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Sent: Monday, December 13, 2010 2:49 PM
To: zzMSHA-Standards - Comments to Fed Reg Group
Subject: NSSGA comments on ANPRM re: dams

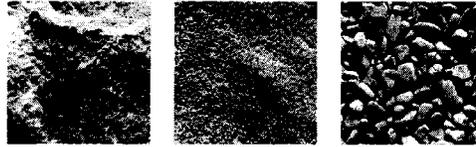
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Attached, please find NSSGA comments on the ANPRM for dams & impoundments. Thank you for this opportunity to comment.

Joseph Casper

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Natural building blocks for quality of life

December 12, 2010

Mine Safety and Health Administration
Office of Standards, Regulations, and Variances
Room 2350
110 Wilson Boulevard
Arlington, VA 22209-3939
RE: MSHA ANPR on Metal and Nonmetal Dams; RIN No. 1219-AAB70

Dear Sir or Madam:

The National Stone, Sand and Gravel Association (NSSGA) is pleased to file the following comments on the Advance Notice of Proposed Rulemaking (ANPR) of the Mine Safety and Health Administration (MSHA) regarding metal and nonmetal dams (75 FR 49429 et seq.; August 13, 2010).

Based near the nation's capital, NSSGA is the world's largest mining association by product volume. Its member companies represent more than 90 percent of the crushed stone and 70 percent of the sand and gravel produced annually in the U.S. and approximately 114,000 working men and women in the aggregates industry. During 2009, a total of about 1.91 billion metric tons of crushed stone, sand and gravel, valued at \$17.2 billion, were produced and sold in the United States.

NSSGA works cooperatively with MSHA on worker safety and health. Much of this work comes via the MSHA-NSSGA Alliance. NSSGA's comments were prepared in consultation with the Industrial Minerals Association of North America.

Executive Summary:

Wherever possible, regulation and enforcement of dams and impoundments should come at the local and state level. The aggregates industry primarily uses sediment ponds that pose few if any risks of serious injury.

Because we know of no recent injuries or fatalities from breakage of dams or impoundments in the aggregates industry, we believe that no further regulation is warranted. And, because of this paucity of safety hazards in our industry, we provide a general overview herein. However, if a rulemaking is deemed to be warranted, NSSGA will provide appropriate comment.

In these comments, we have chosen to use the terms "impoundments" and "impoundment structures" in lieu of "dams." We seek to differentiate the former structures on mine property from the latter structures as generally understood by the public.

Also, we wish to emphasize the difference between above-grade impoundment structures and below-grade (incised) impoundments structures. NSSGA believes that no engineering design plan should be required for the latter type of impoundment structure.

Sincerely,

Joseph S. Casper
Vice President, Safety

**COMMENTS OF THE
NATIONAL STONE, SAND & GRAVEL ASSOCIATION
MINE SAFETY AND HEALTH ADMINISTRATION'S (MSHA)
ADVANCE NOTICE OF PROPOSED RULEMAKING (ANPR)
ON METAL AND NONMETAL DAMS**

General Questions

1. MSHA is seeking information concerning current dam safety practices at metal and nonmetal mines. What measures do mine operators currently take to design, construct, operate, and maintain safe and effective dams? What measures do mine operators currently take to safely abandon their dams? For mine operators with dams, please provide your experiences.

NSSGA Comment:

If a state or local jurisdiction has requirements for impoundments, then mine operators necessarily will need to comply with these requirements to ensure safe operation of the impoundment. The same can be said for requirements related to abandonment of the impoundment. MSHA should accept these state and local jurisdiction requirements in lieu of federal regulation to avoid conflict or redundancy of requirements.

In the absence of state or local requirements for impoundments, mine operators necessarily need to comply with MSHA's requirements for retaining dams at 30 CFR 56.20010 and 57.20010, which provide, "[i]f failure of a water or silt retaining dam will create a hazard, it shall be of substantial construction and inspected at regular intervals." Inherent in these requirements, which have consistently demonstrated their industry-wide effectiveness over decades, are the desired elements of hazard assessment, design, construction, operation and maintenance to ensure safe and effective impoundments and impoundment structures.

2. MSHA is required to inspect every mine in its entirety, which includes dams of all sizes and hazard potential. A common approach for dam safety is to have tiered requirements based on a dam's size and hazard potential. How should MSHA determine safety requirements based on a dam's size and hazard potential? Please include specific recommendations and explain your reasoning.

