file

Enclosure 1. US Forest Service; Preliminary Terms, Conditions, and Recommendation; P-12775-001

an exact copy of this report with the US Forest Service at the same time it is filed with the Commission. This article does not relieve the Licensee from the amendment or other requirements of Article 2 or Article 3 of this License.

Condition No. 4—Consultation

Each year during the 60 days preceding the anniversary date of the License, the Licensee shall consult with the US Forest Service with regard to measures needed to ensure protection and development of the natural resource values of the Project area. Within 60 days following such consultation, the Licensee shall file with the Commission evidence of the consultation with any recommendations made by the US Forest Service. The Commission reserves the right, after notice and opportunity for hearing, to require changes in the Project and its operation that may be necessary to accomplish natural resource protection.

Condition No. 5—Surrender of License or Transfer of Ownership

Prior to any surrender of this License, the Licensee shall restore NFS land to a condition satisfactory to the US Forest Service. At least one year in advance of the proposed application for License surrender, the Licensee shall file with the Commission a restoration plan approved by the US Forest Service. The restoration plan shall identify improvements to be removed, restoration measures, and time frames for implementation and estimated restoration costs. In addition, the Licensee shall pay for an independent audit to assist the US Forest Service in determining whether the Licensee has the financial ability to fund the surrender and restoration work specified in the plan.

Enclosure 1. US Forest Service; Preliminary Terms, Conditions, and Recommendation; P-12775-001

As a condition of any transfer of the License or sale of the Project, the Licensee shall require the proposed transferee to demonstrate, in a manner satisfactory to the US Forest Service, that it has the financial ability to provide for the costs of surrender and restoration of the Project.

Condition No. 6—Modification of US Forest Service Conditions

The US Forest Service reserves the right to modify these conditions, if necessary, to incorporate changes necessitated by new laws and regulations directing changes in management of the area, additional information provided by studies which have not been completed to date, by findings in the Project of new noxious terrestrial or aquatic biota, and to address new listings of Threatened, Endangered, and other Special Status Species in the Project.

III. OTHER US FOREST SERVICE CONDITIONS

Condition No. 7—Erosion Control Measures Plan

At least 60 days prior to any ground disturbing activity, the Licensee shall file with the Commission an Erosion Control Measures Plan that is approved by the US Forest Service. The plan shall be based on actual site conditions (geological, soil, and groundwater) and shall include:

- Descriptions of the actual site conditions
- Detailed descriptions, design drawings and specific topographic locations of all control measures
- Measures to divert runoff away from disturbed land surfaces

Enclosure 1. US Forest Service; Preliminary Terms, Conditions, and Recommendation; P-12775-001

- Measures to collect and filter runoff over disturbed land surfaces
- Measures to revegetate disturbed areas outside of the roadbed
- Seed mixtures and application rates of seed mixes and fertilizers
- A monitoring and maintenance schedule.

The US Forest Service may require changes to the plan to ensure adequate protection of the environmental, scenic, and cultural values of the Project area. This plan must identify requirements for construction, operation, and maintenance measures to meet US Forest Service erosion control objectives and standards. Upon approval, the Licensee shall implement the Plan.

In the event of the need for emergency repairs and use of areas other than Licensed access roads arises, the Licensee shall notify the US Forest Service of its actions as soon as possible, but not more than 48 hours, after such actions have been taken. Licensee shall follow the protocol established for any ground disturbing activities as per an approved grading and restoration plan. Whether or not the US Forest Service is notified or provides consultation, the Licensee shall remain solely responsible for all abatement measures performed.

Condition No. 8—Maintenance of Improvements

The Licensee shall maintain all its improvements and premises on NFS land to standards of repair, orderliness, neatness, sanitation, and safety acceptable to the US Forest Service. The Licensee shall comply with all applicable Federal, State, and local laws and

Enclosure 1. US Forest Service; Preliminary Terms, Conditions, and Recommendation; P-12775-001

regulations, including but not limited to, the Federal Water Pollution Control Act, 33 U.S.C. 1251 et seq., the Resources Conservation and Recovery Act, 42 U.S.C. 6901 et seq., the Comprehensive Environmental Response, Control, and Liability Act, 42 U.S.C. 9601 et seq., and other relevant environmental laws, as well as public health and safety laws and other laws relating to the siting, construction, operation, and maintenance of any facility, improvement, or equipment.

Condition No. 9—Signs

The Licensee shall consult with the US Forest Service prior to erecting signs related to safety issues on NFS land covered by the License. Prior to the Licensee erecting any other signs or advertising devices on NFS land covered by the License, the Licensee must obtain the approval of the US Forest Service as to location, design, size, color, and message. The Licensee shall be responsible for maintaining all Licensee-erected signs to neat and presentable standards.

Condition No. 10—Safety During Project Construction Plan

At least 60 days prior to any ground disturbing activity related to new Project construction on or affecting NFS land, the Licensee shall file with the Commission a Safety During Construction Plan approved by the US Forest Service that identifies potential hazard areas and measures necessary to protect public safety. Areas to consider include construction activities near public roads, trails, and recreation areas and facilities.

Enclosure 1. US Forest Service; Preliminary Terms, Conditions, and Recommendation; P-12775-001

The Licensee shall perform daily (or on a schedule otherwise agreed to by the US Forest Service in writing) inspections of Licensee's construction operations on NFS land while construction is in progress.

The Licensee shall document these inspections (informal writing sufficient) and shall deliver such documentation to the US Forest Service on a schedule agreed to by the US Forest Service. The inspections must specifically include fire plan compliance, public safety, and environmental protection. The Licensee shall act immediately to correct any items found to need correction.

Condition No. 11—Indemnification, Risks and Hazards, and Damage to Lands, Property, and Interests of the United States

The Licensee shall indemnify, defend, and hold the United States harmless for any costs, damages, claims, liabilities, and judgments arising from past, present, and future acts or omissions of the Licensee in connection with the use and/or occupancy authorized by this License. This indemnification and hold harmless provision applies solely to any negligent acts and omissions of the Licensee or the Licensee's heirs, assigns, agents, employees, affiliates, subsidiaries, fiduciaries, contractors, or lessees in connection with the use and/or occupancy authorized by this License which result in: (1) violations of any laws and regulations which are now or which may in the future become applicable, and including, but not limited to environmental laws, such as the Comprehensive Environmental Response Compensation and Liability Act, Resource Conservation and Recovery Act, Oil Pollution Act, Clean Water Act, Clean Air Act; (2) judgments, claims,

Enclosure 1. US Forest Service; Preliminary Terms, Conditions, and Recommendation; P-12775-001

demands, penalties, or fees assessed against the United States; (3) costs, expenses, and damages incurred by the United States; or (4) the release or threatened release of any solid waste, hazardous substances, pollutant, contaminant, or oil in any form in the environment. The provisions of this condition do not apply to any damages, judgments, claims, or demands arising out of the negligence, recklessness, or willful misconduct of the United States or other third parties or to damages, judgments, claims, or demands arising out of any activity initially occurring outside the Project boundary or outside NFS land. The Licensee's liability hereunder shall be limited to reasonable damages, costs, claims, and judgments.

The Licensee is responsible for periodically inspecting (in accordance with good utility practice) its Project site, right-of-way, and immediate adjoining area for dangerous trees, hanging limbs, and other evidence of hazardous conditions. Licensee shall abate those conditions, except those caused by third parties not related to the occupancy and use authorized by the License, after securing permission from the US Forest Service, except in an emergency where there is an imminent risk of death or injury to the public or facilities, in which case the Licensee shall notify the US Forest Service of the action as soon as possible.

The extent of the Licensee's liability for fire and other damages to NFS land shall be determined in accordance with standard L-Form Articles 22 and 24 of this License and the liability standard shall be determined in Federal Court by using applicable South Dakota State Law.

Enclosure 1. US Forest Service; Preliminary Terms, Conditions, and Recommendation; P-12775-001

Condition No. 12—Road Use by Government

The United States shall have unrestricted use of any road constructed within the Project area for all purposes deemed necessary and desirable in connection with the protection, administration, management, and utilization of NFS land or resources and shall have the right to extend rights and privileges of use of such road to states and local subdivisions thereof, as well as to other users, including members of the public, except contractors, agents, and employees of the Licensee; provided that the agency having jurisdiction shall control such use as to not unreasonably interfere with the safety or security uses, or cause the Licensee to bear a share of the costs of maintenance greater than the Licensee's use of the road.

Condition No. 13—Road Use

The Licensee shall confine all Project vehicles, including but not limited to, administrative and transportation vehicles, and construction and inspection equipment, to roads or specifically designed access routes. The US Forest Service reserves the right to close any and all such routes where damage is occurring to the soil or vegetation, or, if requested by Licensee, to require reconstruction/construction by the Licensee to the extent needed to accommodate the Licensee's use.

Condition No. 14—Access

The US Forest Service reserves the right to use or permit others to use any part of the licensed area on NFS land for any purpose, provided such use does not interfere with the rights and privileges authorized by this License or the Federal Power Act.

