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**FERC/EIS-0225D**

## **Draft Environmental Impact Statement**

### **Executive Summary**



## **South Feather Power Project FERC Project No. 2088-068, California**

**Federal Energy Regulatory Commission  
888 First Street N.E.  
Washington, DC 20426**

## EXECUTIVE SUMMARY

The South Feather Water and Power Agency (South Feather) proposes to continue to operate its existing 104-megawatt South Feather Power Project (project) located on the South Fork Feather River (SFFR), Lost Creek, and Slate Creek, in Butte, Yuba, and Plumas counties, California. The project occupies 1,977.12 acres of federal lands administered by the Plumas National Forest and 10.57 acres of federal lands administered by the U.S. Bureau of Land Management.

### **Proposed Action**

The project is a water supply/power project composed of four hydroelectric developments: Sly Creek, Woodleaf, Forbestown, and Kelly Ridge, and it is described in more detail in section 2.2. South Feather proposes no capacity or operating changes, but does propose measures for the protection and enhancement of environmental resources including increased minimum flows, measures to improve aquatic habitat and protect sensitive species, and measures to maintain and enhance existing recreation opportunities and provide new whitewater boating opportunities.

### **Alternatives Considered**

This draft EIS analyzes the effects of continued project operation and recommends conditions for a new license for the project. In addition to South Feather's proposal, we consider three alternatives: (1) staff alternative; (2) staff alternative with mandatory conditions; and (3) no action—continued operation with no changes.

#### Staff Alternative

Under the staff alternative, the project would be operated as proposed by South Feather, but would include additional measures including:

- increased minimum flows;
- ramping rates to protect fish and foothill yellow-legged frogs (FYLF);
- FYLF surveys;
- funding for operation of gages to measure streamflows;
- real-time monitoring of water temperatures to support the California Department of Water Resources efforts protect anadromous fishes downstream of Oroville dam;
- annual consultation with resource and management agencies to facilitate adaptive management;
- implementing the Historic Properties Management Plan with staff's additional measures; and
- development and implementation of plans for fuel treatment, road management and aesthetics.

We include all but two of the section 4(e) measures specified by the Forest Service in the staff alternative: Condition No. 18.1, minimum instream flows, and Condition No. 19.2 (parts 2 through 4), FYLF studies. In each case we recommend alternative measures that we conclude will provide substantial protection and enhancement of these resources.

#### Staff Alternative with Mandatory Conditions

Under the staff alternative with mandatory conditions, the minimum flows specified by the Forest Service would replace the minimum flows that we recommend. In addition, the licensee would conduct studies of project effects on FYLF, including population modeling, a population viability analysis, 2-D habitat modeling, and monitoring of changes in geomorphology and riparian encroachment.

#### **Public Involvement and Areas of Concern**

Before filing its license application, South Feather conducted pre-filing consultation. The intent of the Commission's pre-filing process is to initiate public involvement early in the project planning process and to encourage citizens, governmental entities, tribes, and other interested parties to identify and resolve issues before an application is formally filed with the Commission. After the application was filed, we conducted scoping to determine which issues and alternatives should be addressed. A scoping document was distributed to interested parties on May 17, 2007. Scoping meetings were held in Oroville, California, on June 13, and 14, 2007. On February 14, 2008, we requested conditions and recommendations in response to the notice of ready for environmental analysis.

The primary issues associated with relicensing the project are appropriate minimum flows in project-affected reaches, measures to enhance habitat for FYLF, effects of any new minimum flow regime on reservoir-based recreation, and potential effects of project operation on water temperatures and anadromous fish downstream of Oroville dam.

#### **Project Effects**

The South Feather Power Project impounds two sections of the SFFR and one section of Lost Creek, and alters flows in the SFFR and in Lost Creek via seasonal water storage in two reservoirs and diversion of flows to generate power at four powerhouses. In addition, diversion of water from Slate Creek into Sly Creek reservoir reduces flows in the North Yuba River downstream of the Slate Creek confluence, and increases flows in the Feather River downstream of the project.

**Geology and Soils**—Under South Feather's proposal: (1) large woody debris would be passed downstream of the Little Grass Valley, Sly Creek, and Lost Creek reservoirs, enhancing downstream aquatic habitat; (2) supplemental stream flows would continue to be passed into Lost Creek to cleanse accumulated fine sediment from spawning gravels, reduce encroachment of riparian vegetation and enhance geomorphic characteristics in Lost Creek; and (3) sediment pass-through measures at the Slate Creek diversion would restore sediment transport processes and improve the reliability of

minimum flow releases and diversion operations by preventing sediment accumulation upstream of the dam.

With our modifications to South Feather's proposal and under the staff alternative with mandatory conditions, development and implementation of soil erosion control and revegetation plans during construction of any facilities would ensure that native species revegetate disturbed areas and would minimize the potential that adverse effects from erosion or sediment deposition would occur.

**Aquatic Resources**—Under South Feather's proposal: (1) minimum instream flows in project-affected reaches would be increased to benefit trout and other aquatic biota, but would cause a minor reduction in water levels in Little Grass Valley reservoir; (2) streamflows and habitat for trout in Slate Creek would be enhanced during critical high temperature periods; (3) a wild trout supplementation program would enhance trout populations in reaches where recruitment does not meet fisheries objectives; (4) fish and invertebrate populations would be monitored to assess trends and guide adaptive management under the new project operating regimes.

With our modifications to South Feather's proposal: (1) minimum instream flows and trout habitat in project-affected reaches would be further enhanced, but would cause a slight additional reduction in water levels in Little Grass Valley reservoir; (2) ramping rates would be implemented to reduce stranding mortality of trout and invertebrates; (3) streamflow measurement capabilities would be ensured for the term of the license; and (4) real-time flow and water temperature information would be provided to DWR to assist it with meeting water temperature objectives to protect anadromous fish downstream of Lake Oroville.

