

**Golden Valley Electric Association (GVEA)
Healy Clean Coal Plant (HCCP)**

**Issue Statement: Does a Prevention of Significant Deterioration (PSD) Review
Apply to the Restart of the HCCP?**

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Reason for Analysis:

On January 16, 2009, GVEA notified the Alaska Department of Environmental Conservation (ADEC) and the U.S. Environmental Protection Agency that they had negotiated terms with the Alaska Industrial Development and Export Agency (AIDEA) to transfer ownership of the HCCP (a waste coal-fired boiler) from AIDEA to GVEA. In the notification, GVEA indicated that Operating Permit AQ0173TVP02¹ authorizes GVEA to operate HCCP, and that they intended to finally begin operations as soon as they checked out all the systems at the plant.

ADEC issued a PSD permit for construction and operation of HCCP in 1993 and revised the permit in 1994. The unit operated briefly for testing purposes starting in early 1998 through late 1999 or early 2000. As of August 2009 the unit has been in warm shutdown for just over nine years. A more detailed chronology of event is provided below.

On May 26, 2009, GVEA sent a letter to ADEC requesting a determination that PSD is **not** applicable to startup of the HCCP.

This document summarizes pertinent project history and applicable law so as to frame this issue, in order for ADEC to make a PSD applicability decision.

Stationary Source Description:

The Healy Power Plant is a not-for-profit electric power generating stationary source located in Healy, Alaska. It is within six miles of Denali National park (a Class I area) and about 100 miles from a soon to be designated PM-2.5 nonattainment area located in Fairbanks Alaska.

The Healy Power Plant is operated by GVEA. GVEA is the owner and the operator of Unit 1 and the operator of HCCP. Unit 1 is a 25 MegaWatt (MW) coal-fired steam boiler, and HCCP is a 50 MW waste coal fired boiler. In addition to the boilers, the stationary source also contains two

¹ This is a typo, as they are operating under AQ0173TVP01, Rev 2, under an application shield.

Cleaver Brooks standby building heaters and one standby diesel generator, a crusher system, a limestone silo with baghouse venting to atmosphere, a trona handling system with baghouse, a fly ash silo with baghouse venting to atmosphere, and a coal handling system.

Chronology of Events:

The following is the chronology of events related to the HCCP as explained by GVEA in its letter to ADEC dated May 26, 2009. Some of these incidents have not been independently verified, but are presumed to be accurate. Those unverified statements are noted as such below.

- December 1991 AIDEA and GVEA enter into a Power Sales Agreement (PSA), under which GVEA agrees to be operator of HCCP and to purchase all power from HCCP for 35 years once the plant achieves “commercial operations”. The PSA required a 90 day reliability test before January 1, 2000.
- March 10, 1993 ADEC issues PSD Air Quality Control (AQC) Permit-to-Operate 9231-AA007. In this permit, ADEC determines that HCCP’s entrained combustion system is Best Available Control Technology (BACT) for Oxides of Nitrogen (NO_x) and installed Sulfur Dioxide (SO₂) controls were BACT for SO₂ for the HCCP.
- May 12, 1994 ADEC issues revised PSD AQC Permit-to-Operate 9431-AA001, which incorporates conditions of a Memorandum of Agreement (MOA) with US Department of Interior/National Park Service (NPS), Department of Energy (DOE), GVEA, and AIDEA.
- January 1998 GVEA commences operations of HCCP. The unit reached full load for the first time in March of 1998. [UNVERIFIED]
- March 1998 In March of 1998, AIDEA notifies GVEA that it did not intend to conduct or evaluate 90-day performance testing of the HCCP in such a way as to meet all requirements of PSA (and other agreements between parties). [UNVERIFIED]
- May 1998 GVEA files suit against AIDEA seeking a court declaration of what PSA contract requires. [UNVERIFIED]
- August 17, 1999 HCCP operates for 90 consecutive days (ending on November 15, 1999).
- Late 1999 An independent engineering firm’s evaluation of 90-day performance test indicates exceedances of short term sulfur dioxide (SO₂) emission limits and opacity requirements during startup, shutdown, and equipment repairs, The firm also concludes that HCCP had not met all criteria required to pass PSA’s 90 day test for commercial operations.
- December 30, 1999 GVEA notifies AIDEA of its intent to terminate the PSA at midnight on December 31, 1999.
- March 8, 2000 May 1998 suit settled under a Settlement Agreement effective March 8, 2000. This Agreement provides for an Interim Shutdown Period during which the plant will be temporarily shutdown while GVEA considers full retrofit to conventional coal burning or a limited retrofit (improvement to