Enclosure 1. US Forest Service; Preliminary Terms, Conditions, and Recommendation; P-12775-001

Condition No. 15—Invasive Plant, Noxious Weed and Aquatic Nuisance Species Management Plan

Within six months from the date of the issuance of a new License for the Project, the Licensee shall file with the Commission an Invasive Plant, Noxious Weed and Aquatic Nuisance Species Management Plan that is approved by the US Forest Service. This Plan is intended to reduce the infestation and spread of invasive plants, noxious weeds and aquatic nuisance species. At a minimum the Plan shall include the following requirements to be implemented by the Licensee:

- Identify methods for prevention and control of noxious weeds within the Project area. Treatment of existing infestations of highest priority weeds shall be initiated immediately upon approval of the plan by the Commission.
- Clean all construction equipment thoroughly before entering areas addressed by the Plan to reasonably ensure that seeds of invasive plants and noxious weeds are not introduced.
- Restrict travel to established roads and trails when possible, and avoid entering areas with existing populations of invasive plants or noxious weeds. If entering such areas is required, conduct work in uninfested areas first when possible.
- Minimize ground disturbance during Project operations and maintenance (O&M). When ground disturbance is required, dispose of any resulting spoils on-site, grading to match local contours and reseeding with a mix of native species approved by the US Forest Service. If fill is required for O&M activities, use fill collected onsite whenever possible, and reseed the disturbed area as described above. All seeding should be conducted immediately following disturbance.

Enclosure 1. US Forest Service; Preliminary Terms, Conditions, and Recommendation; P-12775-001

Seeding needs to be done in conjunction with proper seedbed preparation such as harrowing or tilling the soil surface.

- Use certified weed-free straw or rice straw for all construction, erosion control, or restoration needs.
- Develop a monitoring program to evaluate the effectiveness of re-vegetation, vegetation control, and invasive plant and noxious weed control measures.

Provide specific methods for monitoring and evaluation. At a minimum, surveys shall be conducted every three years.

- 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.
- Equipment used for all activities conducted within the stream channel or reservoir, such as but not limited to stream flow measurement or the collection and transport of fish, shall be disinfected, cleaned or adequately dried to eliminate the potential introduction or spread of aquatic nuisance species, if this equipment has been used outside of the Spearfish Creek drainage.

Condition No. 16—Protection of Threatened, Endangered, Proposed for Listing, Sensitive Species and Species of Local Concern Plan

At least 60 days prior to any activity that may affect a Federally listed or proposed species and their critical habitat, or US Forest Service sensitive species or Species of Local Concern and their habitat on NFS land, the Licensee shall file with the Commission a Threatened, Endangered, Proposed for Listing, Sensitive Species, and Species of Local

Enclosure 1. US Forest Service; Preliminary Terms, Conditions, and Recommendation; P-12775-001

Concern Plan that is approved by the US 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 and evaluation evaluating the potential impact that any action may have on listed, proposed, sensitive species, or Species of Local Concern and their habitat. The Licensee shall implement all mitigation measures and Reasonable and Prudent Alternatives required in any Biological Opinion rendered by the US Fish and Wildlife Service or other regulatory agency.

At a minimum the Plan shall:

- Develop procedures to avoid/minimize adverse effects to listed species and other Special Status Species
- Ensure that Project-related activities shall meet restrictions included in site management plans for listed species and other Special Status Species
- Develop implementation and effectiveness monitoring of measures taken or employed to reduce effects to listed species and other Special Status Species
- Update the Plan as new information is obtained in consultation with the agencies and submitting the updated Plan to the Commission for approval
- Identify required elements contained within a biological assessment and evaluation

Enclosure 1. US Forest Service; Preliminary Terms, Conditions, and Recommendation; P-12775-001

Condition No. 17—Spearfish Hydroelectric Project Minimum Flow Release

Schedule

- (a) The Licensee shall maintain an instantaneous minimum flow release into the bypassed reach of Spearfish Creek in accordance with the following schedule in Table 1:

Table 1. Spearfish Hydroelectric Project Minimum Flow Release Schedule

Season	Average Powerhouse Flow	Minimum Flow Release
Oct. 1 through Apr. 30	n/a	6 cfs
May 1 through Sep. 30	> 40 cfs	4 cfs
	> 35 cfs, but ≤ 40 cfs	3 cfs
	> 30 cfs, but ≤ 35 cfs	2 cfs
	≤ 30 cfs	1 cfs

For purposes of Table 1, the column “Minimum Flow Release” means the required instantaneous minimum flow release to be provided and measured at Maurice Dam via a bypass release structure designed, approved, and constructed in accordance with paragraph (b), below.

Also for purposes of Table 1, the column “Average Powerhouse Flow” means the average of each daily average rate of flows at the Project powerhouse generating units over each seven-day period (Monday through Sunday), as measured and calculated by the Licensee, from May 1 through September 30 each year.

Enclosure 1. US Forest Service; Preliminary Terms, Conditions, and Recommendation; P-12775-001

During the May 1 through September 30 time period each year, the Minimum Flow Release shall be determined and adjusted on a weekly basis (beginning each Monday) according to the Average Powerhouse Flow in Table 1. Reductions in the Minimum Flow Release shall only occur on the Monday after the Average Powerhouse Flow for the immediate previous seven day period has dropped to the next lower threshold value in Table 1. Once the Minimum Flow Release is reduced, it shall remain at the reduced level or lower, as per the schedule in Table 1, until September 30. Beginning October 1 each year, the Minimum Flow Release shall be raised to 6 cfs, regardless of the Average Powerhouse Flow.

- (b) Within six months of the effective date of the License, the Licensee shall submit for Commission approval a Minimum Flow Release structure plan that shall include a design for a bypass release structure capable of providing the Minimum Flow Releases prescribed in Table 1, Condition 17(a). The design plan shall be developed in consultation with and approved by the South Dakota Department of Environment and Natural Resources (“DENR”) and the US Forest Service (“USFS”). The Licensee shall allow a minimum of 30 days for DENR and USFS to review the plan before it is filed with the Commission. The Commission reserves the right to require changes to the plan.
- (c) Following the approval of the design plan by the Commission, DENR, and USFS as set forth in paragraph (b), above, the Licensee shall construct the bypass release structure as approved by the Commission. The Licensee shall exercise

Enclosure 1. US Forest Service; Preliminary Terms, Conditions, and Recommendation; P-12775-001

best efforts, accounting for public safety and seasonal limitations, to complete construction and operation of the bypass release structure within six months after obtaining all approvals of the design plan. The Licensee's obligations to maintain minimum flows under this Condition shall commence upon final construction, inspection, and testing of the bypass release structure at Maurice Dam.

- (d) The Minimum Flow Release requirements under this Condition may be temporarily modified or suspended if required by operating emergencies beyond the control of the Licensee, and for short periods upon mutual agreement between the Licensee, DENR, and USFS. If the flow is so modified, the Licensee shall notify the USFS and DENR as soon as practicable, but no later than 2 business days after each such incident, and shall notify the Commission within 10 days after each such incident, and shall provide the reason for the modified flow. For purposes of this paragraph (d), operating emergencies include freezing conditions in Spearfish Creek that prevent the City from providing the full Minimum Flow Release at Maurice Dam. In the event of such freezing conditions, the Licensee shall take all reasonable and prudent measures, accounting for public and personnel safety and applicable water quality and other environmental regulatory requirements, to de-ice the system and reinstate flows.

Condition No. 18—Minimum Flow Release and Instream Flow Measurement Plan

Within six months of the effective date of the License, the Licensee shall submit for Commission approval plans for the installation, maintenance, and operation of

Enclosure 1. US Forest Service; Preliminary Terms, Conditions, and Recommendation; P-12775-001

a bypass release measurement device with continuous recording capability at the bypass release structure at Maurice Dam to demonstrate compliance with the Minimum Flow Release requirements in Condition 17. The plan shall also include provisions for continuous monitoring and recording of flows at the Project powerhouse generating units, which will be used to determine the Average Powerhouse Flow values in Table 1 of Condition 17. The plan shall also include methods for calculating the seven-day Average Powerhouse Flow in Table 1 of Condition 17. The plan shall be developed in consultation with and approved by the USFS and DENR prior to approval of the measurement plan by the Commission. The Licensee shall allow a minimum of 30 days for DENR and the USFS to review the plan before it is filed with the Commission. The Commission reserves the right to require changes to the plan.

IV. FPA SECTION 10(a) RECOMMENDATIONS

Recommendation No. 1 – Install artificial nest boxes for the American Dipper at suitable sites

The USFS recommends that the City, in cooperation with the USFS and other partners, increase the number of suitable nest sites for the American Dipper (*Cinclus mexicanus*) in the Project area, emphasizing the placement of artificial nest boxes at bridges or other suitable sites in the Project area, particularly at the Maurice Dam and Intake and the reach of Spearfish Creek through the City of Spearfish.

Enclosure 2. US Forest Service; Summary of Management Direction and Information; P-12775-001

ENCLOSURE 2

US FOREST SERVICE, ROCKY MOUNTAIN REGION

SUMMARY OF MANAGEMENT DIRECTION AND INFORMATION

CONSIDERED IN THE DEVELOPMENT OF FINAL TERMS,

CONDITIONS, AND RECOMMENDATION

SPEARFISH HYDROELECTRIC PROJECT, NO. P-12775-001

AUGUST 2010

The Final Terms, Conditions, and Recommendation provided by the US Forest Service (USFS) for the Spearfish Hydroelectric Project (Project), FERC No. 12775-001 are submitted pursuant to the authority set forth in sections 4(e) and 10(a) of the Federal Power Act (FPA).

Section 4(e) of the FPA provides: “That licenses shall be issued within any reservation only after a finding by the Commission that the License will not interfere or be inconsistent with the purpose for which such reservation was created or acquired, and shall be subject to and contain such conditions as the Secretary of the Department under whose supervision such reservation falls shall deem necessary for the adequate protection and utilization of such reservations.”

