

Dam Safety Regulatory Advisory Panel
Tuesday, July 23, 2024
Department of Environmental Quality, Piedmont Regional Office, Glen Allen, Virginia

TIME AND PLACE

The meeting of the Dam Safety Regulatory Advisory Panel (RAP) took place at 9:00 a.m. on Tuesday, July 23, 2024, at the Department of Environmental Quality's Piedmont Regional Office in Glen Allen, Virginia.

DAM SAFETY REGULATORY ADVISORY PANEL MEMBERS PRESENT

John Kirk, alternate for Jacob Compton, Department of Wildlife Resources
David Krisnitski, AMT Engineering
Dipmani Kumar, Fairfax County Watershed Planning and Evaluation Branch
Amanda Lothes, Newport News Waterworks
Lisa Ochsenhirt, AquaLaw
Maridee Romero-Graves, Schnabel Engineering
Adrienne Shaner, Hazen and Sawyer

DAM SAFETY REGULATORY ADVISORY PANEL MEMBERS NOT PRESENT

Drew Hammond, Department of Transportation
James Lang, Pender & Coward

DCR STAFF PRESENT

Darryl Glover, Deputy Agency Director
Lisa McGee, Policy Director
Taylor Melton, Executive Assistant to the Director's Office
Brent Payne, Dam Safety Regional Engineer
Paul Saunders, Senior Policy Analyst
Andrew Smith, Chief Deputy Director
Christine Watlington-Jones, Policy and District Services Manager
Matthew Wells, Director
Charles Wilson, District Dam Engineer

OTHERS PRESENT

Chris Lynch, InoVA Geoengineering

WELCOME AND INTRODUCTIONS

Mr. Glover welcomed members and guests to the meeting and asked Director Wells to provide opening remarks. Director Wells emphasized the importance of dam safety, noting that only a few hours after he started his job at DCR he had to deal with a dam failure that was thankfully resolved without issue. He

said that in that instance they got lucky, but that luck is not a strategy. He stated that DCR has made tremendous strides in dam safety, particularly with regard to identifying dam owners, hazard classification, and compliance. DCR's goal is to establish a regulatory structure that supports safety but is also reasonable and easy to comply with, as the financial cost of compliance can be an issue for owners. Director Wells thanked the panel members for their willingness to engage in this process.

Mr. Glover noted that DCR engineers Brenton Payne and Charles Wilson were attending the meeting to help answer questions but are not voting members on the panel. After each meeting, his team will debrief with staff to take in all the information that was discussed, determine whether it is necessary to further investigate particular items or topics, and then follow up with the panel.

OBJECTIVES AND PROCESS

Mr. Glover said that the goal of the RAP is to develop recommendations for amendments to the dam safety regulations. A parallel workgroup is meeting to propose legislative amendments to the Dam Safety Act (Act). He anticipates that some suggestions from the RAP will be beyond the authority of the Act, but that this input will be relayed to the workgroup for consideration on amendments to the Act.

Mr. Glover noted that amendments to the Dam Safety Act that are developed by the Workgroup will, with administration approval, be introduced in the 2025 General Assembly session. Depending on the success of the potential legislation, there will likely need to be an additional regulatory action in the future.

REVIEW OF RESULTS OF THE PERIODIC REVIEW

Ms. Watlington-Jones stated that the review process started last December after the Virginia Soil and Water Conservation Board (VSWCB) directed DCR to initiate a periodic review. The periodic review opened on December 18, closed on January 8, and resulted in 12 comments from the public. Many of these comments were outside of regulatory scope. However, there were consistent comments regarding certain issues and concerns identified by DCR that are being addressed through this process. Addressing these key issues and concerns represent a manageable and realistic workload.

REVIEW OF NOTICE OF INTENDED REGULATORY ACTION

Ms. Watlington-Jones stated that in response to the periodic review comments and additional concerns from staff, the VSWCB issued a Notice of Intended Regulatory Action (NOIRA) on March 27 to consider concerns related to : (i) roadways on or below an impounding structure for hazard potential classifications; (ii) the incremental damage analysis process; (iii) the potential expansion of special criteria low hazard dams; and (iv) simplifying the emergency preparedness plan requirements. The NOIRA's 30-day public comment period resulted in two comments about septic systems, and several requests to serve on the RAP.

