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Sent: Monday, December 13, 2010 11:45 AM
To: zzMSHA-Standards - Comments to Fed Reg Group
Subject: RIN1219-AB70

2010 DEC 13 P 6:00

The Association of State Dam Safety Officials (ASDSO) is pleased to offer the enclosed comments as requested by MSHA regarding proposed metal and non-metal rules for dams. We have also mailed a hard-copy with attachments.

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AB70-COMM-21

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. Show citation box.*

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. Show citation box.*

ASDSO Recommendations:

Jurisdiction - MSHA generally exercises jurisdiction over dams that present a hazard to miners on mine property. Currently, jurisdiction does not include hazards to the downstream public or at inactive mine sites. MSHA should exercise jurisdiction over all dams that may present a danger to the downstream public from active/inactive, slurry disposal, and metal/non-metal operations.

Dam Size - 77.216(a) defines a dam using measurement of water/slurry depth above the upstream toe combined with storage volume. MSHA should adopt the National Dam Safety Act (NDSPA) definition of a dam (P.L. 109-460.Sec 2.2). The NDSPA definition uses the downstream toe to crest measurement and reservoir storage at the maximum water storage elevation. Rationale is the downstream toe measurement is more easily field determined than the upstream toe. Reservoir storage capacity using NDSPA maximum water storage elevation limits will be consistent with federal guidelines.

Safety Requirements - Requirements should specify high hazard potential structures have the capability to store/discharge the Probable Maximum Flood. Embankments and appurtenances must achieve long-term factor of safety of 1.5. A factor of safety of 1.2 must be required for rapid drawdown and the maximum credible earthquake. Requirements may be reduced for low hazard potential dams. MSHA requirements should reflect the Federal Guidelines for Dam Safety (<http://www.fema.gov/plan/prevent/damfailure/publications>) and would provide consistency of requirements among federal and many state dam safety agencies.

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. Show citation box.*

ASDSO Recommendations:

States with mining activities generally regulate waste disposal dams within their mining programs. While specific requirements of the various states is beyond the scope of this response, MSHA may find state requirements on state webpages or through inquiry to the Association of State Dam Safety Officials (ASDSO) at URL: <http://www.damsafety.org/>

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? Show citation box*

ASDSO Recommendation: All written reports, photographs, and correspondence regarding design, routine or detailed construction inspections, emergency action plans, hazard evaluations, and public outreach activities must be retained. Maintenance of the paper documents may be crucial evidence if there is a dam safety incident.

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. Show citation box

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. Show citation box*

ASDSO Recommendations:

Mine operators must assure safe design through retention of experienced design engineers. A chain of custody must be established to ensure that design plan and construction record continuity is maintained through time and/or change in engineers. Waste disposal structures often require complex designs with multiple changes during service life due to operating variables. Without continuity of plans and construction records, the operators may expend resources multiple times for investigations or documents that were previously completed.

Safety Requirements - Requirements must specify high hazard potential structures have the capability to store/discharge the Probable Maximum Flood. Embankments and appurtenances must achieve long-term factor of safety of 1.5. A factor of safety of 1.2 must be required for rapid drawdown and the maximum credible earthquake. Requirements may be reduced for low hazard potential dams. MSHA requirements should reflect the Federal Guidelines for Dam Safety (<http://www.fema.gov/plan/prevent/damfailure/publications>) and would provide consistency of requirements among federal and many state dam safety agencies.

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

ASDSO Recommendations:

Design of dams must be in the charge of professional engineers experienced in dam design/construction both by mine operators and MSHA. Specifications sufficient for construction must be generated by the design engineer and reviewed by MSHA to ensure that safe construction and installation are achieved within various foundation, water seepage, and weather conditions. All engineering documents submitted to MSHA must be signed/sealed by the design engineer. Sufficient foundation and subsurface investigation is critical to successful design and

operation of water disposal structures. Underground mine voids, geology, groundwater, and soil conditions are important factors in the design and the MSHA technical review necessary to ensure safety of the structure. Coordination with state dam safety programs is encouraged.