Section 10(a)(2)(B) of the FPA states that the Commission shall consider “the recommendations of Federal and State agencies exercising administration over flood

Enclosure 2. US Forest Service; Summary of Management Direction and Information; P-12775-001

control, navigation, irrigation, recreation, cultural, and other relevant resources of the state in which the Project is located, and the recommendations (including fish and wildlife recommendations) of Indian tribes affected by the Project.” Utilizing this authority, the USFS is also submitting a recommendation pursuant to the authorities under section 10(a) of the FPA.

The USFS Final Terms, Conditions, and Recommendation are prescribed to ensure that continued operations of the Project are consistent with the *Black Hills National Forest Land and Resource Management Plan (USDA, 1997; as amended, 2006)*, hereafter “Forest Plan.” The Forest Plan is required by the National Forest Management Act of 1976 (90 Stat. 2949) and the Forest and Rangeland Renewable Resources Planning Act of 1974 (88 Stat. 476; 16 USC 1601-1610).

The National Forest Management Act amends the Forest and Rangeland Renewable Resources Planning Act to include, in pertinent part:

- (i) Resource plans and permits, contracts, and other instruments for the use and occupancy of National Forest System (NFS) land shall be consistent with the land management plans. That resource plans and permits, contracts, and other such instruments currently in existence shall be revised as soon as practicable to be made consistent with such plans. When land management plans are revised, resource plans and permits, contracts, and other instruments, when necessary, shall be revised as soon as practicable. Any revision in present or future permits, contracts, and

Enclosure 2. US Forest Service; Summary of Management Direction and Information; P-12775-001

other instruments made pursuant to this section shall be subject to valid existing rights.

The Forest Plan guides all natural resource management activities and establishes standards and guidelines for the Black Hills National Forest (BKF). The Forest Plan embodies the provisions and the implementing regulations of the National Forest Management Act of 1976 and other guiding documents.

Other legal direction relating to USFS activities includes, but is not limited to:

- Organic Administration Act 1897 (30 Stat.11) - Establishes the designation and purposes of National Forests.
- Multiple-Use Sustained Yield Act of 1960 (P. L. 86-517) - Directs the USFS to develop and administer the renewable surface resources of the National Forests.
- National Environmental Policy Act of 1969 (P. L. 91-190) - Establishes national policy for the protection and enhancement of the environment.
- Endangered Species Act of 1973 (P. L. 93-205) - Directs the USFS to conserve endangered and threatened species and to use its authorities in furtherance of the purposes of the Act.
- Federal Land Policy and Management Act of 1976 (P. L. 94-579) - Directs the USFS to manage public lands on the basis of multiple uses.
- Wilderness Act of 1964 (P.L. 88-577) - Gives the USFS responsibility for determining Project acceptability in relation to Wilderness.

Enclosure 2. US Forest Service; Summary of Management Direction and Information; P-12775-001

- Wild and Scenic Rivers Act (P. L. 90-542) - Gives the USFS responsibility for determining Project acceptability in relation to Wild and Scenic Rivers.

Rationale for Section 4(e) Conditions

The following section describes the rationale and specific direction to support each section 4(e) condition. The USFS has developed 4(e) License conditions to be applied to this licensing Project (refer to USFS Handbook (FSH) 2709.15 and 52.6). Conditions Nos. 1- 18 and Recommendation No. 1 are included in order to meet the applicable laws and regulations that are germane to this Project.

Condition No. 1—Requirement to Obtain a US Forest Service Special Use

Authorization

Rationale for USFS Condition No. 1

Applicants for Federal Energy Regulatory Commission (FERC) preliminary permits, exemptions, or licenses must also apply to the USFS for authorization when projects involve NFS land (refer to FSH 2709.15, ch.50, and FSH 2709.11).

Special use authorizations shall authorize the occupancy and use of NFS land and shall include those conditions and requirements that are not included in the License, but which are necessary for comprehensive and compatible use of land, water, and energy resources consistent with the purposes for which the National Forests were created or acquired (refer to FSH 2771.2).

Enclosure 2. US Forest Service; Summary of Management Direction and Information; P-12775-001

Condition No. 2—US Forest Service Approval of Final Design

Condition No. 3—Approval of Changes after Initial Construction

Condition No. 4—Consultation

Condition No. 5—Surrender of License or Transfer of Ownership

Condition No. 6—Modification of Forest Service Conditions

Rationale for USFS Conditions Nos. 2 - 6

Standard provisions of Conditions 2, 3, 4, 5, and 6, although not responding to specific effects of hydropower facilities, are reasonable and necessary to allow for any changes in the Project; compliance with applicable laws and regulations; agency review of any Project ground-disturbing activities; or modifications to any as-licensed facilities on NFS land. All requirements necessary to ensure protection of NFS land must be included in the License.

Condition No. 7—Erosion Control Measures Plan

Rationale for USFS Condition No. 7

Existing Situation and Justification

Project operations have resulted in minimal ground disturbance in the past. The City's proposal to abandon the access manhole to the aqueduct may result in some limited ground disturbance. Inclusion of this condition in the License will avoid the permanent impairment of the productive capability of the land.

Enclosure 2. US Forest Service; Summary of Management Direction and Information; P-12775-001

Legal and Administrative Policy Direction

Organic Administration Act of June 4, 1897, as amended (16 U.S.C. 475). This Act contains the initial, basic authority of watershed management on NFS land. The purpose for the establishment of National Forests, as stated in the Act, includes securing favorable conditions of water flows. Favorable conditions of water flows include preventing watershed damage caused by erosion.

Watershed Protection and Flood Prevention Act of August 4, 1954, as amended (68 Stat. 666; P.L. 83-566; 16 U.S.C. 1001). This Act authorizes the Secretary of Agriculture to cooperate with the States and their political subdivisions and local public agencies in preventing watershed damages from erosion, floodwater, and sediment, and in furthering the conservation, development, utilization, and disposal of water. The Act also authorizes the Secretary to cooperate with other Federal, State, and local agencies in making investigations and surveys of the watersheds of rivers and other waterways as a basis for planning and developing coordinated programs, and to pursue additional works of improvement on the 11 watersheds authorized by the Flood Control Act of December 22, 1944, as amended.

Forest and Rangeland Renewable Resources Planning Act (RPA) of 1974, as amended (88 Stat. 476; 16 U.S.C. 1601-1614). The RPA requires an assessment of present and potential productivity of the land. The Act requires a program based on an assessment that is in full accord with the concepts of multiple use and sustained yield, including an evaluation of the balance between economic and environmental quality. The Act

Enclosure 2. US Forest Service; Summary of Management Direction and Information; P-12775-001

contains many references to suitability and capability of specific land areas, to maintenance of productivity of the land, and to the need to protect and, where appropriate, improve the quality of the soil and water resources. The Act specifies that substantial and permanent impairment of productivity must be avoided and has far-reaching implications for watershed management (including monitoring, inventories, condition and trends, and support services) on the National Forests.

National Forest Management Act of 1976 (16 U.S.C. 1600-1602, 1604, 1606, 1608-1614). This Act substantially amends the RPA of 1974. The Act strengthens the references pertaining to suitability and compatibility of land areas, stresses the maintenance of productivity and the need to protect and improve the quality of soil and water resources, and avoids permanent impairment of productive capability of the land.

Condition No. 8—Maintenance of Improvements

Condition No. 9—Signs

Rationale for USFS Conditions Nos. 8-9

Existing Situation and Justification

The Maurice Dam and Intake are located within the Spearfish Canyon Management Area 4.2A. This area is managed for recreational opportunities in roaded settings that appear natural. Visual resources are managed so that management activities maintain or improve the quality of recreation opportunities. Management activities are likely to be less

Enclosure 2. US Forest Service; Summary of Management Direction and Information; P-12775-001

evident, of short duration and be more natural in appearance than in many other areas of the Forest.

Visual compliance with the Forest Plan is important not only for design, implementation, and rehabilitation, but also related to Project operations on a daily basis. An operation and maintenance (O&M) plan is vital for agreement among the parties involved with the use and management of NFS land. An O&M plan is standard practice for all authorizations issued on NFS land.

Forest Plan

Forest-Wide Direction – Page III-17

Goal 4: provide for scenic quality, a range of recreational opportunities, and protection of heritage resources in response to the needs of the Black Hills NF visitors and local communities.

Management Area 4.2A. Spearfish Canyon - Page III-54

The scenery management goal is to emphasize visually appealing landscapes such as vista openings, rock outcroppings, and diversity of vegetation.

Enclosure 2. US Forest Service; Summary of Management Direction and Information; P-12775-001

Condition No. 10—Safety During Project Construction Plan

**Condition No. 11—Indemnification, Risks and Hazards, and Damage to Lands,
Property, and Interests of the United States**

Condition No. 12—Road Use by Government

Condition No. 13—Road Use

Condition No. 14—Access

Rationale for USFS Conditions Nos. 10 – 14

These conditions include requirements that serve to address the statutory and administrative responsibilities of the Forest Plan. They address USFS concerns related to: maintenance of the Project improvements; compliance with Federal, State, County, and municipal laws and regulations; protection of Federal property; indemnification; water pollution; risks and hazards; access; road use; and hazardous materials. The requirements included in these conditions are necessary to ensure protection of NFS land and must be included in the License. The FERC is not responsible for administering NFS land, and cannot be expected to condition the Project License relative to the Forest Plan and the numerous laws, regulations, and agency policies that pertain to this NFS land. Including these conditions would ensure that Project operations are consistent with management direction for the Black Hills NF.