The goal of this process is to take the proposed regulatory changes to the December meeting of the VSWCB for consideration.

REVIEW AND DISCUSSION OF CURRENT REQUIREMENTS FOR LOW HAZARD DAMS

Mr. Glover referred the panel to 4VAC-50-20-40 (B)(3) which states that “Low Hazard Potential is defined where an impounding structure failure would result in no expected loss of life and would cause no more than minimal economic damage. ‘No expected loss of life’ means no loss of human life is anticipated.” He noted that special low hazard dams are a subcategory where the damage would only impact the dam owner’s property, and that this distinction would still be maintained after the review.

Mr. Glover offered the following questions to frame the discussion: if a low hazard dam is defined as causing minimal damage if it fails, then what is reasonable to require from them? Why can’t all low hazard dams be given a general permit instead of a certificate? Why should low hazard dams need an incremental damage analysis (IDA) in order to reduce the size of a spillway? If low hazard dams are only going to cause minimal damage, why couldn’t owners simply obtain insurance to cover it?

4VAC50-20-101 (General Permit Requirements for Low Hazard Potential Impounding Structures)

Mr. Glover referred to subsection 1, which states that “the spillway design of the owner’s impounding structure shall be able to safely pass a 100-year flood. When appropriate, the spillway design flood requirement may be further reduced to the 50-year flood in accordance with an incremental damage analysis conducted by the owner’s engineer.” He asked why we would need an IDA when instead we could simply determine the maximum flood that the spillway can handle and just leave it at that. Mr. Krisnitski responded that he liked the language as it is and did not see any issues with requiring an IDA.

Mr. Payne noted that there are a tremendous number of low hazard dams and achieving compliance is difficult for many of them due to financial constraints and site considerations. One idea is for low hazard dams that have no structures downstream and no potential for harm other than environmental impact to be classified as an additional category of special low hazard dams, with either limited or no spillway requirements. Mr. Kirk said that DWR would support that idea as it would allow them to devote more of their resources to high hazard dams.

Mr. Glover, rephrasing his original question, asked whether we consider reducing the spillway requirement from 100 years to 50 years. Mr. Krisnitski responded that he still likes the 100-year requirement because of the potential for future developments downstream, and Mr. Kumar agreed.

Mr. Glover asked what exactly the IDA is telling us if there are going to be limited impacts caused by a low hazard dam failure. Mr. Krisnitski responded that it tells us there will be some damage downstream even if it is not much.

Ms. Lothes noted that one of their dams which was previously a special low hazard had to be reclassified because of the development of a garden and a pier downstream. Reducing the spillway requirement to 50 years could help make it easier and less costly for owners to make the changes or upgrades needed to meet the requirement.

4VAC50-20-102 (Registering for Coverage Under the General Permit for Low Hazard Potential Impounding Structures)

Mr. Glover asked whether we could reduce the 100-year requirement to 50 years, and at the same time require the owners to obtain insurance to cover the cost of damages from up to a 100-year flood?

Mr. Krisnitski doubted that the insurance would be cost-effective as the rates would be very high. He added that he likes having the insurance requirement only for high hazards, and that extending it to low hazards would be overly complicated. Mr. Kirk agreed and suggested that in Ms. Lothes's example, purchasing the garden and pier would likely cost less than the insurance would.

Mr. Wilson wondered whether the words "spillway design flood" in the regulatory language might be confusing. The regulatory requirement is that a low hazard dam must safely pass a 100-year flood without significant damage. If a 100-year flood is modeled, assuming the dam fully fails, and the model still results in a low hazard classification for that dam, does it really matter what the spillway requirement is? In that situation, no matter what the IDA says, it still would not make much difference because there would not be significant damage from the failure.

Mr. Glover noted that there is a need to initially confirm a dam is low hazard, rather than simply taking the owner's word for it. Therefore, a dam break inundation zone map is needed. If after developing a dam break inundation zone map a dam met the possible expanded criteria to be classified as a special low hazard, then the owner could be issued a general permit.