NSSGA Comment:

Storage capacity, impoundment structure size and hazard potential rating should be utilized to set safety requirements. Since most aggregate operations are in rural and generally flat areas, we suggest that MSHA only should concern itself with impoundment storage capacities in excess of 50 acre-feet, impoundment structures in excess of 25 feet in height as measured from the up-stream toe, and hazard potential rating should determine the frequency of inspection. Similarly, MSHA should not concern itself with impoundment structure not in excess of six feet in height regardless of storage capacity, or impoundments which have a storage capacity at maximum water storage elevation not in excess of 15 acre-feet regardless of height. These recommendations are consistent with the Federal Guidelines for Dam Safety. High hazard impoundments (e.g., potential loss of life) should be inspected more frequently than moderate hazard impoundments (e.g., potential major property damage) or low hazard impoundments (e.g., potential minor property damage). The demonstrated performance of the impoundment also should be a factor in determining the frequency of inspection.

3. What non-Federal authority regulates the safety of dams at metal and nonmetal mines in your state, territory, or local jurisdiction? Please discuss the specific requirements, including the principles that they address. If possible, please provide information about relevant non-federal dam safety requirements through a hyperlink or other means.

NSSGA Comment:

As a general matter, impoundments at metal and nonmetal mines already are regulated by non-federal authorities, be they state or local jurisdictions. While the attached list of state regulations is not complete, it nevertheless demonstrates the scope, depth and breadth of state regulation of impoundments and impoundment structure. Additional research should allow MSHA to compile a compendium of state and local regulation of impoundments.

NSSGA maintains that variations in federal, state and local regulation of impoundments and impoundment structures should be respected by MSHA and that the agency should not impose an additional layer of regulation to achieve consistency for mining operations where it is not justified. Our best advice is that in the absence of state or local requirements for impoundments, mine operators should continue to comply with MSHA's requirements for retaining dams at 30 CFR 56.20010 and 57.20010, which provide, "[i]f failure of a water or silt retaining dam will create a hazard, it shall be of substantial construction and inspected at regular intervals." Inherent in these requirements, which have consistently demonstrated their industry-wide effectiveness over decades, are the desired elements of hazard assessment, design, construction, operation and maintenance to ensure safe and effective impoundments and impoundment structures.

4. What records should be kept of activities related to the safety of dams? Please be specific and include your rationale. What records should be provided to miners if hazardous conditions are found?

NSSGA Comment:

The records required to be maintained depend on the requirements of the state or local jurisdiction. These states and local jurisdictions are best positioned to explain the rationale

for why the specific records are required to be maintained. In addition, mine operators may maintain business records related to impoundments and impoundment structures, e.g., plans, construction contracts, etc.

If a hazardous condition is found to exist with respect to an impoundment or impoundment structure, it is incumbent on the mine operator to acquaint miners who may be affected by the hazard of its presence and what precautions should be taken to protect against the hazard presented. Records, per se, may not be relevant or adequately address the hazardous condition. Some records may only be intelligible to persons knowledgeable in the subject matter and making the record available to other persons only may cause unnecessary confusion.

Design and Construction of Dams

MSHA's existing standards do not include specific requirements for design of dams. MSHA found that inadequate design contributed to some of the metal and nonmetal dam failures. In responding to the following questions, please discuss how any requirements should vary according to the size or hazard potential of a dam, and why.

5. How should mine operators assure that dams are safely and effectively designed? Please suggest requirements that MSHA should consider for safe design of dams. Please be specific and include your rationale.

NSSGA Comment:

Mine operators only can assure that impoundments and impoundment structures are safely and effectively designed by two means: 1) they have been designed and certified by a competent engineer; and 2) the design engineering plan has been accepted and approved by the state or local authority with responsibility for impoundments and impoundment structures. Once the above two items have been fulfilled, MSHA should accept the design. This will eliminate overlapping jurisdiction, duplication of effort and additional cost. Should MSHA disagree with a state or local authority, it would be important for MSHA to resolve the issues it has with the state or local authority and provide the necessary technical support to the mine operator.

6. Please suggest requirements for review of dam designs by mine operators and MSHA and include your rationale for specific recommendations and alternatives.

NSSGA Comment:

Once a state or local jurisdiction with responsibility for impoundments or impoundment structures has accepted and approved a design there is no need for additional review by MSHA. Again, foregoing additional review by MSHA will eliminate overlapping jurisdiction, duplication of effort and additional cost. If there is no state or local authority with responsibility for impoundments or impoundment structures it is our recommendation that the design engineering plan should be designed and approved by a competent engineer practicing in the subject field. Further, MSHA should review design plans for impoundments with high-hazard classification (e.g., potential loss of life). MSHA should accept design plans for impoundments with moderate hazard classification (e.g.,

potential major property damage) or low hazard classification (e.g., potential minor property damage). These latter hazard classifications indicate that failure of the impoundment structure only can cause damage to property, not potential loss of life.