Enclosure 2. US Forest Service; Summary of Management Direction and Information; P-12775-001

Condition No. 15—Invasive Plant, Noxious Weed and Aquatic Nuisance Species Management Plan

Rationale for USFS Condition No. 15

Existing Situation and Justification

Operation and maintenance (O&M) of the Spearfish Hydroelectric Project results in some limited and infrequent ground disturbance. Dredging of the impoundment at Maurice Dam is an example. At times it may be necessary to use equipment not located on site to carryout these O&M activities. This equipment and these O&M activities have the potential to serve as vectors and pathways for the introduction of both terrestrial and aquatic invasive species and noxious weeds. The USFS believes preventive measures to avoid or minimize the potential introduction or spread of invasive species or noxious weeds is the desired and appropriate course of action.

Legal and Administrative Policy Direction

Federal Noxious Weed Act, P.L. 93-629, Sec 2, Jan 3, 1975, 88 Stat.2148, and as amended P.L. 101-624, title XIV, Sec 1453, Nov, 8, 1990, 104 Stat. 3611, provides for management of undesirable plants on Federal lands.

Bankhead-Jones Farm Tenant Act of 1937 (50 Stat. 525, as amended; 7 U.S.C. 1010-1012), that authorizes and directs the Secretary to "...develop a program of land conservation and land utilization, in order thereby to correct maladjustments in land use, and thus assist in controlling soil erosion, reforestation, preserving natural resources,..."

Enclosure 2. US Forest Service; Summary of Management Direction and Information; P-12775-001

Anderson-Mansfield Reforestation and Revegetation Act of 1949 (63 Stat. 762; 16 U.S.C. 581j-581k), that states "...it is the declared policy of the Congress to accelerate and provide a continuing basis for the needed reforestation and revegetation of national forest lands and other lands under administration and control of the Forest Service of the Department of Agriculture in order to obtain the benefits hereinbefore enumerated..."

USFS Manual

- 2080.03 – Noxious Weed Management.
 - Establishes the policy that development and implementation of a noxious weed management program at each level of the Forest Service must be done in consultation with Federal, State, and local governments and the public. It also links noxious weed program management and activities to the goals and objectives of the Forest Plan.
- 2081.03 – Noxious Weed Management.
 - Provides a policy requiring projects with a moderate to high risk of noxious weed infestations to include identified noxious weed control measures in the Project decision document.

Enclosure 2. US Forest Service; Summary of Management Direction and Information; P-12775-001

**Condition No. 16—Protection of Threatened, Endangered, Proposed for Listing,
Sensitive Species and Species of Local Concern Plan**

Rationale for USFS Condition No. 16

Endangered Species Act of 1973 (P. L. 93-205) - Directs the USFS to conserve endangered and threatened species and to use its authorities in furtherance of the purposes of the Act.

Multiple-Use, Sustained-Yield Act of June 12, 1960 (74 Stat. 215, as amended; 16 U.S.C. 528-531) recognizes and clarifies USFS authority and responsibility to manage wildlife and fish.

National Forest Management Act of 1976 (16 U.S.C. 1600-1602, 1604, 1606, 1608-1614). This Act substantially amends the RPA of 1974. The Act strengthens the references pertaining to suitability and compatibility of land areas, stresses the maintenance of productivity and the need to protect and improve the quality of soil and water resources, and avoids permanent impairment of productive capability of the land.

USFS Manual

- 2670.22 – Objectives. Sensitive Species.
 - Develop and implement management practices to ensure that species do not become threatened or endangered.

Enclosure 2. US Forest Service; Summary of Management Direction and Information; P-12775-001

- Maintain viable populations of all native and desired nonnative wildlife, fish, and plant species in habitats distributed throughout their geographic range on National Forest System land.
- Develop and implement management objectives for populations and/or habitat of sensitive species.
- 2670.32 – Policy. Sensitive Species.
 - Assist States in achieving their goals for conservation of endemic species.
 - As part of the National Environmental Policy Act process, review programs and activities, through a biological evaluation, to determine their potential effect on sensitive species.
 - Establish management objectives in cooperation with the States when projects on National Forest System land may have a significant effect on sensitive species population numbers or distributions. Establish objectives for Federal candidate species, in cooperation with the FWS or NMFS and the States.
 - Avoid or minimize impacts to species whose viability has been identified as a concern.
 - If impacts cannot be avoided, analyze the significance of potential adverse effects on the population or its habitat within the area of concern and on the species as a whole. (The line officer, with Project approval authority, makes the decision to allow or disallow impact, but the decision must not result in loss of species viability or create significant trends toward Federal listing.)

Enclosure 2. US Forest Service; Summary of Management Direction and Information; P-12775-001

- Establish management objectives in cooperation with the States when projects on NFS land may have a significant effect on sensitive species population numbers or distributions. Establish objectives for Federal candidate species, in cooperation with the U.S. Fish and Wildlife Service (FWS) or National Marine Fisheries Service (NMFS) and the States.
- 2672.1 - Sensitive Species Management.
 - Sensitive species of native plant and animal species must receive special management emphasis to ensure their viability and to preclude trends toward endangerment that would result in the need for Federal listing.
 - There must be no impacts to sensitive species without an analysis of the significance of adverse effects on the populations, its habitat, and on the viability of the species as a whole. It is essential to establish population viability objectives when making decisions that would significantly reduce sensitive species numbers.
- 2672.4 - Biological Evaluations.
 - Review all US Forest Service planned, funded, executed, or permitted programs and activities for possible effects on endangered, threatened, proposed, or sensitive species. The biological evaluation is the means of conducting the review and of documenting the findings.
- 2622.01 – Species of Local Concern (Black Hills Manual Supplement).
 - Consider Species of Local Concern during Project design and evaluate effects to the species from alternatives considered through the National Environmental Policy Act (NEPA) process.

Enclosure 2. US Forest Service; Summary of Management Direction and Information; P-12775-001

Forest Plan

The Forest Plan establishes direction for special status species:

Objective 220 – Conserve or enhance habitat for federally listed threatened, endangered and proposed species.

Objective 221 – Conserve or enhance habitat for R2 sensitive species and species of local concern (SOLC).

Standard 3115. A R2 sensitive species or species of local concern located after contract or permit issuance will be appropriately managed by active coordination between permittee, contractor or purchaser, Forest Service line officer, Project administrator, and biologist and/or botanist. Solutions need to be based on the circumstances of each new discovery and must consider the species need, contractual obligations and costs, and mitigation measures available at the time of discovery.

Standard 3106. Riparian areas or wetlands where populations of sensitive species are located are to be avoided during ground disturbing activities. Use one or more of the following (or other mitigation measure) tied to the site-specific conditions for disturbances adjacent to known occurrences:

- a. Avoid removing riparian or wetland vegetation; filling or dredging the riparian area or wetland; diverting stream flow from the current channel.

Enclosure 2. US Forest Service; Summary of Management Direction and Information; P-12775-001

Condition No. 17—Spearfish Hydroelectric Project Minimum Flow Release

Schedule

Rationale for USFS Condition No. 17

Existing Situation

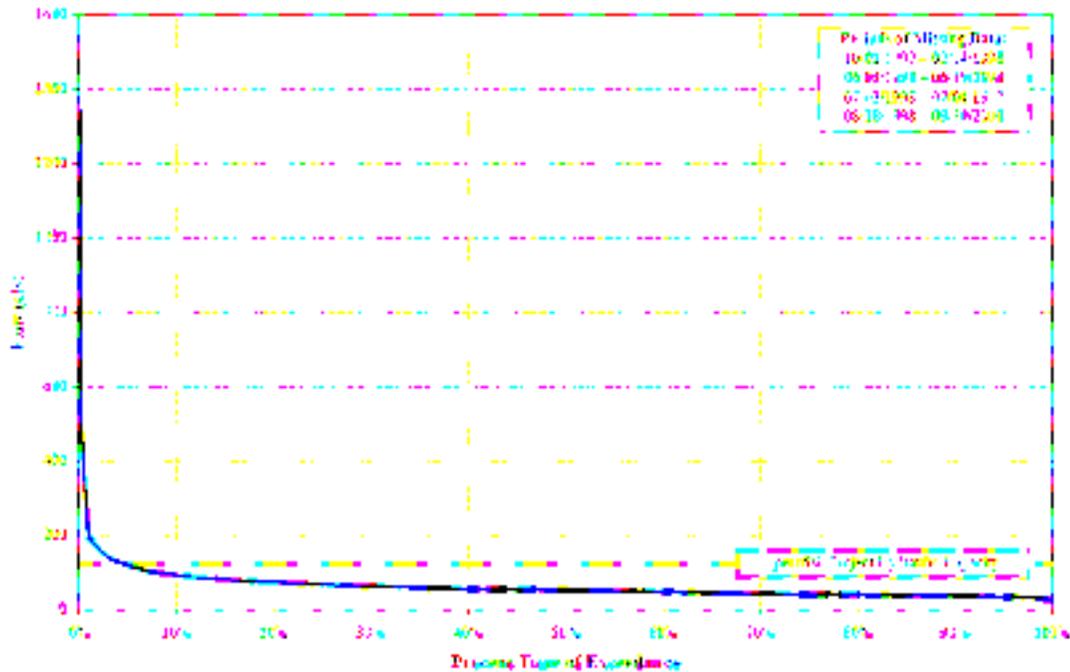
As stated in its Final License Application, the City of Spearfish (City) diverts up to 120 cfs of Spearfish Creek flow at the Maurice Dam for conveyance via an aqueduct to the Project hydropower plant where flows are returned to Spearfish Creek at the Project tailrace. This creates a Project bypassed reach of approximately 7.3 miles. Only flows in excess of 120 cfs pass over the dam and flow down the bypassed reach.