Construction activities must be closely monitored by the design engineer and MSHA inspectors to ensure the design is accomplished in substantial conformance with the design plans. Mine personnel are often in charge of construction of waste disposal dams rather than qualified contractors and may not possess the expertise and care necessary to achieve design parameters. Frequent unannounced construction inspections by MSHA engineers and inspectors is key to ensuring that the approved design results in a safe dam. The frequency of MSHA inspections must be commensurate with the importance of the construction activity to safe operation of the dam. During critical events such as open cut off trenches, pipe installation, and under drain construction, design engineer and MSHA inspections must be daily, hourly, or frequent enough to verify construction and specifications. At times, inspection must be continuous. Design engineers must certify that construction was in substantial conformance with approved construction plans/specifications and provide signed as-built drawings at the close of construction.

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. Show citation box

ASDSO Recommendations: Evaluation of existing dams must be accomplished by professional engineers experienced in the design/construction of dams to develop signed/sealed plans and specifications necessary for the upgrade to new safety standards. MSHA engineers must review the submitted plans and specifications in accordance with the new standards to ensure compliance. Approved plans must be implemented at the dam with monitoring by the design engineer and frequent unannounced inspections by MSHA. Design engineers must certify that construction was in substantial conformance with approved construction plans/specifications and provide signed as-built drawings at the completion of construction.

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? Show citation box

ASDSO Recommendations: MSHA should require daily or weekly inspections of the structure until the design and construction are verified. MSHA should proceed in accordance with evaluation of existing dams (see Number 7 above) for design issues and with verification of construction (see Number 9 below).

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

ASDSO Recommendations: Inspection/measurement of surface configuration plus subsurface investigation with instrumentation is necessary to determine how an existing dam was constructed. Professional engineers experienced in dam design/construction combined with surveyors and qualified drillers must accomplish a comprehensive investigation program to inspect surface conditions, obtain undisturbed samples of embankment materials, document internal embankment temperature, and install piezometers. Surveyors must establish survey monuments and document the surface configuration of the dam including location of drill holes,

spillways, installed instruments, and appurtenant structures. Drill samples must be evaluated by a qualified laboratory to determine the composition, in-situ density, and strength parameters of embankment materials to verify material placement and compaction. Existing pipes must be investigated by remote camera to document condition. With information resulting from the comprehensive investigation program, MSHA engineers may ascertain existing construction/configuration for comparison with design documentation. Undisturbed samples obtained by drilling will relate to the location and compaction of embankment materials. Bore hole temperature may indicate fires. Piezometers indicate seepage levels within the embankment and relate to the installation and effectiveness of subsurface drains. Remote cameras will indicate pipe installation problems. Surface inspection will document embankment cracking or fires related to poor compaction. Survey monuments monitor embankment settlement indicating placement of unapproved materials or poor compaction. Review by MSHA engineers should result in recommendations for necessary compliance action by the agency.

Operation and Maintenance of Dams

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

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. Show citation box*

MSHA's existing standards require dams to be inspected at regular intervals if failure would create a hazard. 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. Show citation box

ASDSO Recommendations:

MSHA should specify frequency of the routine and detailed inspections and document the schedule in the Operations and Maintenance (O&M) Plan. An Operation and Maintenance Plan provides guidance and instruction to project personnel for the proper operation and maintenance of the reservoir and dam, and includes an introduction, project description, project authorizations, project history and list of project contracts. O&M Plans also include operation and maintenance instructions for major project facilities and equipment and the schedule for routine/detailed inspections and maintenance.