	clean coal technology). The agreement provided that the Shutdown Period would expire on the earlier of
	<ul style="list-style-type: none">● GVEA's election to proceed with Retrofit work; or● GVEA's election to abandon efforts to obtain authorization to pursue Full Retrofit; or● One year from the Turnover Date.
April 7, 2000	Interim Shutdown Period begins. [DATE UNVERIFIED.] GVEA begins discussion with Department to determine regulatory requirements for plant retrofit to more conventional technology. Discussions continued beyond expiration of one year period.
September 10, 2001	GVEA requests an administrative amendment of the Title V permit to allow a retrofit of the HCCP to replace the clean coal technology with low NO _x burners.
April 11, 2002	Department denies the request for the administrative changes (to the Title V permit) to allow a retrofit. Department "unable to conclude that the proposed retrofit technology constitutes "equivalent" equipment under the regulations."
April 2, 2003	GVEA formally terminates the PSA in April 2003.
April 2003	For a few months subsequent to PSA termination, GVEA continues to explore the possibility of a full retrofit of the HCCP and suggests to AIDEA the possibility of purchase of HCCP. [UNVERIFIED]
June 28, 2004	AIDEA notifies Department that AIDEA intended to act to "preserve its ability transfer the HCCP from GVEA to AIDEA (or a third party) and to pursue the continued operation of the HCCP with a limited retrofit of the clean coal technology."
June 2004	Subsequent to the June 28, 2004 letter, AIDEA and GVEA began negotiations for an amended ground lease to allow AIDEA to operate HCCP, as provided in the Settlement Agreement. [UNVERIFIED.]
November 2005	While negotiating with GVEA for an amended ground lease, AIDEA sued GVEA to seek a court order requiring a ground lease and other agreements allegedly necessary for it to operate the unit. [UNVERIFIED.]
March 2006	<i>HCCP Condition Assessment and Restart Study – HCCP/Unit 1 Independent Operations</i> report prepared by Shaw, Stone & Webster (SSW) indicates that in 1999 "GVEA was contracted to perform plant maintenance to maintain HCCP in a standby condition and to prevent significant system and equipment deterioration." In the report, SSW concludes that <ul style="list-style-type: none">● HCCP is in good condition and has incurred since 1999 no significant deterioration during the shutdown.● If recommendations for remediation and system separation are implemented, SSW knows of no reason why HCCP cannot be operated separately from Unit 1 in a safe and reliable manner for the duration of its design life provided industry standard operation and maintenance activities are performed.

The report includes a list of high priority tasks (required prior to restart) and low priority tasks (may occur prior to restart but can occur later if at all.)

January 16, 2009 After years of discovery and mediation, the November 2005 litigation is stayed by AIDEA and GVEA by mutual agreement in January 2009. Under a settlement, GVEA has agreed to purchase HCCP and now intends to operate it as permitted, without a retrofit.

May 26, 2009 GVEA submits a letter to ADEC requesting a determination by Department that PSD is not applicable to startup of the HCCP. In the letter, GVEA estimates that costs of \$1.125 million to \$1.275 million would be incurred in bringing the HCCP into operation. GVEA estimates that the work would require seven to ten months to complete. GVEA also provide considerably higher estimates for additional work to conduct routine maintenance, safety reviews, evaluations, updates, and any necessary repairs and maintenance.

Legal Analysis:

The unusual factual scenario presented by the chronology of events outlined above comes down to this: the actual start-up of the HCCP has been delayed for several years by protracted disagreement and litigation between the two partners in the venture, GVEA and AIDEA. The various positions taken by those two parties over the years can make the history of the stationary source complicated, but the collective intent of the two partners has always been to eventually operate the plant. Given the original cost of constructing the plant, to abandon the intent to ever operate it would forfeit a considerable investment and defy common sense. ADEC does not believe that either AIDEA or GVEA has ever abandoned the intent to operate the plant. The delays in start-up are due instead to a difficult business negotiation between the parties over the arrangements for the plant's ownership and operation.

