STATE OF ALASKA

DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF WATER
WASTEWATER DISCHARGE AUTHORIZATION PROGRAMS

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June 3, 2011

Kristen DuBois
Environmental Officer
Golden Valley Electric Association, Inc.
P.O. Box 71249
Fairbanks, AK 99707-1249

ADEC File No.: 103.48.001

Certified Mail No.: 7003 1680 0004 2906 2507
Receipt Requested

RE: ADEC § 401 Certification of NPDES Permit AK0022942 Healy Power Plant

Dear Ms. DuBois,

On October 13, 2009, the Alaska Department of Environmental Conservation (ADEC or department) received a copy of the proposed final National Pollutant Discharge Elimination System (NPDES) permit and response to comments for the Healy Power plant permit from the United States Environmental Protection Agency (EPA) and a request for final certification of the NPDES permit. ADEC reviewed the proposed final permit and the comments received during the public notice period beginning on May 22, 2009 and determined that changes to the draft certificate were required. These changes required that there be another public notice of the tentative determination to certify the AK0022942 NPDES permit, which occurred December 16, 2011 through January 18, 2011.

In accordance with § 401 of the Clean Water Act, as well as Alaska Administrative Code (AAC) 18 AAC 15 (Administrative Procedures), 18 AAC 70 (Water Quality Standards), and 18 AAC 72 (Wastewater Discharges), ADEC has prepared the enclosed final Certificate of Reasonable Assurance for NPDES Permit AK0022942.
The department has both an informal review process and a formal administrative appeal process for final permit decisions. An informal review request must be delivered within 15 days after receiving the department's decision to the Director of Water at the following address:

Director of Water
Alaska Department of Environmental Conservation
555 Cordova Street
Anchorage, AK 99501

Interested persons can review 18 AAC 15.185 for the procedures and substantive requirements regarding a request for an informal department review. See http://www.dec.state.ak.us/commish/ReviewGuidance.htm for information regarding appeals of department decisions.

An adjudicatory hearing request must be delivered to the Commissioner of the department within 30 days of the permit decision or a decision issued under the informal review process, whichever is later. An adjudicatory hearing will be conducted by an administrative law judge in the Office of Administrative Hearings within the Department of Administration. A written request for an adjudicatory hearing shall be delivered to the Commissioner at the following address:
Commissioner

Alaska Department of Environmental Conservation
410 Willoughby Avenue, Suite 303
Juneau, AK 99811-1800

Interested persons can review 18 AAC 15.200 for the procedures and substantive requirements regarding a request for an adjudicatory hearing. See http://www.dec.state.ak.us/commish/ReviewGuidance.htm for information regarding appeals of department decisions.
Be advised, pursuant to 18 AAC 15.120(c), the final certification of the NPDES permit constitutes the permit required under AS 46.03.100. Also, 18 AAC 15.120(c) states, "Any rights or privileges inuring to the benefit of EPA in the NPDES permit, including any right to enter, inspect, sample, and have access to records, also inure to the benefit of the department. Any reports or other information filed with EPA in accordance with the NPDES permit must be contemporaneously filed with the department."
If you have any questions regarding this draft certificate of reasonable assurance, please contact Shawn Stokes at (907) 269-7504 or at shawn.stokes@alaska.gov.

Sincerely,

Sharon Morgan

Sharon Morgan
Program Manager

Enclosures: Draft Certificate of Reasonable Assurance for NPDES Permit AK0022942

cc: Cindi Godsey, EPA/Anchorage
Shawn Stokes, ADEC/Anchorage

STATE OF ALASKA
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
CERTIFICATE OF REASONABLE ASSURANCE

A certificate of reasonable assurance that the National Pollutant Discharge Elimination System (NPDES) permit AK0022942 for the Healy Power Plant will comply with the applicable provisions of § 401 of the Clean Water Act has been requested for the Golden Valley Electric Association, Inc. by the United States Environmental Protection Agency (EPA).

Pursuant to § 401 of the Clean Water Act, state certification is required for any permit issued by a federal agency that may result in a discharge into the navigable waters of the U.S. The NPDES permit for the Healy Power Plant will authorize discharges into the Nenana River, a navigable water of the U.S.

Public Notice of the certification was made in accordance with 18 AAC 15.140.

The Alaska Department of Environmental Conservation (ADEC or department) reviewed the permit application and the NPDES permit and, in accordance with the ADEC *Interim Antidegradation Implementation Methods* (July 2010), finds the reduction in water quality to be in compliance with the state's antidegradation policy as found in 18 AAC 70.015. The antidegradation analysis is included as Appendix A to the certificate.

Having reviewed the permit and conducted an antidegradation analysis, ADEC certifies there is reasonable assurance the activity and the resultant discharge is in compliance with the requirements of § 401 of the Clean Water Act and the Alaska Water Quality Standards (18 AAC 70) provided that the terms and conditions of the final certificate are included as conditions in the NPDES permit.

