



Analysis of the Petition for Promulgation of Rules for Respirable Crystalline Silica

January 30, 2012

Introduction

On November 22, 2011, the Secretary of the Department of Natural Resources (DNR) was served with a petition for rulemaking. This petition was submitted pursuant to s. 227.12(1) and (2), Wis. Stat., by ten citizens of the state of Wisconsin, and asked the DNR to conduct rule-making proceedings to revise and adopt rules governing the emissions of Respirable Crystalline Silica (RCS) to the air from all significant sources, including bedrock sandstone mines and associated processing plants. Specifically, the Petitioners requested that the DNR revise Table List A of NR 445.07, Wis. Adm. Code to include RCS as a Hazardous Air Contaminant under NR 445.13, Wis. Adm. Code, and to establish an emission standard of 3 micrograms per cubic meter.

This memo analyzes the legal, policy and scientific aspects and basis for the petition, and sets forth a recommendation on whether the DNR should recommend to the Natural Resources Board that we proceed with rule-making as requested, or whether we should deny the petition. In making this recommendation, the DNR has considered not only the information contained in the petition itself, but also other available information, including the [Report to the Natural Resources Board: Silica Study](#) (August 2011), discussions with Air Program staff involved with the preparation of that study, and discussions with staff involved with permitting and inspecting of silica mines and processing facilities and other sources of particulate matter.

Petition Sufficiency under s. 227.12 of the Wisconsin Statutes

The first step in the analysis is determining whether the Petitioners have provided a petition that is legally sufficient. Section 227.12, Wis. Stat., sets forth the process for certain entities and persons to petition agencies to promulgate rules. Under s. 227.12(1), Wis. Stat., any five or more persons having an interest in a rule may petition an agency requesting it to promulgate a rule. In addition, under s. 227.12(2), Wis. Stat., the petition must state clearly and concisely: the substance or nature of the rule making requested; the reason for the request and the Petitioners' interest in the requested rule; and a reference to the DNR's authority to promulgate the rule.

In this instance, the petition meets these procedural requirements. Ten persons submitted the petition at issue. Furthermore the petition specifies the nature of the rulemaking that is being requested, as well as the reason for the request and the Petitioners' interest in the rule. The petition also accurately sets forth the DNR's authority to promulgate a rule pertaining to RCS. Therefore, it is recommended that the DNR accept the petition as legally sufficient.

DNR Authority to Promulgate Standards

In addition to the procedural requirements contained in s. 227.12, Wis. Stat., however, there are additional legal considerations that go beyond the determination of whether the petition itself is legally sufficient. Petitioners have asked that RCS be regulated as a hazardous air pollutant (HAP). Section 285.27, Wis. Stat., sets forth specific requirements that must be met in order for DNR to regulate HAPs. More specifically, when there is no corresponding federal HAP, in order to promulgate a HAP the DNR must comply with s. 285.27(2)(b), Wis. Stat.

¹ In addition, there is a provision in NR 445.13(2), Wis. Adm. Code, that states that the tables in NR 445.07, Wis. Adm. Code, can be revised if the contaminant proposed to be added is indeed a HAP, pursuant to NR 445.13(2)(a), Wis. Adm. Code. While the Petitioners

Administrative Code & Statutory Requirements

Section 285.27(2)(b), Wis. Stat., states that if an emission standard for a HAP is not promulgated under federal law (section 112 of the Clean Air Act), the DNR may promulgate an emission standard for the HAP if the DNR finds the standard is needed to provide adequate protection for public health or welfare. This finding cannot be made unless the finding is supported with written documentation that addresses four areas:

1. A public health risk assessment that characterizes the types of stationary sources in this state that are known to emit the hazardous air contaminant and the population groups that are potentially at risk from the emissions.
2. An analysis showing that members of population groups are subjected to levels of the hazardous air contaminant that are above recognized environmental health standards or will be subjected to those levels if the department fails to promulgate the proposed emission standard for the hazardous air contaminant.
3. An evaluation of options for managing the risks caused by the hazardous air contaminant considering risks, costs, economic impacts, feasibility, energy, safety, and other relevant factors, and a finding that the chosen compliance alternative reduces risks in the most cost-effective manner practicable.
4. A comparison of the emission standards for hazardous air contaminants in this state to hazardous air contaminant standards in Illinois, Indiana, Michigan, Minnesota, and Ohio.

Thus, before the DNR can undertake rulemaking, the finding of need is required, and that finding must contain the aforesaid elements. The DNR has not made this finding. Moreover, given the DNR's recent Silica Study, DNR could not make this finding at this time.

The DNR Silica Study indicates that more research is needed in Wisconsin in order to ascertain the range of ambient air exposures likely to occur, both near sources of silica emissions as well as from background levels of exposure. The Wisconsin Department of Health Services (DHS) worked with the DNR as the Silica Study report was developed. The DHS found "no published evidence of health effects from intermittent or occasional off-site exposures to people living near sand mining operations."² No measured ambient concentration data for RCS is currently available to demonstrate whether or not Wisconsin population groups are (or will be) subject to levels above recognized environmental health standards. Moreover, the U.S. Environmental Protection Agency has not approved test methodology for RCS or PM₄. Furthermore, an analysis of options for managing risks caused by RCS has not been completed in a sufficient level of detail. As mentioned above, while the DNR has not undertaken the four-step process for making the s. 285.27(2)(b), Wis. Stat., finding, given the above information, such a finding could not be completed in order to allow rulemaking to proceed.