Mine operator's routine inspections should be in accordance with the Emergency Action Plan (EAP) approved by MSHA for the dam. An Emergency Action Plan (EAP) is a formal document that identifies potential emergency conditions at a dam through routine inspections by the operator and specifies preplanned actions to be followed to minimize property damage and loss of life. The EAP specifies actions the dam operator should take to moderate or alleviate the

problems at the dam. It contains procedures and information to assist the dam operator in issuing early warning and notification messages to responsible downstream emergency management authorities of the emergency situation. It also contains inundation maps to show the emergency management authorities of the critical areas for action in case of an emergency.

Mine operators should be required to attend training courses at MSHA Academy, ASDSO Training and other training available to learn dam inspection procedures and their responsibilities if a dam safety problem is detected during a routine inspection. Detailed inspections must be conducted at least annually and at completion of each construction phase by professional engineer(s) experienced in the design and construction of dams. Detailed inspections must include pictures, recommended maintenance items, assessment of the dam condition and be signed/sealed by the inspecting engineer.

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

ASDSO Recommendations: Routine and detailed inspections must include photographs, visual inspection of the dam and appurtenances for signs of instability, poor alignment of structures, vegetation, animal burrows, sinkholes, slips, bulges, cracks, fires, muddy water discharge, seepage, and vandalism.

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. Show citation box*

ASDSO Recommendations: Routine inspections should be accomplished in accordance with the frequency established in the Emergency Action Plan (EAP) approved by MSHA, i.e. daily, weekly, or monthly depending upon the condition of the dam. Inspections to be accomplished by personnel trained at the MSHA Academy, ASDSO Training and other training available for impoundment inspectors.

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. Show citation box*

ASDSO Recommendation: Frequency of instrumentation monitoring depends upon the condition and configuration of the dam combined with weather. Owners should begin with daily monitoring of weirs/piezometers, reservoir elevation, and rainfall until familiarity with how the dam responds to varying weather conditions is established. As familiarity is gained, the monitoring frequency may be altered to reflect the anticipated weather condition. For example once familiarity is gained, the dam should be inspected and instruments read at least once per week. When heavy rainfall occurs, monitoring frequency increases to daily or hourly until the reservoir has responded and returned to normal elevation. Operators should consult with their professional engineers for monitoring frequency recommendations. MSHA must approve the monitoring plan and frequency.

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

ASDSO Recommendations: Inspection documentation must include visual inspection and photographs of the dam and appurtenances for signs of instability, poor alignment of structures, vegetation, animal burrows, sinkholes, slips, bulges, cracks, fires, muddy water discharge, seepage, and vandalism. Photographs and written descriptions are required of general and specific items observed.

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. Show citation box*

16. *How often should detailed inspections be conducted? Please include your rationale. Show citation box*

ASDSO Recommendation: See Item # 10 above.

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

ASDSO Recommendation: See Item # 10 above.

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

ASDSO Recommendation: Requirement to submit routine and detailed inspection reports with pictures taken of the same locations through time should result in verification of on-going inspections. In addition, inspection records and daily reports kept by operators should be available for MSHA personnel conducting unannounced inspections to verify on-going inspection activity.

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. Show citation box

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. Show citation box*

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. Show citation box*

ASDSO Recommendation: Qualified civil engineers must be licensed through the state board of registration for engineers and demonstrate to MSHA at least 10 years of experience in dam design and construction through resumes and examples of accomplished dam safety projects.

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. Show citation box

ASDSO Recommendation: See Item # 20 above. Engineering technicians may monitor and document routine construction activity provided they are under the direct supervision of a qualified engineer. The qualified engineer should inspect and document all critical construction activities (see Item # 6 above).

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. Show citation box

ASDSO Recommendation: Annual training at the MSHA Academy, ASDSO Training and other training available in courses for impoundment inspectors should be required. Course content should include inspection and documentation procedures, Emergency Action Plan (EAP) responsibilities, and instruction regarding instrument reading.

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. Show citation box

ASDSO Recommendation: See Item # 20 above.

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. Show citation box.