The mean annual flow for the USGS gage 06430900 upstream of Maurice Dam is 62 cfs (DTA 2008). As described in the following figure (A-4) from the Final License Application, for the Period of Record from 10/88 – 9/07, 120 cfs represents the 5% exceedance flow for Spearfish Creek upstream of the Maurice Diversion. Thus, under normal operating conditions for the Spearfish Hydroelectric Project, no flow goes over the dam to maintain aquatic resource conditions downstream in Spearfish Creek for approximately 95% of the year.

The diversion of water at Maurice Dam affects the amount and quality of aquatic habitat in approximately six miles of Spearfish Creek on National Forest System (NFS) lands. When flows in Spearfish Creek are less than 120 cfs, the upper 3.3 miles of the bypassed reach on NFS land have a varying accretion flow, depending on surface run-off

Enclosure 2. US Forest Service; Summary of Management Direction and Information; P-12775-001

FIGURE A-4
ANNUAL FLOW DURATION CURVE
SPEARFISH CREEK ABOVE SPEARFISH GAGE
(FOR OCTOBER 1, 1988 THROUGH SEPTEMBER 30, 2007)



and groundwater conditions, which has been measured as low as 2 cfs (DTA 2008). The lower 2.5 miles are mostly dry. In addition, as observed in early October 2007 during the Delphi Study, the stream channel was dry for several hundred feet immediately downstream of Maurice Dam before surface flow again appeared. The Spearfish Intake Dam, a diversion located 3.3 miles downstream of Maurice Dam, allows the City to withdraw up to 2.5 cfs to provide for City and other water supply needs (DTA 2008). Downstream of this second diversion, Spearfish Creek crosses the Madison and Minnelusa outcrops and is typically a dry streambed, other than during periods of spring snowmelt or very high rainfall amounts which result in flows greater than 120 cfs at Maurice Dam (DTA 2008).

Enclosure 2. US Forest Service; Summary of Management Direction and Information; P-12775-001

Water diverted at the Maurice diversion is routed through an aqueduct to the powerhouse in the City of Spearfish. This diversion results in higher flows in Spearfish Creek downstream of the powerhouse than would normally occur because stream flow over the Madison and Minnelusa outcrop (groundwater recharge zone) in the bypassed reach is avoided. Putnam and Long (2007) concluded that the streamflow loss threshold for Spearfish Creek probably is in the range of 20-25 cfs and that additional substantial losses probably occur downstream from the Madison Limestone outcrop. This additional loss is reported to be up to 8 cfs (DTA 2008) for a total surface loss in the bypassed reach upwards of 33 cfs (SD DENR 2008).

The reach of Spearfish Creek downstream of Maurice Dam is classified as a coldwater permanent fishery in the Administrative Rules of South Dakota (ARSD) 74:51:03:10 from Maurice Dam downstream approximately 3.3 miles to the Spearfish City Intake Dam (Sec. 33, T6N, R22E). Fish populations in Spearfish Creek vary depending on location. The reach immediately upstream of Maurice Dam contains the only naturally reproducing population of rainbow trout in the Black Hills capable of maintaining a Class I (>25 fish>200mm/surface acre) rainbow fishery (SDGFP 2007). Fish species present in the bypassed reach include brook, brown and rainbow trout according to 2008 surveys (SD DENR 2009a). The Delphi Study states that Spearfish Creek upstream of Interstate 90 contains brown trout, rainbow trout and brook trout; downstream of I-90, fish species include brown trout, longnose dace, longnose sucker and white sucker (DTA 2008). In addition, the American Dipper (Black Hills NF Species of Local Concern and South Dakota threatened species) is known to occur in the bypassed reach (DTA 2008) and

Enclosure 2. US Forest Service; Summary of Management Direction and Information; P-12775-001

nests at the Maurice Dam/Intake (Lovett 2008). Surveys to detect the northern leopard frogs, a Forest Service Rocky Mountain Region sensitive species, have not been done, but additional flows would improve habitat conditions for resident trout in the bypassed reach. The USFS recognizes that the minimum flows required by this condition will improve habitat for fish and thereby improve conditions for other aquatic dependent species.

Per the Rocky Mountain Region Watershed Conservation Practices Handbook (Forest Service Handbook 2509.25), stream health classes are based on the comparison of existing stream conditions to reference conditions. The stream health class in the bypassed reach is classified as "diminished" due to the diversion of up to 120 cfs of Spearfish Creek flow, the entrainment of fish into the aqueduct, and the physical instream barrier at the dam that blocks the free movement of fish and the downstream transport of bedload material. The reach of Spearfish Creek downstream of the powerhouse discharge within the City Park is classified as "robust", given the augmented flows resulting from the diversion around the groundwater recharge zone in the bypassed reach. The reach of Spearfish Creek downstream of Interstate 90 is classified as "at-risk" based on the amount of licensed water diversions and the past occurrences of fish kills in this reach due to cumulative water depletions under low flow conditions.

US Forest Service Legal and Administrative Policy Direction

The following National, Regional and Forest-level management direction provides the basis for the USFS requirement that this Condition be included in the Project License:

Enclosure 2. US Forest Service; Summary of Management Direction and Information; P-12775-001

Organic Administration Act (1897) describes the purposes of National Forests “to improve and protect the forest within the boundaries, or for the purpose of securing favorable conditions of water flows . . .” The Organic Act requires the USFS to regulate use and occupancy of National Forest System (NFS) lands to preserve and protect these lands.

Multiple-Use Sustained-Yield Act (1960) directed that the National Forests be established and administered for five co-equal purposes. Two of these purposes include protection of (1) watersheds and (2) wildlife and fish.

National Forest Management Act (1976) recognizes “...the fundamental need to protect and where appropriate, improve the quality of soil, water, and air resources.”

Federal Land Policy and Management Act of 1976 (“FLPMA”) (43 U.S.C. 1752).

Rights-of-way for water diversion, storage, and/or distribution systems, and other uses must include terms and conditions to minimize damage to scenic and aesthetic values and fish and wildlife habitat and otherwise protect the environment and comply with all other requirements of FLPMA Section 505 and federal and state laws and regulations.

Executive Orders 11988 (Floodplain Management) and 11990 (Protection of Wetlands) intend to preserve the natural and beneficial values of floodplains and wetlands (flood

Enclosure 2. US Forest Service; Summary of Management Direction and Information; P-12775-001

moderation, water quality protection, ground water recharge, wildlife habitat, and so forth).

Executive Order 12962 – Recreational Fisheries, dated June 7, 1995, directs Federal agencies to conserve, restore, and enhance aquatic systems to provide for increased recreational fishing opportunities nationwide.

USFS Watershed and Air Management, Water Uses and Development (USFS Manual (FSM) 2540).

FSM 2541.12 - Instream and Standing Water Requirements

Determine the amount of water needed for instream and standing water purposes, particularly for the following:

1. Adjudications. To be certain of meeting public obligations, establish Forest Service claims for instream flows and standing water during State or Federal court proceedings to adjudicate claims.
2. Land Management Planning. Many management objectives are dependent upon certain water flow and lake-level conditions. Determine the amount and location of water needed to meet management objectives.
3. Water Development Projects. Examine instream flow and standing water level needs, and establish requirements whenever a diversion or impoundment threatens to alter existing flows or levels.

Enclosure 2. US Forest Service; Summary of Management Direction and Information; P-12775-001

Determine quantities of water needed to maintain instream flows for recreation, fish and wildlife and other uses, as well as activities and uses associated with timber production and securing favorable conditions of water flow.

FSH 2509.25 - Region 2 Watershed Conservation Practices Handbook

The Region 2 Watershed Conservation Practices Handbook (USFS Handbook (FSH) 2509.25) contains proven watershed conservation practices to protect soil, aquatic, and riparian systems. If used properly, the watershed conservation practices will meet applicable Federal and State laws and regulations, including State Best Management Practices (BMPs).

Management Measure 3: In the water influence zone next to perennial and intermittent streams, lakes, and wetlands, allow only those actions that maintain or improve long-term stream health and riparian ecosystem condition.

The water influence zone (WIZ) includes the geomorphic floodplain (valley bottom), riparian ecosystem, and inner gorge. Its minimum horizontal width (from top of each bank) is the greater of 100 feet or the mean height of mature dominant late-seral vegetation. The WIZ protects interacting aquatic, riparian, and upland functions by maintaining natural processes and resilience of soil, water, and vegetation systems.

1. Design Criteria.

- a. Allow no action that will cause long-term change to a lower stream health class in any stream reach. In degraded systems (that is At-risk or Diminished

Enclosure 2. US Forest Service; Summary of Management Direction and Information; P-12775-001

stream health class), progress toward robust stream health within the next plan period.

b. Allow no action that will cause long-term change away from desired condition in any riparian or wetland vegetation community. Consider management of stream temperature and large woody debris recruitment when determining desired vegetation community. In degraded systems, progress toward desired condition within the next plan period.

Management Measure 5: Conduct actions so that stream pattern, geometry, and habitats maintain or improve long-term stream health.

Stream health depends much on channel widths and depths, bank stability, and quality of cover and substrate. In-channel work can directly impact stream channel morphology. Other actions, such as snowmaking or water depletions, can indirectly affect channel morphology by changing (either increasing or decreasing) flow.

1. Design Criteria.

b. Do not relocate natural stream channels if avoidable. Return flow to natural channels where practicable. Where reconstruction of stream channels is necessary, construct channels and floodways with natural stream pattern and geometry, stable beds and banks and provide habitat complexity.

Enclosure 2. US Forest Service; Summary of Management Direction and Information; P-12775-001

Management Measure 6: Maintain long-term ground cover, soil structure, water budgets, and flow patterns of wetlands to sustain their ecological function.