In accordance with 18 AAC 15.120, the certified NPDES permit constitutes the permit required under AS 46.03.100.

State of Alaska Certification Stipulations:

1. ADEC is authorizing a mixing zone for temperature from the discharges from Outfall 001 and Outfall 002. The mixing zone shall be 1000 feet in length, starting at the point of discharge from Outfall 001, the furthest upstream outfall, and ending downstream of Outfall 002. The mixing zone shall be 100 feet in width measured from the east bank of the Nenana River, and shall be from the bottom of the receiving water to the water surface. Within the authorized mixing zone, the water quality criteria for temperature may be exceeded. All water quality criteria shall be met at the boundary of the mixing zone.

   Outfall 001 (upstream outfall): Latitude: 63° 51' 22.7" North, Longitude: -148° 57' 08.2" West
   Outfall 002 (downstream outfall): Latitude: 63° 51' 25.6" North, Longitude: -148° 57' 02.4" West

   Rationale: In accordance with State Regulation 18AAC 70.240 as amended through June 26, 2003, the department will, in its discretion, authorize a mixing zone in a discharge permit if the department finds that the available evidence reasonably demonstrates that

   a. *The applicable requirements of the chapter will be met*
   b. *The mixing zone will be as small as practicable*
   c. *An effluent or substance will be treated to remove, reduce, and disperse pollutants, using methods found by the department to be the most effective and technologically and economically feasible, consistent with the highest statutory and regulatory requirements.*
   d. *Ongoing compliance with 18 AAC 70.240 – 18 AAC 70.270 is a condition of any permit authorizing a mixing zone.*

The Healy Power Plant facility is comprised of two units, Healy Unit #1 and the Healy Clean Coal Project (HCCP). Outfall 001 and Outfall 002 discharge the combined condenser cooling water from both units. Outfall 001 is generally used to ensure that the intakes on the Nenana River are ice free during the winter, but Outfall 001 is also utilized for other operational conditions at the facility. It is appropriate that one mixing zone be authorized for the combined discharges of Healy Unit #1 and HCCP through either outfall.

18 AAC 70.245 provides the regulatory basis for the appropriateness and size determination of a mixing zone. In accordance with this section, the department considered modeling scenarios produced by CORMIX modeling software that used discharge monitoring report data, receiving water data, and other information provided by the facility to model the mixing characteristics of the receiving water. The department also considered the Final Thermal Discharge Impact Analysis (January 1993) prepared by Stone & Webster Engineering Corporation for the Alaska Industrial Development and Export Authority (AIDEA) HCCP. After reviewing available information, the department has determined that a 1000 foot by 100 foot mixing zone complies with the regulatory requirements of 18 AAC 70.240-270, as amended through June 26, 2003. The mixing zone size will be the same size as previously authorized in the NPDES permit issued in March of 2000. See figure 1 for a graphical representation of the two outfall locations and the approximate mixing zone boundary.

2. The permittee shall establish at least 2 monitoring points to determine the temperature of the receiving water. The instantaneous temperature of the receiving water shall be recorded at least once per week for two calendar years between May 1 and October 31. If monitoring for temperature is not practical or safe due to ice conditions of the receiving water or river's edge, monitoring is waived until monitoring can be performed safely. Ice conditions shall be indicated on the discharge monitoring report. If there are no exceedances of the water quality criteria for temperature during this two-year period, the permittee may submit a request to reduce the monitoring frequency to semi-monthly.

   Monitoring at these stations shall occur on the same day:

   a. Station 1 shall be at a point representative of the receiving water temperature prior to the influences of any Healy Power Plant discharges.

   b. Station 2 shall be at a point approximately 1000 feet downstream of Outfall 001, near or at the outside boundary of the mixing zone, and shall not be more than 100 feet laterally from the east bank of the Nenana River.

   The permittee will determine the coordinates of all monitoring stations by Global Positioning System and provide these coordinates to ADEC with the first discharge monitoring report after receiving water monitoring has occurred.

   Rationale: In accordance with State Regulations 18 AAC 70.245, the department has authority to ensure that existing uses of the waterbody outside the mixing zone are maintained and fully protected. The monitoring will provide data to the department that the mixing zone size is appropriate and that the most stringent water quality criteria limitation for temperature, as found at 18 AAC 70.20(b)(10), is being met at the boundary of the mixing zone.

3. The temperature at station 2 shall not exceed 15° C.

   Rationale: In accordance with AS 46.03.110(d), the department may specify in a permit the terms and conditions under which waste material may be disposed of. Also, in accordance with State Regulations 18 AAC 70.245, the department has authority to ensure that existing uses of the waterbody outside the mixing zone are maintained and fully protected. This limit will ensure that the most stringent water quality standard limitation for Temperature, 18 AAC 70.20(b)(10), is being met outside of the mixing zone boundary.

4. The end of pipe instantaneous effluent maximum temperature from Outfall 001 and Outfall 002 shall not exceed 32° C for more than 10 minutes in a calendar month.