Under the staff alternative with mandatory conditions, the amount of physical trout habitat in project-affected reaches would be slightly enhanced as a result of higher minimum instream flows, but water temperatures would become less suitable (colder than optimal) for trout spawning and rearing in the reaches downstream of Little Grass Valley and Lost Creek dams, and for hardhead in the Forbestown bypassed reach. Similarly, higher summer flow releases required downstream of Little Grass Valley and Lost Creek dams would likely reduce invertebrate diversity and production due to the influence of coldwater outflows and increased thermal stability. In addition, higher minimum flows would cause a greater reduction in water levels in Little Grass Valley reservoir, which would cause some minor adverse effects on reservoir fish habitat.

**Terrestrial Resources**—Under South Feather's proposal, annual training of employees, consultation with the Forest Service, and vegetation and invasive weed management plans would further the protection of sensitive areas and species and help to control the spread of noxious weeds; controllable pulse flows that could adversely affect FYLF would be avoided; and the effectiveness of wildlife crossings and escape facilities would be maintained through design consultation with Cal Fish & Game when they are replaced or retrofitted.

With our modifications to South Feather's proposal, ramping rates developed to protect FYLF would minimize adverse effects on reproduction and FYLF surveys would allow the effects of operation on FYLF to be monitored and the need for any additional studies or measures to be identified and implemented, and South Feather would be required to maintain all wildlife crossings and escape facilities that are necessary to protect wildlife.

Under the staff alternative with mandatory conditions, the higher flows specified by the Forest Service in the South Fork diversion dam and Forbestown diversion dam reaches would likely reduce habitat suitability for FYLF by reducing water temperatures below levels required for breeding and by providing less stable flows. Additional studies specified by the Forest Service, including habitat, population, and viability models; and physiological studies related to water temperature would increase biological knowledge on the species and could enhance conservation efforts for FYLF.

**Threatened and Endangered Species**—although no threatened or endangered species are known to or are likely to occur in the project area, the presence of the valley elderberry longhorn beetle and the California red-legged frog can not be ruled out. Therefore we conclude that the alternatives considered in this EIS may affect, but are unlikely to adversely affect these threatened and endangered species.

**Recreation**—Under South Feather's proposal, South Feather would be responsible for the following measures to maintain and enhance recreational opportunities: (1) operation and maintenance of recreational facilities; (2) rehabilitation of existing recreational facilities; (3) construction of a new multi-use trail below Little Grass Valley dam to improve access to the SFFR for recreational boating and angling; (4) management of reservoir levels to facilitate recreational use while achieving project purposes; (5) provision of whitewater boating flows in the Little Grass Valley dam reach during the fall in all water years; (6) provision of whitewater boating flows in the spring in Above Normal and Wet water years in the South Fork diversion dam and Forbestown diversion dam reaches; (7) provision of flow information for whitewater boating to the public; and (8) maintenance and enhancement of public safety by installation of safety buoys each year in Little Grass Valley and Sly Creek reservoirs.

With our modifications to South Feather's proposal, higher minimum flow releases would cause some adverse effects on reservoir recreation by increasing the drawdown of Little Grass Valley reservoir, and would reduce the amount of water that is available for whitewater releases.

Under the staff alternative with mandatory conditions, the adverse effects of drawdown on reservoir recreation would be increased, and the amount of water available for whitewater releases would be further reduced.

**Cultural Resources**—Under South Feather's proposal, cultural resources would be protected under provisions specified in the Historic Properties Management Plan included in South Feather's license application.

With our modifications to South Feather's proposal, additional measures included in the Historic Properties Management Plan would provide a higher level of assurance that important cultural resources are adequately protected.

**Land Use and Aesthetics Resources**—Under South Feather's proposal, public safety would be maintained and enhanced by developing and implementing a fire prevention, response and investigation plan.

With our modifications to South Feather's proposal, fire risk would be further reduced by developing and implementing a fuel treatment/vegetation management plan, road management would be improved throughout the project vicinity, and aesthetics would be protected and improved by implementing a visual management plan that would bring project facilities into compliance with land resource management plan direction.

**General**—With our modifications to South Feather's proposal, annual consultation with the management agencies would assist with interpretation of monitoring results and adaptive management.

Under the no-action alternative, environmental conditions would remain the same, and there would not be any enhancement of environmental resources.

### **Conclusions**

Based on our analysis, we recommend licensing the project as proposed by South Feather, with some staff modifications and additional measures. The recommended staff modifications include or are based in part on recommendations made by the federal and state resource agencies that have an interest in the resources that may be affected by continued project operation. The additional measures include enhanced minimum flows in project bypassed reaches, development of ramping rates and additional monitoring to determine and address project effects on FYLF populations, and provision of flow and water temperature information to DWR to help it maintain suitable water temperatures for downstream anadromous fish.

In section 4.1 of the EIS, we estimate the annual net benefits of operating and maintaining the project under the three alternatives identified above. Our analysis shows that the annual net benefit would be \$27,095,100 for the proposed action; \$25,912,200 for the staff alternative; \$25,281,100 for the staff alternative with mandatory conditions; and \$28,403,000 for the no-action alternative.

We choose the staff alternative as the preferred alternative because: (1) the project would provide a dependable source of electrical energy for the region (476,833 megawatt-hours annually); (2) the project may save the equivalent amount of fossil-fueled generation and capacity, thereby continuing to help conserve non-renewable energy resources and reduce atmospheric pollution; (3) the recommended environmental measures proposed by South Feather, as modified by staff, would adequately protect and enhance environmental resources affected by the project. The overall benefits of the staff alternative would be worth the cost of the proposed and recommended environmental measures.

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