7. With new standards, operators may need to evaluate and upgrade existing dams. Please elaborate on how the safety of existing dams should be addressed.

NSSGA Comment:

Existing impoundments should be addressed based on the impoundment structure's past performance. If records of routine inspection indicate that the structure has performed normally, then there is no need for re-evaluation. If the inspection records indicate safety concerns then a re-evaluation of the design may be warranted and an upgrade may be required.

8. MSHA's existing standards for dams at metal and nonmetal mines do not address whether a dam is constructed as designed. What measures are necessary to ensure that mine operators construct dams as designed?

NSSGA Comment:

Whether an impoundment structure has been constructed as designed is best evaluated by reference to the engineering design plan, which should include a section addressing construction specifications. During construction, inspection should verify that the impoundment structure is constructed to the design engineering design plan. Records of construction inspection should be maintained. Records of construction inspection can document the impoundment structure is constructed as designed. This recommendation is best put into practice for proposed new impoundment structures or up-grades to existing impoundment structures.

9. How should MSHA verify that dams have been constructed as designed? Please explain your rationale.

NSSGA Comment:

For existing impoundments with no design plan, the impoundment structure's past performance is the best indication of adequate design and construction. If the inspection records indicate safety concerns then a re-evaluation of the impoundment structure may be warranted and an upgrade may be required.

However, if an impoundment structure was constructed according to an engineering design plan, then the engineering design plan should have a construction specification section. MSHA can verify the structure was constructed as designed by examining available construction specification criteria and the construction inspection records.

Operation and Maintenance of Dams

MSHA's existing standards do not contain specific requirements addressing the operation and maintenance of dams.

10. What should a mine operator do to operate and maintain a safe dam? How should MSHA verify that dams are safely operated and maintained? Please be specific.

NSSGA Comment:

Mine operators are responsible for "routine" inspection by trained and qualified personnel at regular intervals if failure would create a hazard. Records of these inspections should be maintained at the mine site. "Detailed" inspections, as warranted, should be conducted by a knowledgeable registered professional engineer.

MSHA can verify that impoundments are safely operated and maintained by conducting field inspections and examining the inspection records maintained by the mine operator. MSHA should conduct such routine and detailed inspections as may be required by law.

MSHA's existing standards require dams to be inspected. Inspections can identify hazardous conditions, allowing a mine operator to take corrective action to prevent a failure. The Agency will be referring to two types of inspections in this document, "routine" and "detailed." Mine operators should perform frequent, routine dam inspections, which may include monitoring instrumentation, to identify unusual conditions and signs of instability. Personnel with more specialized knowledge of dam safety should conduct detailed inspections to identify less obvious problems and evaluate the safety of the dam. Detailed inspections, occurring less often, would include an examination of the dam and a review of the routine inspections and monitoring data. The Guidelines recommend that inspection personnel be qualified for their level of responsibility and trained in inspection procedures.

11. What measures should mine operators take to assure that dams are adequately inspected for unusual conditions and signs of instability?

NSSGA Comment:

Mine personnel assigned to perform routine inspection should receive adequate training to qualify them to carry out these tasks. In our estimation, this training should be comparable to the training an MSHA inspector receives for dam safety. Such training should provide skills adequate for the responsible person to conduct an inspection for unusual conditions and signs of instability.

12. How often are routine inspections of dams conducted? How often should they be conducted? What determines the frequency? Who conducts the routine inspections? Please be specific and include your rationale.

NSSGA Comment:

The number of routine inspections conducted of impoundments varies. The frequency of routine inspections should be based on need and the past performance of the impoundment structure, and at such intervals if failure would cause a hazard.

13. Instruments, such as weirs, provide information on the performance of a dam. How frequently should mine operators monitor dam instrumentation? Please provide your rationale.

NSSGA Comment:

If any instrumentation has been installed on site, the frequency of the monitoring should be based on the engineer's requirements and the past performance of the impoundment structure. During construction and the initial filling stage, inspection likely may be more frequent. If after a reasonable period of time the impoundment performs as designed, the inspection frequency can be reduced.

14. What information should be documented during routine dam inspections? Please provide your rationale.

NSSGA Comment:

The information required to be documented during routine impoundment inspection should be based on the engineer's requirements since these data are important for the engineer to evaluate the performance and safety of the impoundment structure.

15. Does a competent engineer inspect your mine's dam? If so, at what frequency? Please explain the rationale for these inspections and what is evaluated.