ASDSO Recommendation: Breaching of waste disposal dams is usually impractical due to the volume of waste material behind the dam. "Abandonment" is generally defined as: to render a dam non-impounding by filling the reservoir created by that dam with solid materials and by diverting the natural drain way around the site. Actions operators should take include:

- a. Submit application to MSHA and state regulatory agencies including plans and specifications developed and signed/sealed by a qualified engineer (see Item # 20 above).
- b. Plans and specification to include placement of a surface cap of solid materials sloped from the central crest of the cap into the natural hillside to create a diversion ditch between the cap and the hillside. The ditch should be pitched to drain to one or both abutments with discharge to the natural drain way. The ditch should capture the natural stream above the dam and convey flow up to the 100 year, six hour duration storm around the site. Any stream capture pipe/culvert under the dam should be grouted closed with concrete. Vegetation must be established on the site prior to completion of abandonment activity. Fires must be extinguished. Embankment slopes must achieve adequate factors of safety (see Item 5 above).

- c. Following agency approvals, accomplish the abandonment plan using qualified construction personnel and monitoring by an engineer (see Item # 20 above). Inspection and documentation of construction must be provided by the owner's engineer (see Items # 6 and 21 above). As-built documentation must be provided by the engineer with certification that construction was accomplished in substantial conformance with the approved plans.

25. *How can MSHA verify that a mine operator has safely abandoned a dam? Show citation box*

ASDSO Recommendation: Verification through on-site construction and final construction inspections, plus documentation provided by the owner's engineer (see Item # 24 above).

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. Show citation box

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? Show citation box*

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. Show citation box*

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? Show citation box*

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. Show citation box*

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? Show citation box*

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). Show citation box*

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

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. Show citation box*

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. Show citation box*

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? Show citation box*

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. Show citation box*

**STATE DAM SAFETY PROGRAM REGULATION OF MINE WASTE DAMS, 2006-2008
ASSOCIATION OF STATE DAM SAFETY OFFICIALS**

2008

Source: Beacon Resources. 2009 State Dam Safety Program Performance Information Summary - Reporting Year: 2008. Prepared for NDSRB & ASDSO, July 2009.

Are there any structures meeting your definition of a dam in your State that are specifically exempted by Impoundment Type?

Alabama: No

Alaska: No

Arizona: Yes - Tailings or Mine Waste Dams

Arkansas: No

California: Yes - Canal obstruction, railroad fill, highway fill, circular tank, elevated tank, off-stream barrier for groundwater recharge, levees in the Sacramento-San Joaquin Delta, and off-stream sewage treatment pond.

Colorado: Yes - Highway embankments, tailings and mine waste facilities if permitted by other agencies, refuse embankments, siltation structures and structures with the storage below the natural ground surface

Connecticut: No

Delaware: No

Florida: No

Georgia: Yes - dams associated with surface mining are exempted, and federally owned and operated dams

Hawaii: No

Idaho: Yes - Levees that store water regardless of storage capacity

Illinois: No

Indiana: Yes - Coal mine dam regulated by MSHA

Iowa: No

Kansas: No

Kentucky: No

Louisiana: No

Maine: No

Maryland: No

Michigan: No

Minnesota: No

Mississippi: Yes - dams that do not impound a watercourse with a continuous flow of water

Missouri: No

Montana: No

Nebraska: No

Nevada: No

New Hampshire: No

New Jersey: No

New Mexico: No
New York: Yes - impoundments regulated by wastewater regulations
North Carolina: No
North Dakota: No
Ohio: No
Oregon: No
Pennsylvania: No
Puerto Rico: No
Rhode Island: No
South Carolina: No
South Dakota: No
Tennessee: Yes - Local or state government that owns a dam with a road on it but that did not build the dam cannot be held responsible for the dam (T.C.A. 69-11-124).
Texas: No
Utah: No
Vermont: No
Virginia: Yes - Dams permitted by DMME or federally owned or licensed dams
Washington: Yes - FERC Regulated Hydropower Dams
West Virginia: No
Wisconsin: Yes - dams associated with cranberry production are exempted from dam/dam safety laws
Wyoming: No

Does your State dam safety program regulate Tailings or Mine Waste Dams?