1. Design Criteria.

- a. Keep ground vehicles out of wetlands unless protected by at least 1 foot of packed snow or 2 inches of frozen soil. Do not disrupt water supply or drainage patterns into wetlands.

Management Measure 7: Manage stream flows under appropriate authorities to minimize damage to scenic and aesthetic values, fish and wildlife habitat, and to otherwise protect the environment.

Aquatic ecosystems make up only about 5 percent of the NFS land in the Region, but almost half of the imperiled species are aquatic dependent. Stream flow regimes are critical to maintaining stream processes, aquatic life and habitat. Work to protect current stream flow dependent water uses and improve conditions in perennial streams where stream flow regimes have been altered.

Streamflow protection may be a condition of permitting occupancy and use of NFS land. Cooperation with water users and others is necessary to ensure appropriate resource protection while meeting the needs of people who have valid existing water rights. State instream flow programs will be used where possible when they meet NFS needs.

Enclosure 2. US Forest Service; Summary of Management Direction and Information; P-12775-001

1. Design Criteria.

- a. Cooperate with water users and other interested parties to evaluate how to operate existing water use facilities to meet resource goals.
- b. Obtain stream flows under appropriate federal and state, legal and regulatory authorities to protect stream processes, aquatic and riparian habitats and communities, and recreation and aesthetic values. Top priority is to protect imperiled native species. Generally, this will include a range of flows to support desired uses and values.
- c. Upon issuance of special use authorizations for new or existing water use facilities, include permit conditions at the point of diversion or storage, if needed, to minimize impacts to water dependent resources and values. One or more of the following circumstances may be present in any given project. Water dependent resources and values not included on this list may require additional consideration.

(1) When managing for physical stream processes, including channel maintenance, evaluate each stream on which a project is planned to ascertain what flows represent the amounts and timing needed to sustain these functions. Essential attributes of a properly functioning self-maintaining channel include providing for flows to achieve the following:

- (a) Move the mass and sizes of alluvial sediment supplied to the channel.
- (b) Maintain channel capacity by preventing terrestrial vegetative growth in the bed of the channel.

Enclosure 2. US Forest Service; Summary of Management Direction and Information; P-12775-001

- (c) Protect and sustain channel banks and the floodplain by maintaining healthy streamside vegetation.
 - (d) Maintain processes that sustain the relationship between the channel and the floodplain.
- (2) When managing for aquatic biota and their habitat, evaluate each stream upon which a project is planned to ascertain what flows represent the amounts and timing needed to sustain viability of existing populations of native and desired non-native vertebrate species. Essential flow related attributes of sustainable habitat should achieve the following:
- (a) Maintain the physical, biological, and chemical processes necessary for all life-history stages of identified species and communities.
 - (b) Minimize the impact of dams and diversion structures on the interaction between populations.
 - (c) Return flows to historic habitat where reintroduction potential exists.
- (3) When managing for riparian habitat and communities, evaluate each stream upon which a project is planned to ascertain what flows and timing are needed to maintain or improve riparian habitat and community structure and function. These flows should be adequate to:
- (a) Maintain the physical, biological, and chemical processes necessary to ensure the sustainability and ecological integrity of identified species and communities.

Enclosure 2. US Forest Service; Summary of Management Direction and Information; P-12775-001

- (b) Maintain the magnitude, variability, and frequency of disturbance processes that affect community structure and function.
- (4) When managing for aesthetic and recreational values, evaluate each stream upon which a project is planned to ascertain what flows and timing represent the amounts and period needed to sustain these values. These flows should be adequate to:
 - (a) Support flow dependent recreation uses (for example, rafting, kayaking, swimming).
 - (b) Maintain desired populations of fish species to provide for appropriate recreational experiences.
 - (c) Provide water for aesthetic enjoyment.
 - (d) Support special designations, including Wild and Scenic Rivers, where flowing water is critical to the purpose and quality of the designation.
- d. Obtain water rights under federal and state law to protect stream processes, aquatic and riparian habitats and communities, and recreation and aesthetic values. Top priority is to protect imperiled native species.

Management Measure 8: Manage water-use facilities to prevent gully erosion of slopes and to prevent sediment and bank damage to streams.

Clean Water Act Section 304(f)(2) addresses control of pollution caused by dams and flow diversion facilities. Facilities include diversion and discharge structures, ditches,

Enclosure 2. US Forest Service; Summary of Management Direction and Information; P-12775-001

and pipes. Other activities, such as coal-bed methane production or snowmaking at ski areas, can generate large volumes of water that may exceed the assimilative capacity of receiving streams. Protect slope, stream stability and aquatic habitat as much and as early as practicable (Section 319(a)).

1. Design Criteria.

- a. Design all ditches, canals, and pipes with at least an 80 percent chance of passing high flows and remaining stable during their life.

NOTE: This measure minimizes pipe breaks and ditch failures that cause gullies and landslides which add huge sediment loads to streams.

- b. Do not flush or deposit sediment from behind diversion structures into the stream below. Deposit sediment in a designated upland site. Vegetate or otherwise stabilize spoil piles.

NOTE: Adding sediment to a stream that no longer has the capacity to transport it creates long-term stream damage (40 CFR 230) that often includes bank failure.

- c. Mitigate water imports and water disposal (including reservoir releases) so that the extent of stable banks, channel pattern, profile and dimensions maintain or improve long-term stream health in each receiving stream reach.

NOTE: Water imports that increase the size or duration of high flows have damaged streams through major bank erosion. This measure prevents such severe damage.

- d. Maintain and operate water conveyance ditches and pipelines to carry their design volumes of water with appropriate freeboard. Keep ditches clear of

Enclosure 2. US Forest Service; Summary of Management Direction and Information; P-12775-001

vegetation, debris or other obstructions to minimize potential for ditch failures.

Forest Plan

Forest Plan goals describe desired conditions, but are not quantitative nor time specific.

Forest Plan objectives describe measurable time-specific desired results of forest management and promote achievement of Forest Plan goals. A standard is a limitation on management activities and are used to determine if individual projects are in compliance with the Forest Plan. A guideline is a preferred or advisable course of action.

The Forest Plan establishes direction for instream flows and management of fish and aquatic habitat, including habitat for sensitive species. Specific direction includes:

Goal 1: Protect basic soil, air, water and cave resources

Objective 103. Maintain or improve long-term stream health. Achieve and maintain the integrity of aquatic ecosystems to provide stream-channel stability and aquatic habitats for water quality in accordance with state standards.

Objective 106. Manage water-use facilities to prevent gully erosion of slopes and to prevent sediment and bank damage to streams.

Objective 107. Restore degraded wetlands except where exemptions are allowed by a Clean Water Act Section 404 permit.

Enclosure 2. US Forest Service; Summary of Management Direction and Information; P-12775-001

Objective 108. Manage for sustained or improved water flows.

Goal 2: Provide for a variety of life through management of biologically diverse ecosystems.

Objective 213. Maintain or enhance existing riparian area biodiversity, physical structure and size.

Objective 217. Maintain habitat for game and fish populations at the state objectives in effect in 1996.

Objective 218. Conserve or enhance habitat for resident and migratory non-game wildlife. Increase habitat capability for species when recommended in project level analysis.

Objective 219. Maintain or improve instream fisheries habitat. Cooperate with state agencies in aquatic ecosystem improvements to meet mutually agreed-upon objectives.

Objective 221. Conserve or enhance habitat for R2 sensitive species and species of local concern (SOLC).

Goal 4: Provide for scenic quality, a range of recreational opportunities, and protection of heritage resources in response to the needs of the Black Hills NF visitors and local communities.

Enclosure 2. US Forest Service; Summary of Management Direction and Information; P-12775-001

Standards and Guidelines

Standard 1201. Conduct actions so that stream pattern, geometry, and habitats are maintained or improved toward robust stream health. (Regional WCP Handbook Standard 5)

Standard 1203. Design and construct all stream crossings and other instream structures to provide for passage of flow and sediment, withstand expected flood flows, and allow free movement of resident aquatic life. (Regional WCP Handbook Standard 4)

Standard 1207. Manage water-use facilities to prevent gully erosion of slopes and to prevent sediment and bank damage to streams. (Regional WCP Handbook Standard 8)

Standard 1210. Maintain enough water in perennial streams to sustain existing stream health. Return some water to dewatered perennial streams when needed. Comply with Section 505 of the FLPMA and 36 CFR 251.56 when issuing and re-issuing authorizations for water storage and diversion facilities. (Regional WCP Handbook Standard 7)

Standard 1301. In the water influence zone next to perennial and intermittent streams, lakes, and wetlands, allow only those actions that maintain or improve long-term stream health and riparian ecosystem condition. (Regional WCP Handbook Standard 3)

Enclosure 2. US Forest Service; Summary of Management Direction and Information; P-12775-001

Standard 1302. Maintain long-term ground cover, soil structure, water budgets, and flow patterns in wetlands to sustain their ecological function, per 404 regulations. (Regional WCP Handbook Standard 6)

Justification

Providing a minimum flow release past Maurice Dam into the bypassed reach of Spearfish Creek would improve aquatic habitat conditions on NFS land consistent with the Forest Plan, in particular Forest Plan Standards 1201 and 1210, and other USFS law, regulation and policy. A minimum flow release into the bypassed reach would also improve recreational opportunities as well as aesthetic values on NFS land within the Spearfish Canyon Scenic Byway.

