

**WEST VIRGINIA  
SECRETARY OF STATE  
BETTY IRELAND  
ADMINISTRATIVE LAW DIVISION**

Form #3

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2007 JUL 26 PM 3:13

OFFICE OF WEST VIRGINIA  
SECRETARY OF STATE

**NOTICE OF AGENCY APPROVAL OF A PROPOSED RULE  
AND  
FILING WITH THE LEGISLATIVE RULE-MAKING REVIEW COMMITTEE**

AGENCY: Department of Environmental Protection, DWWM *Ofc. of Water Resources* TITLE NUMBER: 47

CITE AUTHORITY: WV Code 22-14-19(c)

AMENDMENT TO AN EXISTING RULE: YES  NO

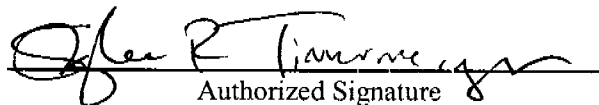
IF YES, SERIES NUMBER OF RULE BEING AMENDED: 34

TITLE OF RULE BEING AMENDED: Dam Safety Rules

IF NO, SERIES NUMBER OF RULE BEING PROPOSED: \_\_\_\_\_

TITLE OF RULE BEING PROPOSED: \_\_\_\_\_

THE ABOVE PROPOSED LEGISLATIVE RULE HAVING GONE TO A PUBLIC HEARING OR A PUBLIC COMMENT PERIOD IS HEREBY APPROVED BY THE PROMULGATING AGENCY FOR FILING WITH THE SECRETARY OF STATE AND THE LEGISLATIVE RULE-MAKING REVIEW COMMITTEE FOR THEIR REVIEW.

  
Authorized Signature

**QUESTIONNAIRE**

*(Please include a copy of this form with each filing of your rule: Notice of Public Hearing or Comment Period; Proposed Rule, and if needed, Emergency and Modified Rule.)*

DATE: July 26, 2007

TO: LEGISLATIVE RULE-MAKING REVIEW COMMITTEE

FROM: *(Agency Name, Address & Phone No.)* Department of Environmental Protection  
601 57th Street SE  
Charleston WV 25304  
304-926-0499

LEGISLATIVE RULE TITLE: Dam Safety Rule

1. Authorizing statute(s) citation WV Code 2-14-19(c)

2. a. Date filed in State Register with Notice of Hearing or Public Comment Period:

June 5, 2007

b. What other notice, including advertising, did you give of the hearing?

None

c. Date of Public Hearing(s) *or* Public Comment Period ended:

July 11, 2007

d. Attach list of persons who appeared at hearing, comments received, amendments, reasons for amendments.

Attached     X     No comments received

- e. Date you filed in State Register the agency approved proposed Legislative Rule following public hearing: (be exact)

July 26, 2007

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- f. **Name, title, address and phone/fax/e-mail numbers** of agency person(s) to receive all *written correspondence* regarding this rule: (Please type)

Mike Zeto

Department of Environmental Protection

601 57th Street SE

Charleston WV 25304

304-926-0499 ext 1324

304-926-0488 fax

mzeto@wvdep.org

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- g. **IF DIFFERENT FROM ITEM 'f'**, please give **Name, title, address and phone number(s)** of agency person(s) who wrote and/or has responsibility for the contents of this rule: (Please type)

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3. If the statute under which you promulgated the submitted rules requires certain findings and determinations to be made as a condition precedent to their promulgation:

- a. Give the date upon which you filed in the State Register a notice of the time and place of a hearing for the taking of evidence and a general description of the issues to be decided.

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b. Date of hearing or comment period:

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c. On what date did you file in the State Register the findings and determinations required together with the reasons therefor?

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d. Attach findings and determinations and reasons:

Attached 

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**DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**BRIEFING DOCUMENT**

**Rule Title: Dam Safety Rule**

**A. AUTHORITY:**

**W. Va. Code 22-14-19(c)**

**B. SUMMARY OF RULE:**

Establishes requirements to govern the disbursement and use of moneys held in the state Dam Safety Rehabilitation Revolving Fund. The Fund shall be used solely to make loans to persons who own an interest in a deficient dam to finance the engineering, design, alteration, improvement, repair, breaching or removal of the deficient dam necessary to correct or remove the deficiencies and other activities as authorized by a federal grant or a legislative appropriation and to defray costs incurred by the department in administering the Fund.