No: 18 Yes: 32

The following States responded No:

Alabama
Arizona
Connecticut
Delaware
Hawaii
Indiana
Kentucky
Louisiana
Maine
Maryland
Massachusetts
Montana
Nebraska
New York
Oklahoma
Puerto Rico

Texas
Virginia

2007

**SOURCE: Beacon Resources. 2008 State Dam Safety Program Performance Information Summary.
Reporting Year: 2007. Prepared for NDSRB & ASDSO. October 2008**

12. Does your State dam safety program regulate Tailings or Mine Waste Dams?

No: 16 Yes: 29

The following States responded No:

Arizona
Connecticut
Delaware
Hawaii
Indiana
Iowa
Louisiana
Massachusetts
Montana
New Hampshire
New Jersey
New York
Oklahoma
Puerto Rico
Texas
Virginia

Montana: Tailings dam permitting is handled under another state agency.

A. For what dams in your State do you have PERMITTING authority? (i.e. all jurisdictional dams, or only those that meet a specific criteria such as size, hazard potential, etc.):

Idaho: All water storage dams ten (10) feet or more in height OR maximum reservoir storage fifty (50) acre-feet or more. All mine tailings impoundment dams greater than thirty (30) feet height.

11. Are there any structures meeting your definition of a dam in your State that are specifically exempted?

Colorado: Yes: Highway embankments, tailings and mine waste facilities if permitted by other agencies, refuse embankments, siltation structures and structures with the storage below the natural ground surface

2006

**SOURCE: Beacon Resources. 2007 State Dam Safety Program Performance Information Summary.
Reporting Year: 2006. Prepared for NDSRB & ASDSO. August 2007**

J: Does your State dam safety program regulate Tailings or Mine Waste Dams?

No: 17 Yes: 32

The following States responded No:

Alabama
Arizona
Colorado
Connecticut
Delaware
Hawaii
Indiana
Kentucky
Louisiana
Montana
New York
North Dakota
Ohio
Puerto Rico
Virginia
West Virginia
Wisconsin

Comments/Clarification on Responses:

Connecticut: Connecticut does not have tailings or mine waste dams.

Florida: C. 62-672 and 62-673 are specific to the phosphates industries, mining and chemicals processing. All other industrial processes which produce liquid wastes are regulated via 403, Florida statutes.

Georgia: Tailings Dam are regulated, dams associated with surface mining are exempt.

Iowa: To date, we have received no applications for tailings dams.

Montana: we work closely with the MT DEQ on tailings dams, since they lack expertise on dams. We attend inspections, help with EAP's, provide training etc.

Ohio: All dams constructed in active mining areas are exempt from the dam safety regulations by statute. The statute does not specifically exempt tailings or mine waste dams, except where they are specifically in an active mining area.

Rhode Island: The Dam Safety Program is not aware of any such dams in RI, however, it has the authority to regulate all dams.

Wisconsin: State cannot regulate dams that are not on a watercourse.

Source:

Beacon Resources. 2010 State Dam Safety Program Performance Information Summary - Reporting Year: 2009. Prepared for the National Dam Safety Review Board and ASDSO, November 2010. 70 pp.

Background:

The objective of this report is to provide the raw data which was collected for the State Dam Safety Program Performance Questionnaire for the 2009 reporting year. This information consists of State responses to the combined annual questions asked by the National Dam Safety Review Board (NDSRB), the Association of State Dam Safety Officials (ASDSO) annual survey questions, and questions asked by the Department of Homeland Security (DHS) Dams Sector Branch and the Mine Safety and Health Administration (MSHA)*. This report provides background on the data collection effort, shows the States that contributed data, and provides the data which was collected in both summary and raw data formats. This report does not attempt to analyze the data or draw conclusions regarding the data or the National Dam Safety Program.