As part of the FERC Traditional Licensing Process, the City and their contractor, Devine, Tarbell and Associates, Inc. (DTA) conducted a Delphi study to assess instream flow needs for fisheries. The Delphi Team included representatives from DTA (facilitator), the US Forest Service (USFS), the South Dakota Department of Game, Fish and Parks (SD GFP), City of Spearfish, South Dakota Department of Environment and Natural Resources, (SD DENR), the U.S. Fish and Wildlife Service and the Spearfish Canyon Society. The purpose of the Delphi Study was to determine how much biological habitat could be gained by releasing flow to the bypassed reach while avoiding or minimizing adverse effects to the fisheries downstream of the powerhouse. The Delphi Team focused their analysis of alternative flow regimes in Spearfish Creek to an evaluation of the effect of these flows on adult trout habitat in the analysis reaches. Spawning, nursery,

Enclosure 2. US Forest Service; Summary of Management Direction and Information; P-12775-001

and juvenile habitat were not evaluated, as historical data show that juvenile fish populations have been consistent over the years (DTA 2008). Flow releases at Maurice Dam that were evaluated during the Delphi Study include; 0 cfs (existing condition), 3.8 cfs, 6.5 cfs, 9.1 cfs and 18.5 cfs.

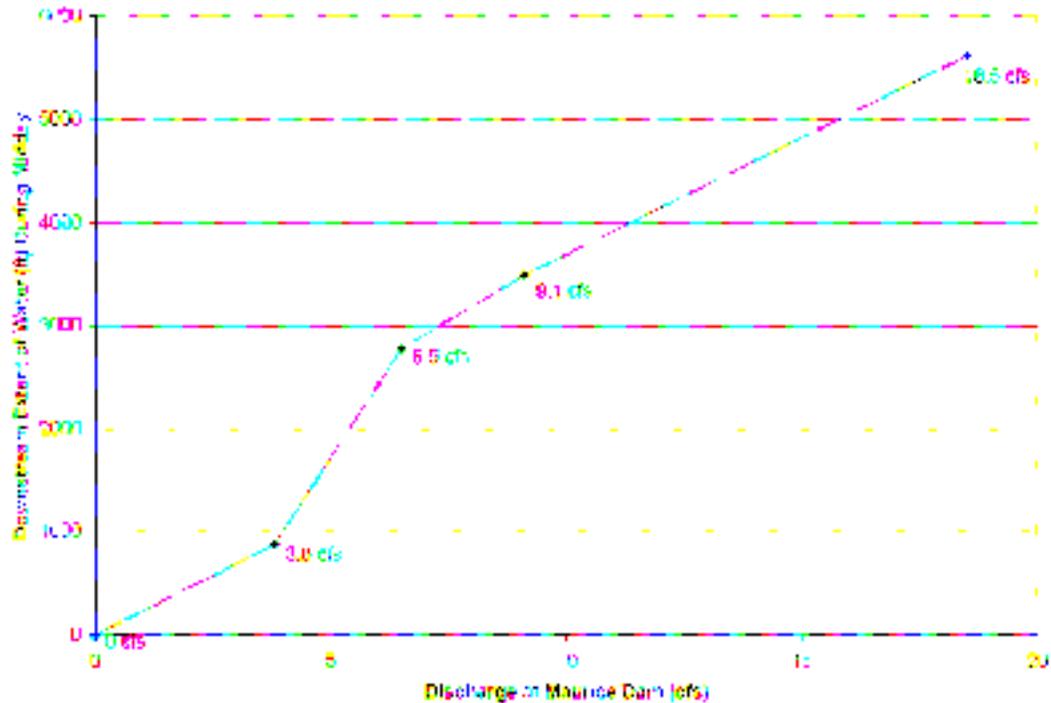
Specific Management Objectives and Attainment Criteria evaluated for adult trout include:

- Increasing the number and depth of pools for overwintering habitat
- Increasing depth related cover and access to cover
- Increasing in-channel connectivity of habitats.
- Increasing the abundance and distribution of native species including rare mountain suckers.

In addition to evaluating the effectiveness of the alternative flow regimes in meeting the identified management objectives, the Team also documented the increase in stream length in the bypassed reach associated with each flow. These observations are shown in the following figure (Figure 6) from the Delphi Study. As can be seen, the greatest proportional change in stream length (1785 feet) based on the slope of the line, occurred when releases were increased from 3.8 to 6.5 cfs. Although gains in stream length continued to occur at higher releases, there was a diminishing return in terms of the amount of flow necessary to achieve additional aquatic habitat.

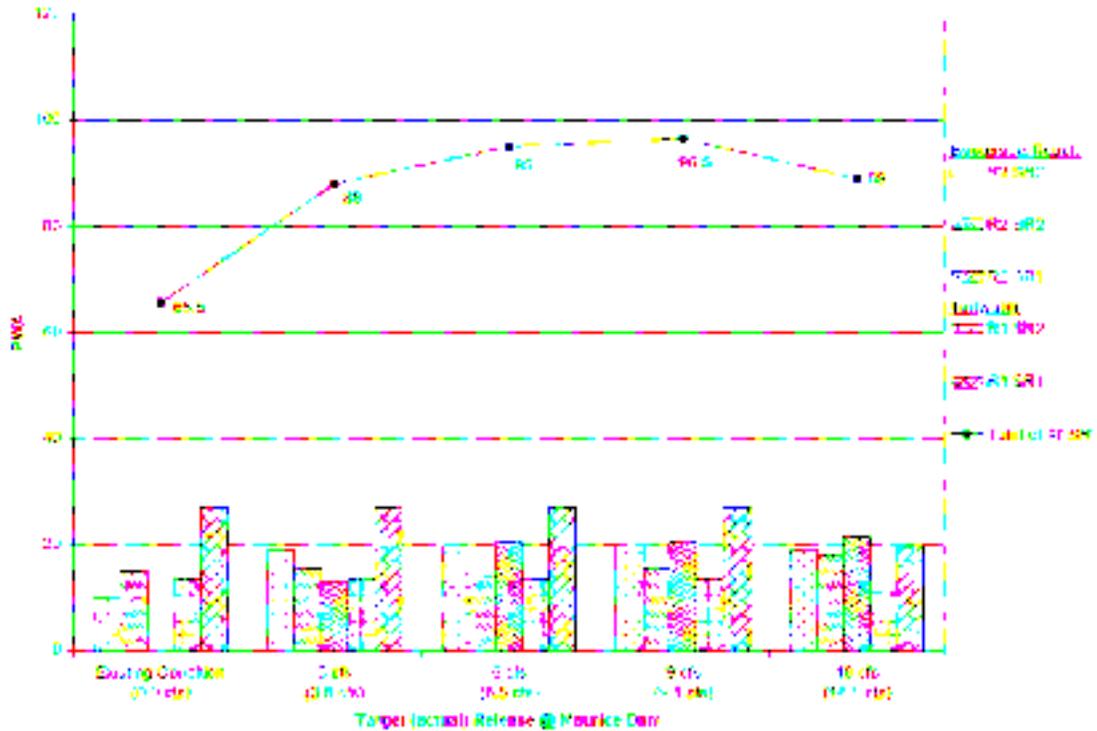
Enclosure 2. US Forest Service; Summary of Management Direction and Information; P-12775-001

FIGURE 6
CHANGE IN THE DOWNSTREAM EXTENT OF WATER
IN THE BYPASSED REACH AT FIVE STUDY FLOWS



The following figure (Figure 7) from the Delphi Report displays the composite results from the Delphi Report for each study site at the evaluated flows. Study reaches included three sites in the bypassed reach (R2) and two sites in the tailwater reach downstream of the powerhouse where flows were returned to Spearfish Creek (R1). As described earlier in this justification statement, the purpose of the study was “to determine how much biological habitat could be gained by releasing flow to the bypassed reach while avoiding or minimizing adverse effects downstream of the powerhouse.” Figure 7 from the Delphi report shows that based on the sum of results for all reaches, the 9 cfs release (Q9) had the highest total score (96.5) in terms of meeting management objectives for all

FIGURE 7
SUMMARY OF SITE-SPECIFIC AND OVERALL PRIORITY-WEIGHTED
ATTAINMENT (PWA) SCORES AT EACH STUDY FLOW



reaches. The score for the Q6 release (95) came in a close second overall. The Q18 release was ranked third in scoring (89) primarily due to the reductions in aquatic habitat observed in the tailwater reaches as a result of surface flow in to the groundwater recharge zone in the bypassed reach. None of the other release flows (Q3, Q6, Q9) had a noticeable effect on habitat values in the tailwater reach. All studied release flows resulted in benefits to habitat in the bypassed reach compared to the existing condition, with the Q18 flow showing the most benefit. The Q6 and Q9 flows produced similar amounts of habitat benefit in the bypassed reach. Although the Q18 flow produced the best results in the bypassed reach, these habitat gains were offset by the decreases in habitat in the tailwater reach associated with the release.

Enclosure 2. US Forest Service; Summary of Management Direction and Information; P-12775-001

The USFS has used the Delphi Study (DTA 2008), comments provided to FERC on Scoping Document 1 by SD DENR (February 11, 2009), comments from HDR/DTA (February 13, 2009) and discussions with other involved parties to develop the minimum flow release condition for the bypass reach. The Delphi study determined that a release of 9.1 cfs at Maurice Dam had the highest priority-weighted attainment (PWA) score overall. The PWA score is the product of the priority ranking times the attainment criteria score for all management objectives summed for each stream subreach. Flow releases of 3.8, 6.5 and 9.1 cfs all had higher PWA scores in the bypassed reach as compared to the current condition of no flow release.