**C. STATEMENT OF CIRCUMSTANCES WHICH REQUIRE RULE:**

The proposed revisions establish requirements governing the disbursement and use of moneys in the Dam Safety Rehabilitation Revolving Fund, authorized by SB 465 in the 2007 legislative session.

**D. FEDERAL COUNTERPART REGULATIONS - INCORPORATION BY REFERENCE/DETERMINATION OF STRINGENCY:**

**None.**

The rule revisions are no more or less stringent than the federal counterpart regulations.

**No counterpart federal regulations exist.**

**E. CONSTITUTIONAL TAKINGS DETERMINATION:**

**In accordance with §22-1A-1 and 3(c), the Secretary has determined that this rule will not result in taking of private property within the meaning of the Constitutions of West Virginia and the United States of America.**

**F. CONSULTATION WITH THE ENVIRONMENTAL PROTECTION ADVISORY COUNCIL:**

**At its meetings on May 21, 2007, and May 30, 2007, the Environmental Protection Advisory Council discussed this rule. (See attached minutes for Council's discussion.)**

**ADVISORY COUNCIL MEETING MINUTES**

Wednesday – May 30, 2007

10:00 a.m. – 12:00 p.m.

601 57<sup>th</sup> Street, SE, Charleston, WV

West Virginia Room – 3<sup>rd</sup> Floor

**ATTENDEES:**

**Advisory Council Members:**

Rick Roberts  
Karen Price  
Bill Raney  
Larry Harris - Teleconference  
Jackie Hallinan

**DEP:**

Randy Huffman, Deputy Cabinet Secretary/Director –Division of Mining & Reclamation  
Karen G. Watson, Assistant General Counsel  
Lisa McClung, Director – Division of Water and Waste Management  
John Benedict, Director – Division of Air Quality  
Jessica Greathouse, Chief Communication Officer – WVDEP – Public Information Office  
Pam Nixon, Advocate  
Jim Mason, DAQ  
Mike Zeto, DWWM – EE  
John Morgan, DWWM  
Scott Mandirola, DWWM  
Greg Adolfson, PIO

**VISITORS:**

Dave Yaussy  
Brittany Carns  
Joe Gollehon  
Gregory Hoyer  
Jeff Mauzy  
Amy Christy

Randy Huffman, Deputy Cabinet Secretary - West Virginia Department of Environmental Protection called the meeting to order at 10:00 a.m. Advisory Council Member Larry Harris joined the meeting via teleconference. Deputy Cabinet Secretary Huffman then turned the meeting over to Karen Watson, Assistant General Counsel for the West Virginia Department of Environmental Protection. Karen informed the Council that the agency had received comments from several Council members and those comments would be appended to the minutes. (see attached) She explained the agency

had representatives from each of the programs to answer questions for the rules identified in those comments. She also explained the agency had made several changes in the rules as a result of those comments.

## **Air Quality**

### **45CSR6 – Control of Air Pollution from Combustion of Refuse**

#### **SUMMARY**

Proposed Rule 6 is now a basic open burning/ incinerator rule. Revised scope includes ‘statutory air pollution,’ addition of new language for posted operating instructions and open burning or incineration of animal or poultry carcasses during a declared state of emergency. Except for temporary Air Curtain Incinerators for land clearing debris (DOH jobs) and incineration of animal or poultry remains, most Air Curtain Incinerators will now be exempted under Rule 6 and placed under Rule 18.

#### **COMMENT**

Larry Harris: Had raised the issue of “low-level radioactive waste” in the last meeting.