Governing Law:

Given this factual back-ground, the issue before ADEC is whether the long-delayed start-up of the HCCP triggers the requirement for a new PSD permit. The governing state regulation is 18 AAC 50.306². That regulation incorporates by reference the requirements of a federal regulation, 40 CFR 52.21. Some of the relevant state definitions also incorporate definitions from another federal regulation, 40 CFR 51.166. Thus, most of the legal analysis required to answer

² The governing statutes are AS 46.14.120 and .130.

the issue before ADEC involves the terms and definitions contained in those two federal regulations, which, incidentally, contain many parallel provisions.³

Of course, HCCP has already received a PSD permit, back in 1993. That permit, as subsequently revised, remains in effect today. So the question is whether now starting up this permitted but long-dormant plant triggers a second PSD permitting requirement. Under the regulatory terms, the question is whether the proposed plant start-up should be treated and permitted as a “major modification” of this stationary source. See 18 AAC 50.306(a); 18 AAC 50.990(53)(A); and 40 CFR 51.166(b)(2).

There are two prongs to the definition of a “major modification”: it can take the form of either a physical change in the stationary source, or a change in the method of operation of the source. If the start-up of HCCP qualifies as either (or both) of these two things, and also results in a significant net emissions increase, then it is a major modification triggering PSD. Deciding whether the plant start-up results in a significant net emissions increase also requires determining what the base-line emission level is, to compare any increase to; that issue is dealt with below.

Finally, some changes in a stationary source are exempted from the definition of a major modification. For our purposes, the two important exemptions are: (1) for “routine maintenance, repair and replacement” (RMRR) of a source; and (2) for an increase in the hours of operation of the source, if not prohibited by a federally-enforceable permit condition. The RMRR exemption would apply to a physical change in the source, while the ‘increase in hours’ exemption would apply to a change in method of operation of the source. Those exemptions, and their applicability to HCCP, are discussed in turn below.

Major Modification Type 1: Physical Change in the Source.

The work GVEA proposes to do at the plant to start it up is summarized in Ex. 15 to their May 26, 2009 letter. GVEA updated Exhibit 15 on August 12, 2009 and August 17, 2009 to provide information on the nature, extent, purpose, frequency, and cost of each activity proposed at the plant. The work includes physical changes to the source, which GVEA claims fall within the RMRR exemption. But before we reach the RMRR question, there is a threshold consideration: would any of the physical changes that GVEA proposes actually result in an increase in emissions from HCCP? It does not appear that the changes would result in increased emissions over what

³ 40 CFR 51.166 spells out the PSD requirements for SIPs, while 40 CFR 52.21 includes largely equivalent elements for how EPA will administer the PSD program if a SIP is disapproved.

HCCP would have been emitting had it been operating. None of the physical work that GVEA proposes to do appears to constitute “debottlenecking” (i.e.: resulting in an increase in utilization of other units as a result of the project). Any expected increase in emissions will really be caused not by the physical plant work itself, but rather by the commencement of plant operations, which is analyzed below under the ‘change in method of operations’ prong of the major modification definition.

Whether the proposed physical changes would also fall within the RMRR exemption is difficult to determine, in part because the regulatory criteria governing that provision have been stayed by court order. See Note to 40 CFR 51.166(b)(2)(iii)(A). If those criteria, found at 40 CFR 51.166(y), were in effect, then the work proposed by GVEA would appear to qualify as RMRR. In the absence of this rule the Department must make the determination of whether the activities proposed are RMRR on a case-by-case basis, using its best professional judgment. Based on EPA guidance (WEPCO, September 9, 1988 and TVA September 15, 2000) the Department considered the nature, extent, purpose, frequency, and cost of each proposed activity as provided in GVEA’s August 17, 2009 Response to ADEC Request for Further Analysis.

The proposed activities at HCCP are divided into three categories. Category 1 includes all of the proposed changes that are not related to operations that produce air emissions. Examples include installation of ladders and access platforms, flushing the firewater system, and changing the filters in the waste treatment system. Category 2 includes all of the proposed changes that are the type of routine, ongoing maintenance and repair activities that occur at most utilities, and which would have occurred at HCCP in an operational status at appropriate frequencies for that activity regardless of whether related to a system that may produce emissions. Examples include tightening bolts, lubricating moving parts, and repairing worn or damaged equipment. Some of the activities listed include repairs of systems that were damaged by a coal explosion that occurred in 1999. Because these activities listed in Categories 1 and 2 so clearly have no effect on emissions, the Department did not review the activities in this category with regard to RMRR.