*MSHA Mining questions – New to this data collection:

8.1 Dams at coal mines

8.1.1 Do you have coal mines in your state?

8.1.2 Are dams at coal mines regulated by your State's Dam Safety Agency the same as other dams in the State?

8.1.3 If not, what State agency regulates the safety of dams at coal mines? Please provide contact information (name, phone, email) if known.

8.1.4 Do different State safety regulations apply to slurry impoundments at coal mines versus other types of dams (e.g. water supply dams) at such mines? If so, what regulations apply?

8.1.5 Does your state require an emergency action plan for dams at coal mines?

8.2 Dams at non-coal mines (i.e., metal mines, aggregate mines, etc.)

8.2.1 Do you have non-coal mines in your state?

8.2.2 Are dams at non-coal mines regulated by the State's Dam Safety Agency the same as other dams in the State?

8.2.3 If not, what State agency regulates the safety of dams at non-coal mines? Please provide contact information (name, phone, email) if known.

8.2.4 Do different State safety regulations apply to tailings dams at non-coal mines versus other types of dams (e.g., water supply) at such mines? If so, what regulations apply?

8.2.5 Does your state require an emergency action plan for dams at non-coal mines?

Section 8 - Mining

Comments/Clarification on Mining:

California: California is the only state in the US where surface mine reclamation is not regulated at the state level. Under the California Surface Mining and Reclamation Act of 1975, there are currently 109 lead agencies: 57 counties, 50 cities, the California Department of Water Resources and the California State Mining and Geology Board.

Kentucky: Mining dams are not regulated by Division of Water.

8.1 Dams at Coal Mines:

Comments/Clarification on Responses:

Tennessee: Questions 8.1.5 and 8.2.5 are poorly worded. Tennessee requires EAP's for all high hazard dams, regardless of their purpose. We don't require EAP's for dams just because they are associated with a mining operation.

8.1.1 Do you have coal mines in your state?

No: 25 Yes: 24

The following States Responded No

Arkansas	Nebraska
California	Nevada
Connecticut	New Hampshire
Delaware	New Jersey
Florida	New York
Georgia	North Carolina
Hawaii	Oregon
Idaho	Puerto Rico
Iowa	Rhode Island
Maine	South Carolina
Michigan	South Dakota
Minnesota	Wisconsin

Vermont

Comments/Clarification on Responses:

Montana: ash disposal ponds.

Nevada: Fly Ash disposal ponds exist and are regulated by dam safety program.

8.1.2 Are dams at coal mines regulated by your State's Dam Safety Agency the same as other dams in the State?

No: 10 Yes: 14

The following States Responded No

Arizona	Maryland
Colorado	Montana
Indiana	Ohio
Kentucky	Texas
Louisiana	Virginia

Comments/Clarification on Responses:

Colorado: In most cases, dams at coal mines are permitted by the CO Division of Reclamation Mining and Safety and/or the CO Department of Public Health and Environment depending on the size. If the dams are of jurisdictional size and pose a public safety hazard, they generally come under the jurisdictional of the CO Division of Water Resources, our Dam Safety Agency.

Indiana: by state statute these dams are exempt.

Louisiana: LA DEQ regulates these structures also.

Montana: Another agency is the lead, but DNRC MT Dam Safety standards are used and we work together.

North Dakota: Also regulated by the Public Service Commission and the North Dakota Department of Health. The North Dakota State Water Commission permits these dams, but we do not inspect them. They are inspected by the North Dakota Department of Health.

Utah: We do not have any slurry impoundments at coal mines in the state, but do have several process water dams.

West Virginia: WVDEP regulates coal and non-coal under the same statute, but different program sections

8.1.3 If not, what State agency regulates the safety of dams at coal mines? Please provide contact information (name, phone, email) if known.