*DEP Response: DEP has removed the chemotherapeutic waste and low-level radioactive waste provisions from the proposed rule. The proposed rule does not in any way affect current medical waste incineration rules now on the books.*

### **45CSR8 – Ambient Air Quality Standards**

#### **SUMMARY**

NAAQS rules 45CSR8, 45CSR9 & 45CSR12 have been combined for the 2008 legislative session. Rule 8 is now the complete NAAQS incorporation by reference rule, and 45CSR9 & 45CSR12 will be repealed and replaced. Revisions to SO<sub>2</sub> & PM NAAQS include correction of SO<sub>2</sub> annual primary standard from 0.003 to 0.030 ppm, addition of annual and 24-hour PM<sub>2.5</sub> standards, and addition of measurement methods for PM<sub>2.5</sub>. Revisions to CO & Ozone NAAQS include revocation of one-hour ozone standard except for Berkeley & Jefferson counties, identification of one-hour ozone maintenance areas, and addition of 8-hour primary and secondary ozone standards. Revisions to NO<sub>2</sub> and Lead NAAQS include addition of primary and secondary standards for lead, and addition of measurement methods for lead. Revisions also include general language updates, improved citing and consistency.

#### **COMMENT**

Karen Price: Section 4.2.c – PM<sub>2.5</sub> Maximum 24-Hour Average Concentration. The level for the 24-hour primary and secondary standard states 35 ug/m<sup>3</sup>. This should be 65 ug/m<sup>3</sup>, pursuant to 40 CFR 50.7.

*DEP Response: On October 17, 2006, the federal NAAQS regulation changed from 65 to 35.*

Larry Harris: Restated his concern that the standards may not be stringent enough to protect public health. He also restated his question about the anti-degradation language struck from the rule.

*DEP Response: DEP cannot lower the NAAQS standards below that of federal levels unless the provisions for the stringency test in §22-1-3a are fully met. 45CSR14, in its entirety, has wholly replaced the intent of the relic anti-degradation language struck in proposed Rule 8.*

#### **45CSR39 – Control of Annual Nitrogen Oxides Emissions**

#### **45CSR40 - Control of Ozone Season Nitrogen Oxides Emissions**

Ozone Season CAIR NOx Rule - Incorporates revisions 40 CFR to Part 96.

Annual CAIR NOx Rule - Incorporates revisions to 40 CFR Part 96.

#### **45CSR41 – Control of Annual Sulfur Dioxide Emissions**

Annual CAIR SO<sub>2</sub> Rule - Incorporates revisions to 40 CFR Part 96.

#### **COMMENT**

Karen Price: Asked why the opt-in language was deleted from each of these rules.

*DEP Response: has removed the opt-in provisions in the three CAIR rules so that West Virginia can say that CAIR equals NOx RACT for EGUs under the PM2.5 implementation rule.*

#### **45CSR42 – Greenhouse Gas Emissions Inventory Program**

#### **SUMMARY**

The Greenhouse Gas Inventory Program Rule is authorized by SB337 passed in the 2007 legislative session. The rule establishes a program which requires the reporting and inventory of greenhouse gas emissions by stationary sources which emit more than a *de minimis* amount; inventories greenhouse gas emissions from stationary, area, mobile and biogenic sources, and accounts for reductions, capture and sequestration; provides for: a periodic compilation of a greenhouse gas inventory; a determination whether WV is a net sink or emitter; development of a registry for voluntary reductions; and a determination whether greenhouse gas can be developed as an asset for economic development.

#### **COMMENT**

Karen Price and Larry Harris: Both asked about the definitions of “anthropogenic” and “biogenic” in the rule and asked for examples of each.

*DEP Response: An example of an anthropogenic source is the coal extraction process and an example of a biogenic source is the erosion of soil exposing a coal seam. The agency does not plan*

*to ask sources to report biogenic activities. In order to receive credit a source must report all of its emissions.*

Karen Price: Can the reporting requirement in section 4.1 be made consistent with the emissions inventory requirements.

*DEP Response: The date in the rule is March 31<sup>st</sup> and is the same as the emissions inventory date.*

Karen Price: Does not believe fees should be required for greenhouse gas reporting.

*DEP Response: The agency will consider the issue.*

Karen Price: The last sentence in section 5.3 allowing the Secretary to request information is not authorized by statute.

*DEP Response: It is authorized by the statute.*

Karen Price: There should be a reasonable protocol for reporting emissions.

*DEP Response: DAQ purposely wrote the rule in a manner flexible to the Secretary, as greenhouse gas reduction quantification protocols are still being developed at this time.*

Karen Price: Is WV going to sign on to the climate registry or are we going to have our own?