Mr. Glover asked if anyone disagreed with the concept of expanding the definition of special low hazard dams as explained by staff. Hearing no disagreement, he moved on to the next item on the agenda.

4VAC50-20-51 (Special Criteria for Certain Low Hazard Impounding Structures)

Mr. Glover noted that the decision made on the previous items may affect what the group decides to do with this item, which centers on the criteria for special low hazard dams. Currently, no map is required for these dams, but based on the prior conversation, the RAP appears to prefer a map to be required to ensure the dam is low hazard. He asked if the group felt that the spillway requirement should be 50 years if no roadways or structures are damaged downstream. Mr. Wilson suggested not having any spillway requirement, but rather modeling a 100-year failure so that if the dam was able to safely pass that level of flood without damaging roadways or structures downstream, it would qualify as a special low hazard. Mr. Krisnitski said that to apply this, we would have to determine that the dam is low hazard through some kind of simplified study. Mr. Kirk said it could be cost prohibitive to do studies on every low hazard dam. Mr. Payne mentioned that the regional engineers have to evaluate special low hazards when they are eligible for recertification and typically completed a simplified study anyway.

Mr. Glover proposed inserting language into the special criteria section about modeling a 100-year failure, as Mr. Wilson suggested earlier. Ms. Romero-Graves noted that it can be expensive to build the models but that once they are built it does not take too long to run different scenarios, like a 100-year flood. Mr. Wilson noted that he is concerned for owners of low hazard dams that do not currently meet these requirements and the potential costs of developing the maps.

Mr. Payne noted that DCR is currently rebooting its simplified study program and is developing a pre-screening process where a very conservative approach is used to quickly and easily determine whether a dam is low hazard. He also pointed out that most simplified studies do use DSS-WISE, but that they have been considering using a more adaptive process to provide more detail.

Mr. Glover, adding on to Mr. Wilson's point, stated that because staff have made significant progress on identifying dams for the Dam Safety Inventory System (DSIS), there will be hundreds of existing dams that will need to be classified for the first time. Many of these dams will be low hazard. Mr. Glover noted that we must think about what is fair and rational to ask of these dam owners when they are working towards certification. Mr. Krisnitski said that if their dams meet the size requirement then they should do a simplified study through DCR.

Mr. Glover asked whether we should require a dam break inundation zone map. Ms. Romero-Graves said that we should. Mr. Payne suggested removing section 51(A)(1) entirely so that special low hazard dams would be subject to the same map requirements as other low hazard dams. Mr. Krisnitski said that he would expect the cost of DCR's simplified mapping to increase. Mr. Gemechu said that it is a lot quicker and easier to complete these maps now than it has been in the past, and the results are much more accurate. Ms. Romero-Graves suggested even a shape file and a simplified map would be sufficient.

Mr. Glover asked what acceptable documentation for special low hazards would be. Mr. Payne said he would be comfortable with either a simplified study or a regular inundation map. He cautioned against creating a separate process for special lows in order to keep it simple and straightforward for both the owners and DCR. Ms. Romero-Graves agreed. Mr. Glover asked if the panel was okay with removing section 51 (A)(1) and requiring either a simplified study or an inundation map, and the panel responded in the affirmative.

Having already discussed section 51(A)(2), Mr. Glover moved to section 51(A)(3), which states that no emergency preparedness plan (EPP) is necessary for special low hazards, and asked if the group felt that was reasonable. Mr. Kirk said that if we expand the scope of special lows so that a roadway may be downstream, he feels uneasy about not having an EPP. Mr. Payne clarified that under the new definition the downstream roadways would not be damaged in the event of dam failure. MS. Watlington-Jones noted that section 177 of the regulations requires the dam owners to have some procedure in place to notify individuals who would be impacted by a dam failure.

