



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5

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CHICAGO, IL 60604-3590

FEB 23 2012

Joe Henderson
Strategic Projects Sector
Industrial Division
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, Minnesota 55155

REPLY TO THE ATTENTION OF:

Dear Mr. Henderson:

We have reviewed the Minnesota Pollution Control Agency's (MPCA) draft prevention of significant deterioration (PSD) and Title V permit for Essar Steel Minnesota, LLC (Essar) in Nashwauk, Minnesota (permit number 06100067-004) to modify a project already under construction for the previously permitted Minnesota Steel Industries (MSI). The proposed Essar project modification encompasses activities covered in the MSI project including mining, ore processing, direct reduced iron (DRI) production and steel-making, but will also increase taconite pellet production and associated mining and tailings generation rates. The proposed project is a major source of emissions of greenhouse gases (GHG), nitrogen oxides (NO_x), sulfur dioxide (SO₂), carbon monoxide (CO), volatile organic compounds, fluorides, and particulate matter (PM), including PM less than 10 microns in size (PM₁₀) and less than 2.5 microns in size (PM_{2.5}).

In order to ensure that the project meets Federal Clean Air Act (CAA) requirements, that the permit will provide necessary information so that the basis for the permit decision is transparent and readily accessible to the public, and that the permit record provides adequate support for the decision, the U.S. Environmental Protection Agency has the following comments:

1. The permit record does not appear to include any air quality analysis to show that this source will not cause a violation of the ozone national ambient air quality standards, 40 CFR 51.166(K); 40 CFR 51.166(m). EPA's 8-hour ozone implementation phase 2 rule (November 29, 2005; 70 FR 71612) requires that NO_x be considered as an ozone precursor under PSD. One of the elements of that rule is a requirement that the PSD program regulations define the term "significant" for ozone to include 40 tons per year (tpy) of NO_x. See 40 CFR 51.166(b)(23)(i). In accordance with 40 CFR 51.166(m)(1)(a), a permit application must contain an air quality analysis for each pollutant that a new source would have the potential to emit in significant amounts. Since the Essar modification project has NO_x emissions above this significance threshold for ozone, EPA regulations require that the record contain an ozone impact analysis for this source. A quantitative modeling analysis is not necessarily required but MPCA should consult with EPA Region 5 regarding the appropriate form for such an analysis in this case. 40 CFR Part 51, Appendix W, 5.2.1.c.

2. The permit record does not include a PM_{2.5} increment analysis. At 75 Fed. Reg. 64864, EPA establishes increments for PM_{2.5} pursuant to the CAA. In the preamble to the 2010 final rule promulgating the PM_{2.5} increments, we indicated that we would require sources seeking a PSD permit under the Federal PSD program to complete an increment analysis as a prerequisite to the permit being issued if the date of issuance will occur after the trigger date (October 20, 2011), when the PM_{2.5} increments became effective under the Federal PSD program. Please require Essar to complete a PM_{2.5} increment analysis and include it as part of the permit record.
3. The "Test & Set" provisions for PM_{2.5} include a requirement that the Permittee shall submit an application for a major permit amendment within 910 days of project start up. Essar is a major source of PM_{2.5} emissions. The permit initially establishes Best Available Control Technology (BACT) limits for PM_{2.5} that are equivalent to the PM₁₀ BACT limits. When the PM_{2.5} BACT limits are revised, in keeping with EPA policy, they must undergo a reopening of the BACT analysis and subsequently must give a new opportunity for public comment. The permit language should be clarified wherever the "Test and Set" provisions are mentioned, including the Appendices.
4. P. A-21, Group 009/SV047 contains a requirement to keep EAF baghouse dust lead and fluoride concentrations to below 8000 mg/kg and 4600 mg/kg, respectively, using a 12 month rolling average. The permit does not appear to require monitoring of these permit conditions. The previous permit for Essar required weekly sampling and analysis to monitor these permit conditions. Please include monitoring that effectively demonstrates compliance with these provisions.
5. P. A- 17 and A-21, contain requirements for fabric filters related to the Group 009 EAF baghouses. Please explain how monitoring for this group of emissions units adequately ensures compliance (e.g., parametric monitoring of pressure drop across the baghouse) or add monitoring sufficient to ensure compliance to the permit.
6. Throughout the permit, limits for sulfur dioxide and nitrogen oxides are on a lb/ton of liquid steel produced and lb/hour basis using a 3-hour average. Due to the 1 hour standards for sulfur dioxide and nitrogen oxides, limits for these pollutants should be on a similar short term basis, (i.e. on a 1 hour basis). Please revise this averaging period wherever it is appropriate in the permit.
7. P. A-22 contains a requirement for Group 009 emissions units under the Recordkeeping and Reporting Section that allows the Permittee to collect 12 months of NO_x continuous emission monitoring system (CEM) emissions data that can be submitted to the Commissioner of MPCA who "shall establish a NO_x limit and amend this permit to reflect the actual level of emissions". The NO_x limits for Group 009 are BACT limits, and as such cannot be modified by the Commissioner without undergoing a BACT

reopening or revision. In addition, a modification of a BACT limit cannot be established with an administrative amendment.

8. The Technical Support Document (TSD) should include a more detailed discussion of the Modeled Class 1 Increment Concentrations (Table 7-3 in Essar's application) for the 24 hour PM₁₀ standard. Specifically, the TSD does not include this table and exact modeling concentrations do not appear to be mentioned in the narrative. The permit record should discuss results of the air quality modeling and typical procedures allowed by the PSD rules or EPA policy and guidance that impact permitting decisions.
9. In regard to the BACT analysis for GHGs, we have the following comments:
 - 1) Table 1-10 is a summary chart for the steps involved in determining BACT control technology. However, the permit record does not explain why certain BACT technologies were eliminated. It also lists "energy efficiency measures" as inherent to the design of the indurating furnace, but it does not actually identify the energy efficiency measures or the degree to which the measures will reduce GHG emissions from the indurating furnace. Please revise the permit record to thoroughly explain all the decisions that were made in the BACT analysis, including justifications for rejecting control technologies that were deemed not feasible.
 - 2) Table 1-10 eliminates carbon capture and sequestration (CCS) as technically infeasible, without providing a basis for this statement. EPA generally considers CCS to be both commercially available and technically feasible for large carbon dioxide emitting facilities. (See EPA's permitting guidance at <http://www.epa.gov/nsr/ghgdocs/ghgpermittingguidance.pdf> and control technology white paper at <http://www.epa.gov/nsr/ghgdocs/ironsteel.pdf>). If MPCA cannot demonstrate why CCS is technically infeasible for the proposed project, then please revise Step 4 in the BACT analysis to include an evaluation of costs and other impacts of installing and operating CCS for this proposed project.

We appreciate the opportunity to provide comments on this draft permit. Please feel free to contact me or have your staff contact Jennifer Darrow, of my staff, at (312) 886-6315 if you have any questions.

Sincerely,



Genevieve Damico
Chief
Air Permits Section