*DEP Response: In order to trade, we have to be consistent with other programs, but we do not want to be more specific in the rule.*

Bill Raney: The exemption in section 3.2 includes language referring to sources covered by chapter 22-3 as well as sources required to report emissions. We are concerned this may take the exemption in the statute away.

*DEP Response: While the agency did not want to require mining extraction to report emissions, thermal dryers associated with coal prep plants often have huge emissions of greenhouse gases. That is the reason the statute and rule only exempt sources permitted under chapter 22-3.*

## **Division of Water and Waste Management**

### **33CSR9 – Standards for Beneficial use of Filtrate from Water Treatment Plants**

#### **SUMMARY**

This legislative rule establishes a mechanism and requirements for the permitting, siting, bonding, and use of water treatment plant sludge from water treatment plants that has beneficial properties. This rule applies to the beneficial use of water treatment plant sludge and to any person who seeks approval from the Secretary to beneficially use such sludge within the state. This rule is intended to enhance the resource recovery and recycling goals of article fifteen of chapter twenty-two of the West Virginia Code and to encourage the beneficial use of water treatment plant filtrate. Section 22-

15-23 of the West Virginia Code and this rule, and not the provisions of W. Va. Code § 22-15-10 or 33 CSR 1, shall govern the beneficial use of water treatment plant sludge. This rule does not apply to sewage sludge, products derived from sewage sludge, sludges regulated under 33 CSR 8, or materials regulated as hazardous waste under W. Va. Code §§22-18-1, et seq.

## **COMMENT**

Larry Harris: DEP made changes to this rule during the Interims process last year, and the rule now requires a permit for both short-term and long-term applications. This is a good change. However, we feel that most of the information required in Section 7.3. Permit Application Requirements for long-term permits should also be required for short-term permits.

*DEP Response: The requirements of section 7.3 were intended to be directed toward facilities that proposed to land apply filtrate as the beneficial use. It was intended to be applicable to both, if land application was the proposed method of reuse. Section 7.3 will be revised to more clearly reflect the applicability of the requirement for both long-term and short-term, if land application is the proposed beneficial reuse.*

Rick Roberts and Larry Harris: Regarding the environmental effects of disposal of sludge are the values in Table 1 of the rule sufficient?

*DEP Response: The Table 1 values are the same as the sewage sludge levels in DEP's other rules, and the agency believes they are supported by sound science.*

Rick Roberts and Larry Harris: Mr. Harris expressed concern with the distinction between "beneficial reuse" and "disposal." Mr. Roberts believes that his concern is satisfied by the language in section 3.1.b.1.

Rick Roberts: The rule should include general permits as proposed.

Larry Harris: Only individual permits should be allowed under the rule.

*DEP Response: There will be public notice in the general permit process.*

## **33CSR30 – Underground Storage Tanks**

### **SUMMARY**

There are several new provisions to reflect the 2005 Federal Energy Act, including: secondary containment requirements for new or replaced tanks or piping; secondary containment requirements for new or replaced fuel dispenser systems; tank eligibility for delivery, deposit or acceptance – enables agency to prevent deposit or delivery to a tank that is not in compliance; and training requirements for individuals who operate, maintain or are responsible to address emergencies from spills or releases from underground storage tank systems.

### **COMMENT**

Karen Price: Section 6.1. states "...including any person who accepts a delivery order, accepts payment, delivers or deposits product into an underground storage tank.....". The portion that states "...accepts payment..." should be removed from this section because those individuals within a company who accept payment or make payments most often do not know anything about the underground storage tank (UST), the operation of the UST, or the current regulatory status of the UST.

*DEP Response: This language will give the agency a better handle on transporters and middle-men involved in the process.*

Karen Price: Section 7.3.a.1. states "...the methodology for verifying attendance, the date, time and location of the course, the name of the offering organization, the credentials of the instructors, and a certification that the technology or methods.....".