Category 3 consists of activities that are or may be related to systems that produce emissions. Although (as stated previously) the Department believes that there are no emissions increases due to these activities, we reviewed the nature, extent, purpose, frequency, and cost of each item to assess whether they are truly RMRR. The Department first considered cost. HCCPs annual maintenance costs are \$14 million. With the exception of the replacement of mill exhausters fans (\$2,000,000) and the investigation of a coal fines bypass system (\$2,500,000), most of the

activities listed in Category 3 are RMRR simply based on cost. The Department looked at replacement of mill exhauster fans and the investigation of a coal fines bypass system, items more closely.

Replacement of Mill Exhauster Fan: The mill exhauster fan blades and scrolls eroded faster than expected due to high ash content as abrasive properties of the Usibelli coal. The purpose of this task is to evaluate installation of a new mill exhauster fan lined with a more abrasion resistant material. GVEA expects future fan replacements to be less frequent due to use of a more robust fan material and burning of better quality coal, along with ability to control fan speed.

Department analysis of Replacement of Mill Exhauster Fan: The Department finds the replacement of the Mill Exhauster Fan to be RMRR based on purpose. The objective of this task is to prolong the life of the fan. Any plant in operation would continually seek to reduce costs by using components that will last longer. However, this replacement will not eliminate the need for future replacements. This replacement will not affect plant performance or extend the life of the plant.

Investigate Coal Fines Bypass System: Usibelli Coal Mine (UCM) produces large volumes of coal fines as a result of crushing coal. HCCP and Unit #1 are the only power plants capable of using UCM fines as a fuel, based on the types of fuel combustion systems at each plant. Currently, all fines processed into the coal handling system must enter and pass through the primary and secondary crushers. This task will investigate options for bypassing the crushers and transport coal fines directly onto the conveyor belts that feed both Unit #1 and HCCP silos. This will reduce handling costs and handling activities and should reduce dust emissions. This type of analysis is the type of investigation regularly conducted by GVEA and other utilities into was to minimize operational costs. The specific purpose of this investigation is to determine ways to reduce the amount of time to load fuel and minimize labor costs in doing so.

Department Analysis of Investigation of Coal Fines Bypass System: The Department does **not** find this to be RMRR. However, an investigation is not a physical change. It is a physical change if the investigation results in a different way to bypass the crusher, and GVEA undertakes this activity. A new bypass system does not appear to be RMRR. However, according to GVEA, it “should reduce dust emissions” so the RMRR exemption is not necessary in order to find that this does not fall under the definition of “major modification”.

We have already noted above that **none** of the activities listed by GVEA appear to be physical changes that result in an increase in emissions. As such, the Department is only including this discussion on the RMRR exemption for the sake of providing the most complete analysis possible. The increase in emissions is caused by “turning on” a long dormant plant, which could be considered to be a change in the method of operation. The change in the method of operation to this plant is discussed below.

Major Modification Type 2: Change in Method of Operation.

Starting up the long-dormant HCCP plant seems, on its face, to be a change in the method of operation. But GVEA advances two arguments for why such a change should not be considered a major modification triggering PSD. First, GVEA argues that the baseline emissions level should be calculated by reference to the plant’s potential to emit, rather than its actual past emissions (which are essentially zero), so there is no increase in emissions due to plant start-up. Second, GVEA argues that any emissions increase falls within the ‘increase in hours’ exemption mentioned above. These two arguments are addressed in turn.

A. Baseline Emissions.

In order to be a major modification, a change in an existing stationary source must result in a significant net emissions increase. *See* 40 CFR 52.21(a)(2)(iv)(a). To determine if there is a significant net emissions increase, one compares projected actual emissions to baseline actual emissions. *See* 40 CFR 52.21(a)(2)(iv)(c). For existing units, baseline emissions are usually calculated based on historical emissions levels over a recent 24-month period. *See* 40 CFR 52.21(b)(48). However, because HCCP has never begun normal operations, we don’t have historical data to work from. That makes calculation of baseline emissions levels less straight-forward.

