Hydropower Project License Summary

ALLISON CREEK, ALASKA

ALLISON CREEK HYDROELECTRIC PROJECT (P-13124)

Photo: Copper Valley Electric Association

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Hydropower Reform Coalition

And

River Management Society

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DESCRIPTION:
Allison Creek hydroelectric project is located on the Allison Creek near the city of Valdez, Alaska and was constructed in 2016. The project cost $55 million as of August 2016. The project is operated in a run-of-river mode and creates a bypass of about 7,500 feet of Allison Creek.

A. SUMMARY

1. License application filed: August 30, 2011
2. License issued: August 1, 2013
3. License expiration: July 31, 2063
4. Capacity: 6.5 MW
5. Waterway: Allison Creek
6. Licensee: Copper Valley Electric Association, Inc.
7. Licensee contact: Copper Valley Electric Association (CVEA)
   PO Box 45
   Glennallen, AK 99588-0045
8. Project website: http://allisoncreekhydro.cveahydro.org/
9. Project area: Allison Creek basin is located within the coastal Chugach Mountain Range, which intercepts moisture from the Gulf of Alaska and hosts numerous glaciers as a result of heavy, wet snows. The basin is approximately 6 miles in length and up to approximately 1.4 miles wide, and includes Allison Lake which is the headwater of Allison Creek. Allison Lake has a surface area of 247 acres and is located at an elevation of 1,364 feet above mean sea level. Allison Creek flows approximately 2.3 miles northward from the outlet of Allison Lake down to tidewater at Port Valdez.
10. Project facilities: This yet to be construct lake tap hydroelectric project will consist of:
    - a 16-foot-high, 130-footwide diversion structure with an integrated spillway located about 1.9 miles upstream of the mouth of Allison Creek and 2,350 feet downstream from the outlet of Allison Lake;
    - a screened intake at the spillway conveying flows to the powerhouse;
    - a 42-inch-diameter, 500-foot-long buried and 7,200-foot-long above-ground steel penstock;
    - a powerhouse containing a single 6.5 MW Pelton turbine generator unit (although the original license contained two Pelton-type, horizontal access turbine generator units, the Copper Valley Electric Association, Inc determined that a single unit would provide satisfactory service while improving project

economics. The licensee requested to amend their license in April 2014 to include only one turbine, which was approved in June 2014)

- a 74.5-foot-long tailrace extending from the north side of the powerhouse to Allison Creek via a concrete channel and the existing creek bed and return flow to Allison creek upstream of a natural anadromous fish passage barrier (per the original license, the tailrace would have been 120-foot-long and extended from the west side of the powerhouse to Allison Creek via a concrete channel and the existing creek bed);
- a 550-foot-long permanent access road to the powerhouse;
- a parking area;
- a 3.8-mile-long, 25kV transmission line interconnecting to an existing substation (the original license had the transmission line at 34.5 kV but was amended in June 2014 to allow for 25kV); and
- supplementary facilities.

B. IMPORTANT PROVISIONS AND REQUIREMENTS IN LICENSE

The license requires the project to operate in a run-of-river mode. There are various license conditions in place to protect natural resources in the area. The license requires CVEA to develop and implement the following plans:

- Biotic Monitoring Plan (Phase I and Phase II)
- Minimum Flow Failsafe Provision Plan
- Operation Compliance Monitoring Plan
- Erosion and Sediment Control Plan
- Storm Water Pollution Prevention Plan
- Construction Water Quality Monitoring Plan
- Blasting Plan
- Fire Protection Plan
- Hazardous Materials Containment/Fuel Storage Plan;
- Spill Prevention, Control, and Containment Plan
- Recreation Management Plan
- Avian Protection Plan
- Scavenger and Waste Management Plan
- Public Safety and Access Plan (Safety Plan)
- Vegetation Management Plan

1. **Instream Flows** [Reference: License Articles 402 and 403]

The license requires CVEA to release a minimum flow of 2 cfs at the diversion dam into the bypassed reach (7,500 ft. of Allison Creek) when the project is operating to protect the aquatic resources in the bypassed reach. The license also requires CVEA to provide seasonal releases at the diversion dam to maintain a 10-cfs minimum flow in the lower bypassed reach from June 16 through October 31, and 8 cfs from November 1 through June 15, when the project is operating to protect the aquatic resources in the bypassed reach. Finally, the licensee is required to maintain a ramping rate of no more than 20 cfs per second per hour in the lower bypassed reach during non-emergency events to protect the aquatic resources. To protect aquatic habitat, licensee will install and maintain two streamflow gages in the bypassed reach, one immediately downstream of the diversion dam and the second at a location immediately upstream of the powerhouse discharge location, and collect and analyze data from the gages to document compliance with minimum flow release and ramping rate requirements.