Even if the requirements of s. 285.27(2)(b), Wis. Stat., could be met, the provisions of NR 445.14(3), Wis. Adm. Code, must be addressed if rulemaking is to take place with respect to RCS. NR 445.14(3), Wis. Adm. Code, states that the DNR shall evaluate the listing of substances added to NR 445, Wis. Adm. Code, on July 1, 2004, using the criteria set forth in s. NR 445.13 (2) (d), Wis. Adm. Code, *prior* to listing additional substances in Table A, B or C of s. NR 445.07, Wis. Adm. Code. Thus, before RCS could be added to Table A as requested by the Petitioners via rulemaking, *all* the substances that were listed during the 2004 rulemaking (approximately 100) would have to be evaluated. This evaluation is no easy task: under NR 445.13(2)(d), Wis. Adm. Code, it would

have set forth accurately in their petition a basis for establishing that RCS can meet the requirements of NR 445.13(2)(a), Wis. Adm. Code, the requirements of s. 285.27, Wis. Stat., must first be met in order to regulate a contaminant as a HAP via NR 445, Wis. Adm. Code.

² In a December 8, 2011 letter, DHS stated: "DHS concurs with the conclusion of the DNR special study, that there is evidence of health effects from exposure to silica, but that this evidence is limited to exposures resulting from long-term occupational exposure. We have found no published evidence of health effects from intermittent or occasional off-site exposures to people living near sand mining operations."

include an evaluation of sources in Wisconsin that release, or are likely to release, the contaminants; an evaluation of the expected population exposure to the contaminants and the related risks; and an evaluation of alternative control strategies, including emission limitations, that includes consideration of costs. This requirement – which again, has to take place *before* any new substance could be added to Table A – could take years to accomplish. In the meantime, rulemaking for RCS could not take place.

In summary, the Petitioners have requested that RCS be added to Table A of NR 445, Wis. Adm. Code. To do that, two major legal issues would have to be overcome: the lack of a finding (with its four subservient requirements) under s. 285.27(2)(b), Wis. Stat., and the need to conduct analyses of a multitude of HAPs under NR 445.14(3) Wis. Adm. Code. Absent these findings and analyses, the DNR cannot grant the Petitioners' request for rulemaking.

Policy Considerations

Even if it were possible to meet the statutory and rule requirements to move forward with promulgating a standard for RCS, there are policy reasons for not moving forward with such a proposal. Most importantly, existing regulations currently address these emissions. Because silica emissions are a component of particulate matter emissions, it is very likely that existing particulate matter emission regulations and control measures (baghouses, etc.) used to control stack emissions at facilities which may emit silica will adequately control these emissions.

In addition to silica emissions from stacks, there is a potential of exposure to fine RCS particulate matter from fugitive dust emissions. Fugitive dust emanates from broad areas (rather than a stack), and consequently fugitive dust control measures (as opposed to mechanical control equipment that would be used for stack emissions) must be utilized to control such emissions. The existing NR 415.04 and 415.075, Wis. Adm. Code, provide authority for the DNR to require use of such measures, which may include things such as the watering, treating, or periodic cleaning of roads, trafficable areas and storage piles; establishing schedules for inspection and maintenance of fugitive dust control equipment; and other information the Department deems pertinent. DNR also has authority to require modifications of those measures, or incorporation of additional measures into a fugitive dust control plan for a source. In fact, the Air Management Program is requiring fugitive dust control plans as part of the air permitting process for these facilities. The DNR is implementing these existing authorities to control both stack and fugitive emissions at the processing facilities and mines.³

In order to ensure that these existing requirements are implemented appropriately, the Air Management Program has recently allocated approximately 3,000 hours of staff time to address concerns with RCS emissions in the western and northern portions of the state. This effort is currently focused on expanded fugitive dust control requirements and guidance for silica sand mining sources. The DNR has recently prepared a fugitive dust control plan template for sources to use to assure appropriate issues are addressed in these plans when they are submitted.

In addition, the DNR is requiring that fugitive dust plans be submitted earlier in the construction permit process to ensure these plans are in place prior to operation of these facilities. The DNR is also conducting compliance inspections and complaint follow up related to silica sand mining sources.

The process for adopting an administrative rule would likely take several years to complete. In addition to the time required to conduct the s. 285.27, Wis. Stat., and NR 445.13, Wis. Adm. Code, analyses, promulgation of an ambient air standard for RCS would likely take at least two to four years given the probable interest in this rule. This effort would require redirection of resources currently being devoted to regulating RCS via existing regulation to the promulgation effort. Furthermore, as noted in the DNR silica study, sources of RCS are ubiquitous. An ambient standard for RCS would apply to *all* sources of RCS, including activities such as

³ It should be noted that NR 445.13(2)(c), Wis. Adm. Code, authorizes DNR to consider whether other regulations, such as particulate and fugitive dust regulations, provide adequate protection for public health or welfare in determining need to list RCS in Table A as requested by the petition.

agricultural plowing, and would not be limited to the silica sand mining industry. This highlights the difficulty in identifying all sources of RCS, and evaluating alternative control strategies and costs for RCS regulation to enable the s. 285.27(2)(b), Wis. Stat., findings to be made. The resulting RCS standard would then need to be incorporated into operation permits for sources of RCS, which would require additional time.

Recommendation

Based on the above considerations, the DNR's Air Management Program currently does not have the authority to move forward with the petition, and believes that the particulate matter regulations currently contained in the administrative code provide adequate regulatory authority to protect public health and welfare. Consequently, it is recommended that the petition to promulgate rules to govern respirable crystalline silica be denied.