

PROPOSED CERTIFICATION LETTER TO BE ISSUED  
IF APPROVED AFTER PUBLIC NOTICE, REVIEW AND, IF REQUIRED, HEARING BY  
DEPARTMENT SECRETARY

, 2010

Cheryl Johnson  
City of Spearfish  
625 Fifth Street  
Spearfish, SD 57783

RE: 401 Certification for city of Spearfish's Hydroelectric Project (FERC Project No. 12775)

Dear Ms. Johnson:

The South Dakota Department of Environment and Natural Resources ("DENR") originally received a request for Section 401 Water Quality Certification from the city of Spearfish ("City") in September 2008. That request was withdrawn and resubmitted in August 2009 and again in July 2010. The request was submitted in support of the Federal Energy Regulatory Commission ("FERC" or "Commission") Licensing of the Spearfish Hydroelectric Project. The certification is required pursuant to Section 401 of the federal Clean Water Act and the Administrative Rules of South Dakota (ARSD) 74:51:01:63, 74:51:01:64, and 74:51:01:65.

The DENR Division of Environmental Services has completed its review of the request for water quality certification for a FERC license for the city of Spearfish's Hydroelectric Project, Project No. 12775, in Lawrence County, South Dakota. Discharges from this Project influence the water quality and beneficial uses of portions of Spearfish Creek. Conditions imposed in this certification address water quality effects the Project will have on Spearfish Creek. Section 401 of the federal Clean Water Act requires this review before a federal permit or license is granted.

This letter will serve as certification by the state of South Dakota under SDCL 34A-2-33 and Section 401 of the federal Clean Water Act that the City has satisfactorily shown that the City and the discharge will comply with Sections 301, 302, 306, and 307 of the federal Clean Water Act when the project is operated under the terms and conditions set forth in this 401 certification and that, under ARSD 74:51:01:65, there is a reasonable assurance that the City's activity will be conducted in a manner that will not violate applicable state water quality standards.

The Spearfish Hydroelectric Project is an existing project located on Spearfish Creek in Lawrence County, South Dakota. The project was constructed by Homestake Mining Company in the early 1900s. In 2004, Homestake sold the project to the City, and it has owned and operated the project since then. The City is authorized to divert up to 120 cubic feet of water per second (cfs) from Spearfish Creek to generate power at the hydroelectric plant in accordance with an approved state

water right. The water is diverted from Spearfish Creek at an area known as Maurice located in the NW 1/4 of the SE 1/4 Section 8, T5N, R2E. The water travels approximately 4.5 miles through an aqueduct to a forebay dam where water is then conveyed under pressure to a powerhouse located in the NE 1/4 of the SE 1/4 Section 15, T6N, R2E, in the city. The water is then released from the powerhouse into Spearfish Creek.

Spearfish Creek from Maurice to the City intake dam located in Spearfish Canyon for the purposes of this Water Quality Certification is referred to as the “upstream reach”. This section of creek has been designated by ARSD 74:51:03:10 for the following beneficial uses: coldwater permanent fish life propagation waters; limited-contact recreation waters; fish and wildlife propagation, recreation, and stock watering waters; and irrigation waters. This section of creek is currently a productive cold water permanent trout fishery. Immediately below the City intake there is a natural loss zone where flow in the creek is lost to the geologic formations underlying the creek. According to studies completed by the United States Geological Survey, the loss zone has the potential to diminish flow by 20-25 cfs when water is flowing across it.

Spearfish Creek at the powerhouse to its confluence with the Redwater River is referred to in this Water Quality Certification as the “downstream reach” and has been designated by ARSD 74:51:03:10 for the following beneficial uses: domestic water supply waters, coldwater permanent fish life propagation waters; immersion recreation waters; limited-contact recreation waters; fish and wildlife propagation, recreation, and stock watering waters; and irrigation waters.

The City is allowed by its current water right to divert up to 120 cfs in Spearfish Creek into the aqueduct to feed the hydroelectric plant. Any flows not diverted at Maurice remain in the upstream reach. However, under typical stream flow, the flow at Maurice is less than 120 cfs, and the City diverts the entire stream flow to generate power at the plant.

The City is proposing in its FERC license and 401 Certification applications to modify the existing operation by allowing stream flows to bypass the Maurice diversion and remain in the upstream reach at Maurice. This bypassed flow will enhance the existing flows in the upstream reach that is currently producing a cold water permanent fishery. The amount of flow to remain in the upstream reach will vary depending on the season and the amount of flow going through the power plant.