NSSGA Comment:

Whether, and how frequently, a detailed inspection needs to be conducted by a competent engineer should be a function of need. Qualified personnel trained to conduct routine inspections can reveal a need for further inspection by a competent engineer. Again, the information required to be documented during routine impoundment inspection should be based on the design engineer's requirements since these data are important for the design engineer to evaluate the performance and safety of the impoundment structure.

16. How often should detailed inspections be conducted? Please include your rationale.

NSSGA Comment:

The frequency of detailed inspection should be consistent with generally accepted practice of applicable federal, state and local agencies responsible for impoundment safety.

17. What information and findings should be documented during detailed dam inspections? Please be specific and include your rationale.

NSSGA Comment:

What specific information and findings should be documented during detailed impoundment inspections only can be determined by the engineer based on his or her need to ensure the safety of the impoundment and the impoundment structure. However, general information and findings typically would include a visual inspection and

examination of records of monitoring instrumentation data. The specific information and findings that should be documented should be based on the design engineer's requirements.

18. How should MSHA verify that mine operators conduct routine and detailed inspections?
Please explain how your suggestion would work.

NSSGA Comment:

It is possible for MSHA to verify that mine operators conduct routine and detailed inspections by examining inspection records maintained by the mine operator. However, MSHA should identify clearly the minimum information or documentation required to be maintained to achieve its objectives and avoid overlapping jurisdiction, duplication of effort and additional cost. If a state or local jurisdiction already is performing this responsibility, there is no need for MSHA to do so. We submit that any records MSHA requires to be maintained should focus on the engineer's requirements.

Qualifications of Personnel

A mine operator is responsible for the design, construction, operation, and maintenance of dams. For an effective dam safety program, an operator must use personnel who are knowledgeable about dam safety.

19. What qualifications do mine operators currently require of persons who design, inspect, operate, and manage dams? In what capacities are engineers used? Please be specific in your response.

NSSGA Comment:

For designed impoundments, the design function should be performed by a competent engineer. The inspection, operation, and maintenance of impoundments can be performed by mine personnel qualified by training and experience. For non-designed impoundments, the inspection, operation and maintenance functions typically would be performed by mine personnel qualified by training and experience.

20. The Guidelines recommend that dams be designed by competent engineers. What specific qualifications or credentials should persons who design dams possess? Please include your rationale.

NSSGA Comment:

For designed impoundments, the design function should be performed by a competent engineer. The qualifications or credentials of a competent engineer are based on education, work experience and professional engineering registration. The education component typically would cover a B.S., M.S. or Ph.D. in mining engineering, civil engineering or geotechnical engineering. A competent engineer could be qualified by education and experience. He or she typically would have basic training in geology, soil mechanics, rock mechanics, hydraulics, hydrology, mining methods or mining operations. The work experience component typically would include impoundment design and inspection.

21. The Guidelines recommend that a dam be constructed under the general supervision of a competent engineer knowledgeable about dam construction. What specific qualifications or credentials should a person have who verifies that a dam is being constructed as designed? Please provide your rationale.

NSSGA Comment:

The qualifications or credentials of a competent engineer are based on education, work experience and professional engineering registration. The education component typically would cover a B.S., M.S. or Ph.D. in mining engineering, civil engineering or geotechnical engineering. A competent engineer could be qualified by education and experience. He or she typically would have basic training in geology, soil mechanics, rock mechanics, hydraulics, hydrology, mining methods or mining operations. The work experience component typically would include impoundment design and inspection.

22. What training should personnel receive who perform frequent, routine inspections and who monitor instrumentation at dams? In your response, please suggest course content and the frequency of the training, including the rationale for your recommendations.

NSSGA Comment:

Mine personnel assigned to perform “routine” inspection should receive adequate training to qualify them to carry out these tasks. In our estimation, this training should be comparable to the training an MSHA inspector receives for safety of dams and impoundments. Such training should provide skills adequate for the responsible person to conduct an inspection for unusual conditions and signs of instability. Whether mine personnel or MSHA inspectors the course content should be determined by a registered professional engineer who practices in the area.

23. What qualifications or credentials should be required of persons who perform detailed inspections to evaluate the safety of a dam? Please be specific and include your rationale.

NSSGA Comment:

The qualifications or credentials of a competent engineer are based on education, work experience and professional engineering registration. The education component typically would cover a B.S., M.S. or Ph.D. in mining engineering, civil engineering or geotechnical engineering. A competent engineer could be qualified by experience and training. He or she typically would have basic training in geology, soil mechanics, rock mechanics, hydraulics, hydrology, mining methods or mining operations. The work experience component typically would include impoundment design and inspection. The registered professional engineering component typically would cover the disciplines of mining engineering, civil engineering or geotechnical engineering.