State	Name	Phone	Email
Arizona	Federal agency (see comments)		
Colorado	CO Division of Reclamation Mining and Safety		
Indiana	DNR, Division of Reclamation		
Kentucky	Division of Mine Permits		
Louisiana	LA Department of Environmental Quality	Jason Meyers; 225-219-0791	jason.meyers@la.gov
Maryland	MDE LMA Bureau of Mines		
Montana	MT Department of Environmental Quality	Tom Ring, 406-444-6785	tring@mt.gov
Ohio	Ohio DNR - Mineral Resources Mgmt	Lanny Erdos, 614-265-1020	lanny.erdos@dnr.state.oh.us
Texas	Texas Railroad Commission		
Virginia	Mines, Minerals and Energy		

Comments/Clarification on Responses:

Arizona: Our coal mines are on tribal lands.

8.1.4 Do different State safety regulations apply to slurry impoundments at coal mines versus other types of dams (e.g. water supply dams) at such mines? If so, what regulations apply?

No: 12 Yes: 2

The following States Responded No

Alaska	North Dakota
Illinois	Oklahoma
Kansas	Tennessee
Mississippi	Utah
Missouri	Washington
New Mexico	Wyoming

Comments/Clarification on Responses:

Pennsylvania: Pennsylvania's Title 25, Chapter 90 Regulations "Coal Reference Disposal" provide parallel requirements and in some instances more stringent requirements for the regulation of coal slurry impoundments.

West Virginia: 47CSR34 - non coal; 38CSR04 – coal; WVDEP promulgated separate rules for coal & non-coal dams with equal technical requirements.

8.1.5 Does your state require an emergency action plan for dams at coal mines?

No: 5 Yes: 9

The following States Responded No

Alaska

Kansas

Oklahoma

Tennessee

Wyoming

Comments/Clarification on Responses:

Alaska: Only if dam is classified as a high or significant hazard potential.

Illinois: For High and Significant hazard structures.

Kansas: If the dam were to fail and inundate a home, highway, railroad or other item defined as a hazard in the significant or high hazard classification it would require an EAP. If nothing is inundated the dam would be considered low hazard because the slurry impounded in the reservoir is not considered a hazard per the regulatory definition.

Mississippi: If they are High or Significant Hazard.

North Dakota: EAPs are required for all dams capable of storing more than 1000 acre-feet, regardless of use. The statute and regulations regarding EAPs do not specifically refer to coal mines.

Oklahoma: Only if they are determined to be a high hazard potential structure.

Tennessee: Yes, if they are high hazard.

Washington: For those dams that are high or significant hazard.

8.2 Dams at Non Coal Mines (i.e., metal mines, aggregate mines, etc.)

Comments/Clarification on Responses:

Virginia: VA DCR does regulate some dams associated with waters used in the cooling, washing and other non-product operations.

8.2.1 Do you have non-coal mines in your state?

No: 14 Yes: 35

The following States Responded No

Arkansas	New Jersey
Connecticut	North Dakota
Delaware	Puerto Rico
Iowa	Rhode Island
Louisiana	Texas
Maine	West Virginia
Nebraska	Hawaii

Comments/Clarification on Responses:

Montana: silver, gold.

Nevada: Many and all types.

Vermont: One tailings dam for defunct copper mine.

West Virginia: Quarries exist, but no metal/non-metal mines.

8.2.2 Are dams at non-coal mines regulated by the State's Dam Safety Agency the same as other dams in the State?

No: 3 Yes: 32

The following States Responded No

Colorado
Kentucky
Montana

Comments/Clarification on Responses:

Colorado: See comment for 8.1.2.

Georgia: Dams associated with active surface mining are exempt from regulation, however other mining operations are not exempt.

Montana: Another agency is the lead, but DNRC MT Dam Safety standards are used and we work together.

Nevada: all

Utah: We do have several tailings dams at non-coal mines in the state.