1. The portion that states "...the date, time and location of the course,...." should be deleted. For large companies with many UST installations and locations there can be numerous individuals that need to be trained. Training will most likely occur on multiple dates, times, and locations that may not always be known until just prior to the training event. When new employees are hired training might occur on short notice and for one individual. The burden of having to report the dates, time and locations would hinder and slow down the training process and restrict a company's ability to comply.

2. The portion that states "...the credentials of the instructors..." should be removed. Credentials will vary from instructor to instructor new instructors might be utilized, and a company might not know which instructors will be used at the various training sessions until just prior to the training session. In addition, the course content is the main issue of concern and should be the main focus in obtaining State approval of a training program.

*DEP Response: Regarding dates, times and location of the training the agency will not require the information prior to the training. As far as the credentials of the instructor the agency needs this information as part of its curriculum review, in this case before the training.*

Karen Price: Section 7.3.a.2 - This section states that a nonrefundable application fee of \$280 must be submitted with the application. Larger companies may have one training program, but administer the training on multiple dates, times and locations. Having to submit an application for approval of the training program each time the program is administered would be cost prohibitive, burdensome, and would hinder the training process.

*DEP Response: The agency agrees and believes the rule only requires a one-time fee.*

Rick Roberts: Regarding the \$5.00 per ton fee, how does a source measure the tonnage? Perhaps the agency should consider using a cubic-yard approach.

*DEP Response: The agency will consider.*

## **47CSR2 – Requirements Governing Water Quality Standards**

### **SUMMARY**

The proposed revisions reflect updates identified during the federally-mandated triennial review of the Water Quality Standards rule. These include proposed additions to the trout water list, new criteria for nutrients, revisions to criteria in Appendix E and a use redesignation in the Guyandotte River Basin.

### **COMMENT**

Larry Harris: Does the use removal in section 7.2.d follow the federal Clean Water Act requirements?

*DEP Response: Yes, the agency followed all the requirements, federal and state, and required extensive information from the company. The agency also conducted two public meetings.*

Bill Raney: Mr. Raney repeated his concern with the listing of trout waters in the rule and the fact that the list has to be approved by the Legislature. Karen Price agreed with this comment. Jackie Hallinan and Larry Harris did not agree with this comment.

Karen Price: Questioned the need for Appendix D, because the Category C use applies to all state waters.

*DEP Response: Agency will consider.*

Karen Price: Will the agency consider not making use removals go through the legislative process.

*DEP Response: The agency decided not to include any language pertaining to this issue at this point in time, but will be subjecting this issue to the public participation process in the coming months.*

## **60CSR5 – Antidegradation Implementation Procedures**

### **SUMMARY**

Antidegradation is a requirement of the federal Clean Water Act intended to preserve the existing quality of the State's waters and to prevent and/or minimize future degradation. The rule was first adopted in 2001 and establishes four levels, or tiers, of protection for state waters, Tiers 1, 2, 2.5 and 3. Each tier provides a graduated level of protection used during the NPDES permit issuance process. The proposed revisions to the rule carry forward the agency's antidegradation implementation efforts, and move the Tier 2.5 streams that had been on the "presumptive" list in Appendix C to a final proposed list in Appendix A. The agency is proposing a total of 156 streams be included on the list. The list of 156 waters is comprised of the 37 waters that did not receive objections in the formal objection period, those waters that contain reproducing trout and are 100% on public land, those waters listed as high quality on public land based on their high biological scores, and Loop Creek.

## COMMENT

Larry Harris: Scientific criteria should be used to add or delete streams from the Tier 2.5 list.

Rick Roberts: Can the SRF program give priority to facilities impacted by the Tier 2.5 list?

*DEP Response: Agency will take this under advisement.*

Larry Harris: Is the nomination process adequate?

*DEP Response: The agency believes the process is generally adequate and workable. If, however a large number of streams are nominated at one time, the individual notification requirements may be difficult and costly.*

At this point in the meeting, Bill Raney submitted written comments regarding several mining rules. (see attached)

## **60CSR8 - Environmental Excellence Program**

Greg Adolfson summarized the rule revisions. He said the changes would provide more flexibility for the agency to approve or disapprove of incentives in the program, as well as other flexibilities.