2. **Biotic Monitoring Plan** [Reference: License Article 407]

During the construction of the project, the license requires CVEA to develop and implement Phase I of a Biotic Monitoring Plan. At least 30 days prior to any ground-disturbing or land-clearing activities, CVEA shall designate a qualified environmental compliance monitor (ECM) to be onsite during project construction. The ECM shall monitor turbidity daily during ground disturbing activities. If turbidity 100 feet downstream of construction areas measures greater than 25 nephelometric turbidity units higher than values obtained upstream of the construction area, then related construction activities shall cease immediately, sediment sources shall be located, and appropriate sediment control measures shall be implemented and monitored for effectiveness. Turbidity data shall be available for inspection upon request by FERC, Alaska Department of Fish and Game (Alaska DFG), and Alyeska Pipeline Service Company.

By July 31, 2014, CVEA is required to file the Phase II of the Plan and implement Phase II after the start of project operation, for up to the first five years. The plan shall include, but not be limited to:

- a sampling protocol and schedule to detail the effectiveness of project operations in preventing fish stranding and maintaining aquatic habitat connectivity by documenting fish presence/absence downstream of the barrier falls in the project bypassed reach both during the summer after ice-breakup and runoff and in the fall;
- triggers that will result in the termination of monitoring prior to the fifth year after the start of project operations; and
- provisions for filing an annual monitoring report, developed in consultation with the agencies consulted in the development of the plan, that summarizes the previous year's results and any measures proposed to minimize fish stranding or enhance habitat connectivity.

3. Water Quality- Erosion and Sediment Control [Reference: License Article 304] The Alaska Department of Environmental Conservation waived the water quality certification for this project, which is typically required for all hydroelectric projects. However, to protect water quality, the license requires Cooper Valley to develop and implement Erosion and Sediment Control Plan (ESCP), use Best Management Practices (BMPs), and develop following plans: a Storm Water Pollution Prevention Plan, a Construction Water Quality Monitoring Plan, and a Blasting Plan.

At least 60 days prior to any land-disturbing activities, the licensee shall submit the Erosion and Sediment Control Plan to FERC's Division of Dam Safety and Inspections Portland Regional Engineer, and develop and include the following:

- Storm Water Pollution Prevention Plan,
- Fire Protection Plan; a Hazardous Materials Containment/Fuel Storage Plan, and
- Spill Prevention, Control, and Containment Plan

The ESCP shall also include provisions for: notifying Alaska Department of Fish and Game (Alaska DFG) 10 days prior to any diversion of flows during construction; constructing at the diversion site during low water periods; and locating clearings and roads 100 feet from the high water mark of Allison Creek.

The plan shall be developed after consultation with U.S. Fish and Wildlife Service, Alaska DFG, National Marine Fisheries Service, and Alyeska Pipeline Service Company. The licensee may not begin any land-disturbing activities until the Portland Regional Engineer has reviewed and commented on the plans, determined that all preconstruction requirements have been satisfied, and authorized start of construction.

4. Recreation Resources [Reference: License Articles 305, 416 and 471] Cooper Valley will implement a Recreation Management Plan to enhance existing recreation opportunities. The Plan will include an interpretive display near the Valdez Civic Center. To minimize the effects of construction on recreation users, the license requires Cooper Valley to conduct construction-related activities away from developed recreation sites as much as possible, particularly along Dayville Road, schedule project-related construction traffic to avoid peak times of recreational use, minimize helicopter use to the extent practicable, and use flight paths and staging areas that are least disruptive to recreational users. To minimize visual effects of construction and reduce the visibility of project facilities from nearby public roads and recreation sites, and from the city of Valdez, the license requires Cooper Valley to avoid the use of reflective materials and highly contrasting colors in the finished appearance of the penstock and powerhouse, and use natural materials (such as the use of vegetative screening around the powerhouse) and colors that blend with the natural environment.