4VAC50-20-177 (Emergency Preparedness Plan for Low Hazard Impounding Structures)

Mr. Payne suggested striking section 51(A)(3) entirely because completing an EPP is fairly simple. Mr. Kirk said that at minimum we would need 177(4) which requires procedures for notifying downstream property owners or occupants. Mr. Krisnitski suggested striking the word “no” in section 51(A)(3) and replacing it with the word “an” so an EPP is still explicitly required. Mr. Glover added that we should also strike the word “however” and replace it with a period to start a second sentence at “the”.. Mr. Payne suggested further modifying 51(A)(3) to require an EPP only when driveways are impacted. The group agreed with this suggestion.

Ms. Lothes said that while it can appear simple to fill out an EPP using DCR’s form, it is often more complex. For example, two of her low hazard dams are split between multiple counties which complicates things significantly.

Ms. Lothes asked why 177(3)(b) requires the actual name or names of city or county emergency services coordinators instead of simply directing people to call emergency services. Mr. Payne agreed and proposed changing the language to direct people to call 911.

Mr. Glover suggested copying subsection 4 from section 177 and replacing 51(3) with it, so that an EPP would not be required for special low hazards but there would still need to be established procedures for notifying downstream property owners and occupants. The group supported this suggestion.

Return to 4VAC50-20-51 (Special Criteria for Certain Low Hazard Impounding Structures)

Mr. Payne highlighted 51(A)(4) which requires annual inspections of special lows and noted that very few inspection records are provided to DCR. He asked whether the panel thought these inspections should be submitted to DCR. Mr. Kirk suggested the dam owners keep records of the inspections so that they can be submitted as part of the renewal process, if not annually. Mr. Wilson added that his reading is that subsection (A)(4) only requires owners to perform the inspection, not to submit the results.

After some discussion, Mr. Wilson suggested modifying 51(A)(4) to be more consistent with the general permit inspection requirements. Mr. Payne asked to clarify whether we are requiring professional engineer (PE) inspections. Since general permits must be renewed every six years, Mr. Glover asked whether we wanted to have a PE inspection at that time. Mr. Krisnitski said that this would be imposing a cost, and Mr. Glover responded yes but that it would be balancing public safety. Mr. Krisnitski said that he is reluctant to make dam owners hire a PE every six years for a general permit but is unsure how else they could ensure the dam’s conditions are unchanged.

Mr. Wilson responded that, every dam should have an inspection conducted by a PE inspection at some point in its lifetime. Ms. Romero-Graves said she felt it was still important to do an inspection, but suggested the language could be changed to be more generic rather than requiring a PE.

In section 51(C), which requires the owner to notify DCR of any changes that would affect hazard classification, Mr. Wilson suggested having an engineer certify the status of the dam every six years

instead. This, he said, would alleviate some of the concerns about not having a PE inspect the dam each year. Mr. Payne suggested that rather than merging the special low hazard discussion with the general permit discussion, we could instead just keep it under the certificate process.

Mr. Wilson asked if Ms. Watlington-Jones knew the historical background of section 51Ms. Watlington-Jones confirmed that the idea was if an owner's property is the only thing impacted by the dam, why should they have to go through the process of hiring a PE for an inspection.

The question was asked whether there is any need for an engineer in the first place for these special low hazard dams. Mr. Kirk said that having a PE at least sign the certification or permit application would give reviewers additional confidence that the information is accurate. Ms. Watlington-Jones noted that to reapply for a general permit, an owner has to resubmit the registration statement; as part of that statement, a certification that the dam is still low hazard based on the determination of either DCR or a PE is required. Mr. Glover said that given the number of dams that will soon need to be classified, many of them likely to be low hazard, he is sensitive to the workload that would be imposed on DCR staff should we remove PEs from the process.

Mr. Glover stated that because the panel was not in agreement on 51(C), we would table the discussion for now and directed members to submit any additional thoughts or concerns to him after the meeting.

PUBLIC COMMENT

None

NEXT MEETINGS

Mr. Glover stated that the panel will meet August 27, 2024, September 17, 2024, October 29, 2024, and November 12, 2024, and that all meetings will be held at the same location.

ADJOURNMENT

There being no further business, Mr. Glover adjourned meeting at 11:13 a.m.