GVEA urges us, first, to extrapolate from the 90-day period of plant operations in 1999 to an annual emissions level representative of baseline emissions. *See* GVEA’s 5/26/09 letter at p. 11. But GVEA itself elected not to take over the HCCP based on the results of the ninety-day test run in 1999. *See* Ex. 9 to GVEA’s 5/26/09 letter. GVEA’s recent claim that that test period does reflect normal operation, and should provide the basis for extrapolated annual emissions, rings hollow given their past decisions regarding this stationary source.

GVEA next argues that if we decide that the ninety-day emissions data do not represent normal operations, then it follows that its baseline emissions should be set at its potential to emit rather

than its actual emissions, citing to 40 CFR 52.21(b)(48)(iii). There are two problems with this argument. First, the approach of using potential to emit to set baseline emissions is for a ‘new’ emissions unit, not an ‘existing’ emissions unit. HCCP seems to fall within the latter definition, since it has existed for more than two years since it first operated (i.e., during the 1999 test period). *See* 40 CFR 51.166(b)(7). Second, even if we were to consider HCCP to be a new emissions unit, the regulation requires us to use zero as the baseline for determining any emissions increase “that will result from the initial construction and operation of such unit.” *See* 40 CFR 52.21(b)(48)(iii) (emphasis added). Since HCCP is only now starting up full, normal operations, the appropriate baseline emissions level to use for purposes of evaluating the net emissions increase is zero.

B. ‘Increase in Hours’ Exemption.

Even if we assume that the baseline emissions should be considered to be zero, for purposes of evaluating the emissions increase that will result from plant start-up, the question remains of whether the increased emissions are exempt from the definition of a major modification under 40 CFR 51.166(b)(2)(iii)(f), or the parallel regulation 40 CFR 52.21(b)(2)(iii)(f). Because the proposed increase in hours of operation is not prohibited by any federally enforceable permit condition, it appears on its face to fall within the scope of this ‘increase in hours’ exemption. But certain EPA documents, referred to collectively as the “reactivation policy,” suggest that this exemption may not be appropriate for a situation like HCCP’s, where a long-dormant stationary source resumes, or in this case begins, operations. A discussion of EPA’s reactivation policy, and whatever bearing it may have on our inquiry, follows.

However, as a threshold matter, it is worth noting that EPA policy documents do not have the force of law, and there is no requirement that ADEC, or anyone else for that matter, follow them. *See, e.g., Appalachian Power Co. v. EPA*, 208 F. 3d 1015 (D.C. Cir. 2005). Our consideration of EPA’s reactivation policy simply serves as an exercise to help guide our understanding and application of the governing regulations themselves.

EPA’s reactivation policy is generally contained in a 1999 decision by the EPA Administrator in the *Monroe Electric* case. In that case, a power company proposed to restart a power plant that had been shut down for 11 years due to market conditions. Louisiana issued the company an operating permit without subjecting the facility to PSD review. A third party petitioned EPA to review the state permit, arguing that PSD was triggered by the re-start of the plant.

EPA first noted that facilities that have been permanently shut down, and are then reactivated, should be permitted as new sources. Whether a stationary source has been permanently shut down “depends on the intention of the owner or operator at the time of shutdown.” See *Monroe at 8*. EPA established a presumption that a shutdown longer than two years was permanent, but it allowed the stationary source owner or operator to rebut that presumption with evidence of their intent to the contrary. *Id.* Having reviewed the history of HCCP, ADEC concludes that despite the long delay in starting normal operations at HCCP, neither GVEA nor AIDEA have ever had the intent of permanently shutting down this new plant. Those parties’ collective efforts both to keep the facility’s permits current, and to maintain the plant in warm shut-down mode, reflect their quite understandable intention to eventually operate HCCP.

The second part of EPA’s *Monroe* analysis applies to stationary sources that have not been permanently shutdown, but simply long left dormant. EPA addressed the same question that faces ADEC with regard to HCCP: does the start-up of such a stationary source constitute a major modification triggering PSD review? In analyzing that question in *Monroe*, EPA considered both of the regulatory exemptions discussed above, the RMRR and ‘increase in hours’ exemptions. In evaluating the applicability of the latter exemption to the restart of a long-dormant facility, EPA gave particular attention to whether the restart “would disturb a prior assessment of the environmental impact of a source.” *Monroe at 12* (citing to the preamble to its 1980 rule-making.) For example, where the inactive source has been omitted from the state’s emissions inventory, restart of that source would be less likely to qualify for the ‘increase in hours’ exemption. *Id.* at 12-13.