## SUMMARY

Changes are being proposed to the Environmental Excellence Program Rule (60CSR8) to better align with and follow the momentum of the United States Environmental Protection Agency's National Environmental Performance Track Program. Additionally, the primary purpose for the changes is to give more flexibility to the Department of Environmental Protection Cabinet Secretary in areas such as: Eligibility Criteria for Participation (section 4); Environmental Performance Record (section 5); Environmental Management System (section 6); Public Participation (section 8); Incentives (section 9); Procedures for Application (section 10); and Annual Performance Report (section 14). Language, such as "may include, but will not be limited to, the following," has been added to allow for this flexibility.

## COMMENT

Rick Roberts: Why is section 6.2 completely deleted?

*DEP Response: The section is not completely deleted, just the 1996 standards. This will allow the agency to use the most current standards.*

Bill Raney: How many companies are participating in the program?

*DEP Response: There are two in the National Program, Toyota and Dow.*

Jackie Hallinan: The program is a good idea.

Meeting was adjourned by Deputy Cabinet Secretary Randy Huffman.

Council meeting - 5/30/07  
Comments  
Submitted  
by Bill Raney

Bill...

Here are some preliminary comments provided by the Environmental-Technical Committee on the rules that will be reviewed by the Advisory Council:

**Water Quality Standards Rule (47CSR2)**

Only concern relates to the Trout Stream List:

Inclusion of a stream in the codified list contained in the rule forever locks in unrealistic WQS on that stream regardless of existing and/or future water quality. The lower standards are very problematic for the coal industry by targeting iron and aluminum.

**WVCA believes the list is immaterial to protection of the existing use if it is indeed a trout stream.**

*WV DEP, in the NPDES permitting process, will apply appropriate trout stream effluent limitations if the agency believes a stream to have a trout population regardless of whether or not it is on the codified list contained in the water quality standards rule or not.* The only difference is that in the permitting process, the applicant has the opportunity to present data and sampling to refute the agency's assertion that a stream is a trout stream, and has a right of appeal if they continue to disagree with agency's assignment of trout stream limits. The ability to dispute the trout stream designation is very important, especially since some of the data supporting the current initiative to expand the codified list is decades old.

If a trout stream is included on the codified list approved by the legislature, the only option for removing that designation is to once again pursue a legislative fix. Under those circumstances, it is easier to just challenge the entire expansion of the trout stream list.

The massive expansion of the trout stream list as currently proposed is much more restrictive than the standards found in surrounding states, where the regulatory agencies have developed different levels and categories of trout streams. West Virginia continues to treat all trout streams the same as though they were native, naturally-reproducing, cold water streams that deserve the highest levels of protection. This is simply not true, as many streams in West Virginia are stocked trout streams where the existing, in-stream water quality is lower than the established effluent guidelines for native trout streams.

**Mining & Reclamation Rule (38 CSR 2)**

Main concern relates to 14.15 c.2, regarding contemporaneous reclamation and valley fills:

This revision will penalize operators that are constructing "bottom-up" valley fills, the agency's preferred method of fill construction by unnecessarily restricting when such fill can be counted as "reclaimed" under the state's contemporaneous reclamation rules. These rules already vastly exceed the federal requirements and those of any other surrounding state, and this change will only make them worse.

Additionally, this proposed revision was deleted during the Legislative session in 2007.

#### **401 Water Quality Certification Rule (47 CSR 5A)**

The changes to this rule are totally un-necessary, and add further detail and complication to a state mitigation rule when the Legislature has specifically instructed the agency to better align its mitigation program with that of the Corps of Engineers. Several years ago, the Legislature passed a bill directing WV DEP to provide state mitigation credit for Corps mitigation. While this has occurred, we feel the revisions to this rule will drive the two programs further apart. Additionally, we know of no state statutory revision that necessitates these changes...the state mitigation program has functioned for years without this level of detail, and we question why it's needed now.

Further, we are concerned that the rule seeks to change definitions that should only be revised in the statute with Legislative approval. For example, the revisions jettison the long-used references to stream types and insert reference to ordinary high water mark. This appears to be an effort to expand the definition of "waters of the state" to all cover every erosional feature, regardless of whether or not it actually functions as a stream.