In reviewing the City’s application for 401 Water Quality Certification and developing the mandatory conditions to be placed in the Project’s FERC license, DENR Division of Environmental Services considered the following:

1. The current beneficial uses of Spearfish Creek and corresponding water quality standards in ARSD 74:51:03:10 were first developed in 1967 and adopted based on the conditions in Spearfish Creek. The latest changes to these designated beneficial uses occurred in March 2009 when the segment of Spearfish Creek from the Spearfish City intake to Maurice was upgraded to a coldwater permanent fishery. These beneficial uses and corresponding water quality standards were developed and adopted based on the historic, current, and consistent operation of the hydroelectric power plant.
2. The bypass flow releases at Maurice proposed by the City will enhance the aquatic and

3. DENR Division of Environmental Services evaluated flow data from United States Geological Survey gaging stations located on Spearfish Creek. That evaluation determined 40 cfs or less is the critical low flow during the months of May through September to ensure continued protection of uses and water quality standards in the downstream reach.
3. In July 2009 and June 2010, DENR Division of Environmental Services issued a Proposed Water Quality Certification for the Project with mandatory conditions pertaining to releases in the upstream reach. In July 2009, the United States Forest Service (USFS) issued preliminary mandatory conditions to include in the Project's FERC license including conditions requiring releases in the upstream reach through the Black Hills National Forest. The preliminary USFS conditions and the DENR Division of Environmental Services conditions were in conflict, and if all mandatory conditions were placed into a FERC license, compliance with the FERC license, if it were issued, would not have been possible for the City. Therefore, USFS, DENR Division of Environmental Services, and the City negotiated flow criteria as listed in Table 1 of Condition 1(a) below. The flow criteria conditions listed in Table 1 of Condition 1(a) are based on critical low flows as measured at the generating units in the Project powerhouse, DENR's determination of critical low flow conditions in the downstream reach, the conclusions of a biological study (DELPHI Team report), the City's ability to comply with the resulting operational conditions, and the reasonable likelihood that the resulting flow regime would protect and maintain the beneficial uses and water quality standards of Spearfish Creek.
4. The DENR has determined that the Water Quality Certification should be issued with the conditions set forth below. These conditions provide for instantaneous minimum flow bypass releases during scheduled periods, meaning that once the Minimum Flow Releases are made according to the schedule, the release flows must continue to be released at the scheduled rate at all times and may not be averaged during the prescribed periods.

**Pursuant to Administrative Rules of South Dakota (ARSD) 74:51:01:65, DENR grants Section 401 Water Quality Certification for the Hydroelectric Project, FERC Project No. 12775, with the following conditions:**

**Condition 1 – 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

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

	$\leq 40$ cfs	
	$> 30$ cfs, but $\leq 35$ cfs	2 cfs
	$\leq 30$ 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.

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 1(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 U.S. 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 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 2 – 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 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 1. 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 1. The plan shall also include methods for calculating the seven-day Average Powerhouse Flow in Table 1 of Condition 1. 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.

### **Condition 3 – Maintenance of records and documentation**

The licensee will maintain the Spearfish Creek flow records and documentation of when the Minimum Flow Release into the bypassed reach at Maurice Dam is reduced during the period of May 1 through September 30 of each year in Spearfish City Hall and make them available to DENR upon request during normal business hours. Each record must be maintained for at least three years.

### **Condition 4 – Reporting of flow records to DENR**

The licensee will compile the flow records and documentation of when the Minimum Flow Release into the bypassed reach at Maurice Dam is reduced during the period of May 1 through September 30 each year and submit a report with this information to DENR, Surface Water Quality Program, by January 1 of the following year.

These conditions will become part of any license issued by the Federal Energy Regulatory Commission. This certification does not authorize the above referenced activity. The activity

may occur only by authorization of the Federal Energy Regulatory Commission.

I hereby certify, as Secretary of the Department of Environment and Natural Resources, that I have independently and impartially reviewed the non-binding recommendation and analysis issued by the DENR Division of Environmental Services, that public notice and an opportunity for comment and intervention has been afforded as required by SDCL 34A-2-33 and SDCL 34A-3-34 as well as the Clean Water Act, Section 401(a), and that I have given due consideration to all comments, evidence, and arguments provided by all persons and parties.

This certification does not constitute a relinquishment of the DENR authority as defined in SDCL chapter 34A-2 nor does it fulfill or waive any other local, state, or federal regulations.

If you have questions pertaining to this certification, please contact Patrick Snyder, at (605) 773-3351. Thank you for helping us comply with the requirements of the federal Clean Water Act.

Sincerely,

Steven M. Pirner, P.E.  
Secretary