EPA concluded that the restart of the Monroe plant was a change in the method of operation that did not qualify for the ‘increase in hours’ exemption, and therefore constituted a major modification. In reaching its conclusion that the exemption didn’t apply to the Monroe restart, EPA relied on two main factors: the plant’s emissions had not been included in the state’s inventory; and the start-up of the plant did not seem like the kind of market-based change in operations that EPA had intended the ‘increase in hours’ exemption to cover.

The first of these two factors is not present in the case of HCCP, as ADEC has continued to include that in the state’s emissions inventory.⁴ But the second factor requires further discussion. In reaching its conclusion about the intended scope of the ‘increase in hours’ exemption, EPA

⁴ Actually, ADEC included HCCP in its 1999 inventory, accidentally omitted it in 2002, and then included it again in 2005.

relied primarily on language in the preamble to the regulation, where it had described the purpose of this exemption as protecting “the ability of a company to take advantage of favorable market conditions” by increasing its hours of operation or rate of production. *Monroe at 11-12*, citing 45 FR 52704. EPA concluded that starting up the long-dormant Monroe plant was not the kind of response to changing market conditions that the exemption was intended to insulate from PSD review. *Id.* at 20-21.

While EPA’s policy documents may not govern our interpretation and application of the regulations, we agree with EPA that the preamble to regulations is an appropriate interpretive aid in understanding the intended scope of the accompanying regulations. Accordingly, ADEC has independently reviewed the brief discussion in the preamble that addresses this exemption. On balance, we do not interpret the preamble to create as narrow an exemption as EPA’s *Monroe* decision would suggest. EPA stated in its preamble that the exemption “would exclude *any* increase in hours or rate of operation, as long as the increase would not require a change in any preconstruction permit condition established under the SIP.” 45 FR 52704 (emphasis added). It noted that the Clean Air Act provisions on PSD permit requirements emphasized ‘construction’ activities rather than, presumably, operation of a source. Finally, EPA added that “any change in hours or rate of operation that would disturb a prior assessment of a source’s environmental impact should have to undergo scrutiny.” *Id.*

Based on the regulatory language of the exemption, and the entire (albeit brief) discussion of that exemption in the preamble, ADEC reaches a conclusion in the HCCP case that is contrary to EPA’s conclusion in *Monroe*. HCCP has already gone through PSD permitting, and its emissions have been included in the state’s inventory during the years of its dormancy. For all we know, the proposed start-up of HCCP is indeed a response to long-term market conditions (i.e.: the need for more power in communities served by GVEA), and there is nothing in the preamble to suggest that only short-term market trends were contemplated by the exemption. Given the history of this stationary source and the governing regulatory language, ADEC concludes that the start-up of HCCP under its existing permits falls within the ‘increase in hours’ exemption from the category of major modification.

One final note: while it is tempting to regard HCCP’s PSD permit as somehow being ‘stale’, due to the long delay in plant start-up, the federal regulations that deal with stale PSD decisions do not appear to apply. Specifically, 40 CFR 52.21(r) essentially imposes an 18-month timeline for commencing construction of PSD-permitted sources, as well as a duty to complete construction

“within a reasonable time.” The regulation does not impose a similar deadline or obligation for commencing the operation of a permitted and constructed source. Thus, the long (and presumably unusual) delay between the construction of HCCP and its proposed start-up does not appear to make the original PSD permitting decision stale in any regulatory sense. Had EPA chosen to require a prompt start-up of a constructed stationary source, it could have done so in a way similar to the terms of its existing staleness rule. Having not done so, it appears to have left more leeway for the delayed operation of a plant than for its delayed construction.

CONCLUSION:

For the reasons set out above, ADEC concludes that the long-delayed commencement of the normal operation of the PSD-permitted HCCP does not constitute a major modification triggering another PSD review. ADEC will proceed with on-going Title V permitting of HCCP based on that conclusion.