# West Virginia Coal Association

PO Box 3923, Charleston, WV 25339 ■ (304) 342-4153 ■ Fax 342-7651 ■ [www.wvcoal.com](http://www.wvcoal.com)

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July 18, 2006

Mr. Charles Sturey  
West Virginia Department of Environmental Protection  
Division of Mining & Reclamation  
601 57<sup>th</sup> Street SE  
Charleston, WV 25304

Re: Comments on Proposed Revisions to 47 CSR 5A

Dear Mr. Sturey:

Pursuant to the notice filed with the Secretary of State on June 15, 2006, the West Virginia Coal Association (WVCA) offers the following comments and observations regarding the agency's proposed revisions to 47 CSR 5A, "Rules for Individual State Certification of Activities Requiring a Federal Permit".

WVCA is a non-profit state trade association representing the interests of the West Virginia coal industry on policy and regulatory issues before various state and federal agencies that regulate coal extraction, processing, transportation and consumption. WVCA's primary goal is to enhance the viability of West Virginia's coal industry by supporting efficient and environmentally responsible coal extraction and processing through reasonable, equitable and achievable state and federal policy and regulation. WVCA appreciates the opportunity to provide comments regarding the West Virginia Department of Environmental Protection's (WVDEP) proposed revisions to the state's Clean Water Act ("CWA") Section 401 certification rule.

### General Comments

WVCA is very concerned about the WVDEP's proposal to add detail to its § 401 mitigation program, particularly at this time. The WVDEP has not articulated any problems with implementation of its existing mitigation program pursuant to this rule, and the WVCA sees no benefit to adding further detail and complexity now. Even more importantly, the WVCA understands the history of the WVDEP's § 401 mitigation program, and believes that the very basis for its development years ago no longer exists. The WVDEP's program has been fully replaced by the federal mitigation program which has developed into a comprehensive program and is the subject of new joint United States Army Corps of Engineers ("Corps") and the United States Environmental Protection Agency ("EPA") rules to update and conform their collective mitigation goals and requirements. The state's mitigation requirements, at least as they relate to mitigation for activities permitted by a CWA § 404 permit, have become obsolete and duplicative.

#### **History of State § 401 Mitigation Requirements.**

The state's mitigation program as maintained by the WVDEP and implemented through the § 401 rules is not a required component of the federal § 404 permitting program. The § 401 certification program is intended to insure that

issuance of a federal permit does not result in a violation of state water quality standards:

CWA section 401 provides that states certify that federal activities or activities requiring federal approvals relative to CWA section 404 would not violate applicable effluent limitations, or other limitations, or other water quality requirements.<sup>1</sup>

Instead, the state has independently required mitigation as a condition of § 401 certification. Implementation of the state's mitigation program and requirements dates from a time when the Corps imposed no federal mitigation requirement on mining operations authorized by the § 404 General Permit for coal mining operations, Nationwide Permit 21("NWP 21"):

[NWP] 21. Activities associated with surface coal mining activities provided they are authorized by the Department of the Interior, Office of Surface Mining (OSM) or by states with approved programs under Title V of the Surface Mining Control and Reclamation Act of 1977 and provided the permittee notifies the District Engineer in accordance with the "Notification" general condition. **The notification must include an OSM or state-approved mitigation plan (emphasis added).**<sup>2</sup>

Based on the requirements of the NWP 21, a state mitigation plan was required for a mining-related § 404 permit (usually a NWP 21) to be issued by the Corps:

Prior to reissuance of NWP 21 in January 2002, the COE [Corps] considered mitigation adequate with the inclusion of an OSM or state-approved SMCRA onsite mitigation plan in the permit application.<sup>3</sup>

<sup>1</sup> Programmatic Environmental Impact Statement. Corps, EPA et.al. 2005. page II.C-42.

<sup>2</sup> Final Notice of Issuance, Reissuance, and Modification of Nationwide Permits. U.S. Army Corps of Engineers, Dec. 13, 1996. 61 Fed. Reg. 241.

<sup>3</sup> Programmatic Environmental Impact Statement. Corps, EPA et.al. 2005. Page II.C-52

West Virginia implemented this program through the § 401 certification program which imposed monetary or in-lieu fee requirements on coal mining related § 404 permits.