Abandonment of Dams

24. Some regulatory authorities require that dam owners obtain approval of a plan to cap, breach, or otherwise safely abandon dams. What actions should mine operators take to safely abandon dams? Please include specific suggestions and rationale.

NSSGA Comment:

Where state or local regulatory authorities require the approval of an abandonment plan, mine operators will comply with the approved abandonment plan. The abandonment plan can be designed for capping, breaching or safe abandonment of the impoundment. Safe abandonment contemplates that the mine operator will receive approval from the state or local regulatory authority for impoundment safety or that a change from mining use to another usage (e.g., recreation, irrigation, etc.) is authorized and has been approved.

25. How can MSHA verify that a mine operator has safely abandoned a dam?

NSSGA Comment:

MSHA can verify that a mine operator has safely abandoned an impoundment by receiving a copy of the approval or acceptance of the change issued by the state or local regulatory agency responsible for impoundment safety. If the state or locality does not have a dam safety program, MSHA should accept the abandonment plan if it is certified by a competent registered professional engineer.

Economic Impact

MSHA seeks information to assist the Agency in deriving the costs and benefits of any regulatory changes for dams at metal and nonmetal mines. In answering the following questions, please indicate the dam's storage capacity, height, and hazard potential and characterize the complexity of each dam referenced. Also, please include the state where each dam is located, and the number of employees at the mine.

26. What are the costs of designing a new dam? Please provide details such as hours, rates of pay, job titles, and any contractual services necessary. How often is the design of an existing dam changed? What are the costs of a redesign?

NSSGA Comment:

MSHA should obtain this information from reputable design engineering firms practicing in impoundment design.

27. What are the costs of constructing a dam? Please provide details based on: Size of dam; labor costs, including hours, rates of pay, job titles; costs of equipment and materials; and any contractual services necessary.

NSSGA Comment:

The answer to this question can best be answered by each mine operator.

28. Please describe the oversight you provide during dam construction to assure it complies with the design plan. How much does it cost per year per dam for oversight and quality control? What special knowledge, qualifications, or credentials do you require of those who provide oversight?

NSSGA Comment:

The answer to this question can best be answered by each mine operator.

29. How often do you add height to an existing dam or modify it in some other way? Who supervises the design and construction of these modifications, for example, a professional engineer, competent engineer, contractor, etc? Please be specific and provide rationale for your answer. How much does it cost? Please provide details such as labor costs, including hours, rates of pay, job titles, and costs of equipment and materials and any contractual services necessary.

NSSGA Comment:

The answer to this question can best be answered by each mine operator.

30. How much does it cost per year per dam for routine inspections? If you incur separate costs for monitoring instrumentation, how much is that cost? How often do you have a detailed inspection conducted? How much does it cost per year for these inspections?

NSSGA Comment:

The answer to this question can best be answered by each mine operator.

31. Does the state or local jurisdiction in which you operate require you to use a professional engineer? If so, when is a professional engineer specifically required? (If you have dams in more than one state please identify which states require a professional engineer and which do not).

NSSGA Comment:

The answer to this question can best be answered by each mine operator.

32. What are the costs associated with training personnel who conduct frequent, routine inspections and monitor instrumentation at dams?

NSSGA Comment:

The answer to this question can best be answered by each mine operator.

33. What costs are involved in capping, breaching, or otherwise properly abandoning a dam? Please provide details of your experience and what was involved when you properly abandoned a dam. Describe any impact of a properly abandoned dam.

NSSGA Comment:

The answer to this question can best be answered by each mine operator.

34. What are the costs to a mine operator if a dam fails? Please characterize other impacts such as loss of life, environmental damage, etc.

NSSGA Comment:

The answer to this question can best be answered by each mine operator.

35. Do you have insurance against a dam failure? If so, please specify cost and coverage. Does the insurance carrier require the use of a professional engineer for specific dam activities? If a professional engineer is not required, does the insurance carrier give a discount if one is used? Does your insurance company have any other requirements related to dam safety?

NSSGA Comment:

The answer to this question can best be answered by each mine operator.

36. What quantifiable and non-quantifiable costs and benefits for the downstream community are involved when a dam is properly designed and constructed? In addition, MSHA welcomes comments on other relevant indirect costs and benefits.

NSSGA Comment:

The quantifiable and non-quantifiable costs and benefits for the downstream community when an impoundment is properly designed and constructed can vary from site to site and are site dependent.