Virginia: At non-product support dams.

Wisconsin: If they are on a watercourse. If they are not on a watercourse they would not be regulated as a dam in Wisconsin.

8.2.3 If not, what State agency regulates the safety of dams at non-coal mines? Please provide contact information (name, phone, email) if known.

State	Name	Phone	Email
Colorado	CO Division of Reclamation Mining and Safety		
Kentucky	Mines and Minerals		
Montana	Charlie Freshman	406-444-2005	chfreshman@mt.gov

8.2.4 Do different State safety regulations apply to tailings dams at non-coal mines versus other types of dams (e.g., water supply) at such mines? If so, what regulations apply?

No: 24 Yes: 8

The following States Responded No

California	North Carolina
Illinois	Ohio
Indiana	Oklahoma
Kansas	Oregon
Maryland	Pennsylvania
Michigan	South Dakota
Minnesota	Tennessee
Mississippi	Utah
Missouri	Washington
Nevada	Wisconsin
New Hampshire	Wyoming
New Mexico	Georgia

Applicable Regulations and/or Comments/Clarification on Responses:

Alaska: 11 AAC 93.172 applies in addition to remainder of Article 3 of 11 AAC 93.

Arizona: The State Mine Inspector's Office has regulations for tailing dams.

Florida: Chapter 62-672 Florida Administrative Code, Minimum Requirements for Earthen Dams Used In Phosphate Mining And Beneficiation Operations And For Dikes Used In Phosphogypsum Stack Impoundments. Only applies to dams related to the phosphate mining and beneficiation industry.

Idaho: If you really need this information, please read Idaho Code 42.1709 - 42.1921 and Idaho Administrative Procedures Act (Rules) 37.03.05 to obtain an unadulterated version.

Nevada: Provisions for different dam types/operating regimes are in the regulation. No "exceptions" per se are made. Additional regulation authority within other State programs for environmental and wildlife considerations and impacts.

New York: Mining

South Carolina: The State of SC does have Mining Regulations that apply for the environment, safety and operation of the mine.

Vermont: discharge permits for treated seepage.

Virginia: VA Mines, Minerals and Energy or DCR Dam Safety or Department of Environmental Quality.

8.2.5 Does your state require an emergency action plan for dams at non-coal mines?

No: 12 Yes: 20

The following States Responded No

Alaska	Oklahoma
California	Oregon
Indiana	Tennessee
Kansas	Vermont
Minnesota	Wyoming
North Carolina	Georgia

Comments/Clarification on Responses:

Alaska: Only if dam is classified as a high or significant hazard potential.

Florida: Only applies to dams related to the phosphate mining and beneficiation industry.

Georgia: The Georgia Safe Dams Act does not require or give authority to require Emergency Action Plans.

Idaho: Depends on the perceived hazard classification.

Illinois: For High and Significant hazard structures.

Kansas: If the dam were to fail and inundate a home, highway, railroad or other item defined as a hazard in the significant or high hazard classification it would require an EAP. If nothing is inundated, the dam would be considered low hazard

because any hazardous material impounded in the reservoir is not considered a hazard the regulatory definition.

Minnesota: Only required if the dam is a high hazard.

Mississippi: If they are High or Significant Hazard.

Nevada: Same manner as all other dams

New Hampshire: Any Significant or High hazard dam requires an EAP.

New York: If a dam exists, it is subject to our regulations, regardless of location.

Oklahoma: Only if they are classified as a high hazard potential structure.

Oregon: EAP's are required if the dam is classified high hazard.

South Dakota: High Hazard dams only.

Tennessee: Yes, if they are high hazard.

Virginia: If the dam is regulated by VA DCR Dam Safety the dam owner is required to submit an emergency action plan for High and Significant Hazard Dams and an emergency preparedness plan for Low Hazard Dams.

Washington: For significant or high hazard dams.

Wisconsin: If they are on a watercourse.