Rationale: In accordance with AS 46.01.110(d), the department may specify in a permit the terms and conditions under which waste material may be disposed of. Also, in accordance with State regulations 18 AAC 70.245, the department has authority to ensure that existing uses of the waterbody outside the mixing zone are maintained and fully protected. This limit will ensure that the temperature in the authorized mixing zone will still be consistent with the modeling scenarios conducted and will prevent excessive temperatures in the receiving water and mixing zone.

June 3, 2011
Date

Sharon Morgan
Program Manager

APPENDIX A
ANTIDEGRADATION ANALYSIS OF THE CERTIFICATE OF REASONABLE ASSURANCE FOR NPDES PERMIT AK0022942

The Antidegradation Policy of the Alaska Water Quality Standards (18 AAC 70.015) states that the existing water uses and the level of water quality necessary to protect existing uses must be maintained and protected. This appendix analyzes and provides rationale for the department's decisions in its § 401 Certification with respect to the antidegradation policy.

The department's approach to implementing the antidegradation policy found in 18 AAC 70.015 is based on the requirements in 18 AAC 70 and the department's July 14, 2010, Policy and Procedure guidance for *Interim Antidegradation Implementation Methods*. Using these requirements and policies, the department determines whether a waterbody or portion of a waterbody is classified as Tier 1, Tier 2, or Tier 3. This determination is made on a pollutant-by-pollutant basis. Using this guidance the receiving water, the Nenana River, has been classified as Tier 2 water. For a Tier 2 water in the context of reissuing a permit such as this, antidegradation analysis under 18 AAC 70.015(a)(2) is applied to permit limits that were relaxed or others which the department concludes should be subjected to antidegradation analysis. In the case of this permit, the parameter of concern is temperature.

The department may allow reduction of water quality only after finding that five specific criteria are met. These criteria and the department's findings are as follows:

- **18 AAC 70.015 (a)(2)(A).** Allowing lower water quality is necessary to accommodate important economic or social development in the area where the water is located.

  The Healy Power Plant is a coal-fired electric generating facility. This is a plant that supplies power 24 hours per day seven days per week. Fifteen percent of the power to the rail belt area, including power provided to communities as far away as Delta, comes from the Healy plant. The plant currently employs 35 fulltime employees and has the potential to add 20 more employees. It is the second largest year-round employer in the Healy area.

  The department concludes that the operation and authorization of the Healy Power Plant discharge accommodates the important economic and social development of the area and the neighboring community of Healy and that the criterion is met.

- **18 AAC 70.015 (a)(2)(B).** Except as allowed under this subsection, reducing water quality will not violate the applicable criteria of 18 AAC 70.020 or 18 AAC 70.235 or the whole effluent toxicity limit in 18 AAC 70.030.

  The final permit limits will not violate Alaska water quality criteria. The mixing zone is authorized in accordance with 18 AAC 70.240. The authorized mixing zone has been sized to ensure that all applicable water quality criteria are met at all points outside of the mixing zone. The department concludes that the criterion is met.

- **18 AAC 70.015(a)(2)(C).** The resulting water quality will be adequate to fully protect existing uses of the water.

  The current Healy Power Plant has had an effluent discharge permitted by EPA and the department since 1995. The facility has met the department's requirements for engineering plan review under 18 AAC 72. The Healy community has also accepted the discharge since the facility was initially constructed. The permit reissuance application does not propose any changes that would likely result in wastewater effluent of lower quality than has been discharged under the 2000 NPDES permit. The Healy Power Plant facility has consistently discharged effluent that met the Water Quality Standards, at the boundary

of the mixing zone, for designated uses. The department concludes that the resulting water quality will be adequate to fully protect existing uses and that the criterion is met.

- **18 AAC 70.015(a)(2)(D).** The methods of pollution prevention, control, and treatment found by the department to be most effective and reasonable will be applied to all wastes and other substances to be discharged.

  The methods of prevention, control, and treatment the department finds to be most effective and reasonable are currently in use at the facility and include meeting the effluent limit guidelines for steam electric point source category that are contained in 40 CFR Part 423. The facility has a Quality Assurance Project Plan and is required to update the plan within 90 days of the effective date of the permit. The department determines that this criterion is met.

- **18 AAC 70.015(a)(2)(E).** All wastes and other substances discharged will be treated and controlled to achieve (i) for new and existing point sources, the highest statutory and regulatory requirements; and (ii) for nonpoint sources, all cost-effective and reasonable best management practices.

  After review of the applicable statutory and regulatory requirements, including the Clean Water Act, 18 AAC 70, and 18 AAC 72, the department finds that the discharge from the existing point source meets the highest applicable statutory and regulatory requirements. The facility has a Best Management Plan (BMP) which is required to be updated within 90 days of the effective date of the permit. The BMP must comply with all conditions required by the permit. The department concludes that the criterion is met.

Figure 1

Healy Power Plant Outfalls & Mixing Zone

For general informational purposes only
(Datum NAD83)

Date Prepared
11-1-2010