5. **Vegetation Management** [Reference: License Article 410]

The license requires Cooper Valley to file a Vegetation Management Plan by November 1, 2013 that includes wetland protection measures. The plan shall include provisions to

- manage noxious weeds and invasive species;
- use native seeds and plants in areas to be revegetated;
- monitor the revegetated areas to ensure success of the revegetation efforts, with measures to address invasive species and noxious weeds should they be found; and
- follow an implementation and monitoring schedule.
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6. **Aviation Protection** [Reference: License Articles 411 and 412]

The license requires CVEA to file an Aviation Protection Plan by November 1, 2013 to be prepared in consultation with US Fish and Wildlife Service, and Alaska Department of Fish and Game. The Plan shall include provisions to

- restrict vegetation clearing from May 1 through July 15 to protect migratory birds;
- avoid project activities within 660 feet of active bald eagle nests; and
- limit activities, blasting, and helicopter traffic from April 10 through August 10 in the vicinity of known bald eagle nests.

CVEA is also required to revise its Avian Protection Plan to include designing and constructing the transmission line to:

- address the most current Avian Power Line Interaction Committee standards; survey for harlequin duck nests prior to construction-related activities;
- develop and implement a Bear Safety, Scavenger, and Waste Management Plan;
- maintain a 1,500-foot vertical or horizontal clearance from observed mountain goats when using helicopters; and
- develop and implement a Penstock Location and Grade Plan with provisions for wildlife movement under the project penstock.

Harlequin ducks, a species of concern under the Migratory Bird Treaty Act, have been observed in the project area, which contains high quality or essential habitat for the harlequin duck—breeding activity in the area has not been confirmed, however. In the EA, staff recommended that licensee conduct a survey for harlequin duck nests prior to construction, specifically in the location of the diversion structure and the 500-foot long buried segment of the penstock, and avoid the active nests during the construction of the diversion structure and penstock.

Prior to construction of the diversion structure and the 500-foot-long buried segment of the penstock, the licensee shall conduct a survey for harlequin duck nests on the lands to be cleared for these structures, and avoid disturbance of any active nests during the nesting period (mid-June to mid-August). If active harlequin duck nests are found during the survey, the licensee shall flag the nests and avoid the areas during the nesting period.

The survey shall be conducted after consultation with U.S. Fish and Wildlife Service and Alaska DFG on the methods for surveying and avoiding the active nests.

7. **Bear Safety, Scavenger, and Waste Management** [Reference: License Article 413]

By November 1, 2013, Cooper Valley is required to file for FERC approval, a Bear Safety, Scavenger, and Waste Management Plan. The Scavenger and Waste Management Plan will reduce the risk of attracting scavengers and other wildlife to the project site. This Plan would include regulations prohibiting construction workers from feeding wildlife, modern garbage-handling procedures, and a training program for contractor personnel. This plan would also include the following provisions for bear safety:

- Measures for project operations when bears are present to minimize possible conflict;
- Measures to minimize encounters and avoid areas frequented by bears;
- Measures for keeping construction sites and refuse areas clean of substances that attract bears;
- Installation of bear-resistant garbage receptacles and other measures during construction;
- Procedures to deal with problem bears; and
- Alaska Department of Fish and Game (Alaska DFG) notification in the event of any bear-human conflicts.

To protect mountain goats during project construction, operation, and maintenance, the licensee shall minimize helicopter disturbance by maintaining a 1,500-foot vertical or horizontal clearance from observed mountain goats when in the project area.

C. MAP

There are two convenient ways to become familiar with this project on the Hydropower Reform Coalition website, www.hydroreform.org.

- Go directly to the project page

- To understand the geographical context of the project, visit the *On Your River* section of the site. This link will take you to the section for rivers in Alaska. Zoom in to the city of Valdez, north of Cordova. Allison Creek is the project south of Port Valdez.

- See the full list of published hydropower license and settlement summaries here.