Although the Delphi Study identified a 9 cfs release as providing the best trout habitat in the bypassed reach, the Delphi Team selected a lower set of releases as their Instream Flow Recommendation. The Q6 flow was selected because it provided substantial increases in both the length and quality of aquatic habitat in the bypassed reach as compared to baseline conditions while also weighing and conserving the higher quality (both in fish biomass and numbers/size of adult trout) fishery in the reach downstream of the powerhouse. It also met the intent to keep the flow recommendation as simple (constant) as possible to keep flow delivery and implementation uncomplicated (DTA 2008).

The Delphi Team also recognized that there might be a need to adjust the flow release downward in the bypassed reach during dry periods to maintain aquatic habitat conditions in the stream reach below the powerhouse. Thus, the Team's ultimate consensus flow

Enclosure 2. US Forest Service; Summary of Management Direction and Information; P-12775-001

recommendation was to maintain a release of 6 cfs flow at Maurice during normal/wet years and a release of 4 cfs flow in dry years. The flow recommendation from the Delphi Team included a dry-year trigger based on the 75% exceedance point (39 cfs) for the average mean daily flow as measured over a three-year period at the USGS gage located upstream of Maurice Dam. The Delphi Team was also open to the use of other indexing methodologies (DTA 2008).

The USFS supports the 6 cfs flow recommendation identified by the Delphi Team as our conditional flow release during the non-irrigation season. However, the analysis done by SD DENR (2009b) and HDR/DTA (2009) identified the fact that the Delphi dry-year trigger (3-year rolling average period) was not responsive to identifying the real-time flow adjustments intended to protect the fishery and water users downstream of the powerhouse. The USFS had also identified the need to clarify the Delphi flow dry-year trigger in our comments on the Draft License Application (USDA Forest Service 2008).

Condition 17 provides for incremental reductions in flow releases to the bypassed reach during the irrigation season (May 1 through September 30) to account for drought conditions. The reductions in flow are tied to natural flow reductions in Spearfish Creek. The reduced flows will impose additional risk to aquatic resources but the flows are designed to reduce risks to an acceptable level while protecting and utilizing the reservation. The return to the 6 cfs flow release on October 1 is justified by the need to avoid flow fluctuations that may adversely affect fall spawning trout in both the bypassed

Enclosure 2. US Forest Service; Summary of Management Direction and Information; P-12775-001

reach as well as the reach downstream of the powerhouse. (see letter from SDGFP, Final License Application, Vol. II, pp 1109-1113.)

The USFS flow condition would also improve recreational and aesthetic values compared to existing conditions along the Spearfish Canyon Scenic Byway on NFS land. The scenery along Spearfish Canyon is unique and often spectacular. The Scenic Byway, approved by the Chief of the Forest Service in 1989, receives very high recreational use throughout the year, but especially during the summer and fall (USDA Forest Service 2006).

The USFS minimum flow release condition does not allow for the complete stoppage of flows released at Maurice Dam during extreme low flow conditions as originally proposed in the City's Final License Application. HDR/DTA (2009) calculated the length of time when flow releases would cease during extreme low flow conditions could range from a 2 to 2.5 months time period beginning in July and extending through September. Providing continuous flow releases into the bypassed reach would maintain or improve stream health and would be consistent with the Forest Plan standards (1201, 1210) and pertinent laws, regulations, and policies as compared to existing conditions.

The USFS minimum flow release condition creates and maintains 2,774 feet of additional perennial aquatic habitat in the bypassed reach at the 6 cfs target release. This is based on the Delphi Study results as compared to current conditions. The additional aquatic habitat would benefit special status species, such as the American dipper, as well as fisheries and

Enclosure 2. US Forest Service; Summary of Management Direction and Information; P-12775-001

riparian vegetation. Additional aquatic habitat could also benefit the northern leopard frog, a special status species. In addition to the creation and maintenance of new habitat downstream of the City's Municipal Intake during the irrigation and non-irrigation seasons, the USFS flow condition would result in augmented flows and improved habitat conditions in the 3.3 miles of the bypassed reach from Maurice Dam downstream to the City's Municipal diversion.

Based on the outcomes described above, conditions in the bypassed reach would trend toward improved stream health compared to current conditions. The USFS minimum flow release condition will not cause a long-term change to a lower stream health class in the stream reach downstream of the powerplant or in the stream reach downstream of Interstate 90.

In summary, the bypassed reach has been degraded by diversion of up to 120 cfs of Spearfish Creek flows, which occurs 95% percent of the time. The USFS flow condition would meet Forest Plan direction by improving aquatic habitat conditions in the bypassed reach. Additionally, the flow condition would increase recreational opportunities in Spearfish Canyon and would enhance aesthetic values in the bypassed reach visible from the Scenic Byway.

Enclosure 2. US Forest Service; Summary of Management Direction and Information; P-12775-001

Condition No. 18—Minimum Flow Release and Instream Flow Measurement Plan

Rationale for USFS Condition No. 18

Condition No. 17 requires the City to provide instream flow below the Maurice Dam into the bypassed reach of Spearfish Creek.

The legal and administrative basis for Condition No. 18 is identical to that of Condition No. 17. The USFS needs assurance that favorable flows are being met under the terms of Condition 17 and that the data to determine instream flows is available based on powerhouse flow data. Condition No. 18 provides for that assurance by requiring the monitoring of flows at Maurice Dam and the powerhouse. A provision requiring compliance measurement and monitoring is a standard condition in FERC-licensed projects.

Condition No. 18 requires the City to submit for Commission approval plans for the installation, maintenance, and operation of flow measurement devices with continuous recording capability at Maurice Dam and at the project powerhouse to demonstrate compliance with minimum flow release requirements under Condition 17. Effects to NFS resources will be mitigated through the operation and monitoring of this system sufficient to demonstrate compliance with prescribed flows, therefore assuring that the goal of maintaining favorable flows through the Project area is met.

Enclosure 2. US Forest Service; Summary of Management Direction and Information; P-12775-001

Recommendation No. 1 – Install artificial nest boxes for the American Dipper at suitable sites

Rationale for USFS 10(a) Recommendation No. 1

Existing Situation

The American Dipper population in the Spearfish Creek drainage is limited by the number and distribution of suitable nesting sites. There are a number of bridges that span Spearfish Creek in the reach downstream of the powerplant that would be suitable sites for the placement of dipper artificial nest boxes/platforms.

Justification

The American Dipper is a Species of Local Concern on the Black Hills NF. Installing additional nest boxes/platforms at suitable sites in the Project area would meet Forest Plan Objective 221 to conserve or enhance habitat for R2 sensitive species and species of local concern.

The FERC Staff, in their Draft Environmental Analysis (DEA) for the Project, noted that the American Dipper is present along Spearfish Creek and cited a literature source (Lovett, 2008) that reported that a nesting pair had been unsuccessful in fledging any young in 2008 (DEA, page 56) . FERC staff support this recommendation to enhance reproductive success for the American Dipper (DEA; p. viii, p. x, p. 56, pp. 60-61, p. 100).

Enclosure 2. US Forest Service; Summary of Management Direction and Information; P-12775-001

References

DTA (Devine, Tarbell and Associates, Inc.). 2008. Analysis of Spearfish Creek instream flows using the Delphi Team Study approach. Spearfish Hydroelectric Project No. 12775.

HDR/DTA. 2009. Comments on Scoping Document 1 Spearfish Hydroelectric Project No. 12775) dated February 13, 2009 submitted via e-filing.

Lovett, K. 2008. American dipper (*Cinclus mexicanus*) 2008 nest monitoring Spearfish Creek watershed and Whitewood Creek in the Black Hills of South Dakota. A report to the Department of Game, Fish and Parks, Pierre, South Dakota.

Putnam, L.D., and Long, A.J., 2007, Characterization of ground-water flow and water quality for the Madison and Minnelusa aquifers in northern Lawrence County, South Dakota: U.S. Geological Survey Scientific Investigations Report 2007-5001, [SIR 2007-5001](#), 61 p.

SD DENR. 2008. June 13, 2008 letter from Secretary Pirner to Maureen Winters, DTA providing comments on the Spearfish Hydroelectric Project P-12775-001 Draft License Application.

SD DENR. 2009a. Analysis of Spearfish Creek from Spearfish City Intake Dam to Homestake Hydroelectric Plant Intake.
<http://denr.sd.gov/documents/SpearfishCreek.pdf>

SD DENR. 2009b. Letter from Secretary Pirner, dated February 11, 2009, to Secretary Bose, Federal Energy Commission.

Enclosure 2. US Forest Service; Summary of Management Direction and Information; P-12775-001

SDGFP. 2007. South Dakota Statewide Fisheries Surveys – Spearfish Creek Watershed Surveys 2007.

<http://www.sdgfp.info/Wildlife/fishing/WesternLakes/SpearfishCreek07.pdf>

Tennant, D.L. 1976. Instream flow regimens for fish, wildlife, recreation and related environmental resources, *Fisheries* 1 (1976), pp. 6–10.

USDA Forest Service. 2006. 1997 Revised Land and Resource Management Plan for the Black Hills National Forest, as amended by the Phase II Amendment. US Department of Agriculture-Forest Service, Black Hills National. Custer, South Dakota. March 2006. Available online at:

<http://www.fs.fed.us/r2/blackhills/projects/planning/index.shtml>

USDA Forest Service. 2008. Letter dated May 29, 2008 to Maureen Winters, DTA, transmitting Forest Service comments on the Draft License Application.

Document Content(s)

Spearfish_Final_T-C-R_Cvr_Ltr_8-25-10.DOC.....	1-2
Encl01_FS_Conditions_Spearfish.DOC.....	3-20
Encl02_FS_Justification_Spearfish.DOC.....	21-63