In 2002, the Corps revised and reissued NWP 21 adding a condition that the Corps' District Engineer require federal mitigation, reviewed and approved by the Corps in accordance with its joint mitigation rules and regulations maintained with the EPA.<sup>4</sup> The revised and reissued NWP 21 allowed the Corps to consider state mitigation when determining federal mitigation, but removed the automatic acceptance of state-required mitigation as sufficient for § 404 authorization. From this point on, the state mitigation requirements as maintained in the § 401 certification process became duplicative because the Corps was requiring federal mitigation plans as part of the § 404 permitting process.

#### **Federal Mitigation Requirements are Comprehensive.**

Coal mining-related § 404 permitting and mitigation has evolved since the Corps's reissuance of NWP 21 in 2002. Most mining projects are now permitted using the Corps' Individual Permit process and mitigation plans are now developed based on the Corps's and EPA's combined preference for on-site, in-kind mitigation to restore the impacted aquatic resource.

As you know, coal mining operations are typically subject to the federal CWA § 404 program and the state § 401 certification program because of

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<sup>4</sup> Final Notice of Issuance, Reissuance and Modification of Nationwide Permits. U.S. Army Corps of Engineers, Jan. 15, 2002. 67 Fed. Reg. 10.

activities undertaken in jurisdictional waters. The steeply-sloped terrain of West Virginia is permeated by small ephemeral and intermittent streams that serve to drain natural runoff into larger perennial stream systems. Any development in these areas--coal mining or otherwise--will result in some form of impact to small streams. Unlike many other activities subject to § 404 permitting and § 401 certification, mining activities are mostly temporary in nature, with the reclamation process providing a unique opportunity for reconstruction of impacted stream segments.<sup>5</sup> The Corps has recognized this opportunity for on-site, in-kind replacement/restoration of impacted aquatic resources and issued guidance encouraging this type of mitigation:

This guidance acknowledges the uniqueness of regional and site-specific conditions, recognizes that features constructed in accordance with the Surface Mining Control and Reclamation Act may contribute to overall mitigation plans, and identifies several appropriate ways to accomplish appropriate mitigation projects.

Surface mining operations can result in the creation of intermittent and/or perennial streams depending on the on-site hydrologic conditions and the chosen method of dealing with groundwater and/or runoff. Applicants are encouraged to optimize these opportunities for on-site mitigation.

...Corps staff, Office of Surface Mining staff, and the mining operator should coordinate to explore options for incorporating... features required by SMCRA into compensatory mitigation plans. If successfully implemented, channels and other features will help maintain and potentially improve the physical, chemical and biological integrity of waters of the United States.<sup>6</sup>

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<sup>5</sup> See pages \_\_\_\_ of attachment "A", comments filed by WVCA concerning the draft federal mitigation rule.

<sup>6</sup> "Mitigation for Impacts to Aquatic Resources from Surface Coal Mining." U.S. Army Corps of Engineers. May 7, 2004

In addition to the Corps's above-cited guidance for mining, on-site, in-kind mitigation remains the preferred means of performing mitigation for other authorized impacts to aquatic resources:

In the interest of achieving functional replacement, in-kind compensation of aquatic resources will often be appropriate.<sup>7</sup>

Mitigation should be required, when practicable, in areas adjacent or contiguous to the discharge site. On-site mitigation generally compensates for locally important functions, e.g., local flood control functions or unusual wildlife habitat.<sup>8</sup>

Compensatory mitigation should generally be "in-kind" and occur as close to the site of the adverse impact as practicable in order to minimize losses to the local aquatic ecosystem.<sup>9</sup>

To satisfy the Corps's preference (enunciated in previously-cited Regulatory Guidance Letters issued by the Corps) for in-kind mitigation, or a functional replacement of the impacted resources, a Functional Assessment Protocol, referred to as the "Central Appalachian Protocol", has been used for several years now by the Huntington District to assist in assessing and assigning mitigation requirements for mining-related projects.<sup>10</sup>

Unfortunately, the WVDEP has to date largely ignored the mitigation guidance and requirements developed and imposed by the Corps, as well as the functional assessment protocol. The WVDEP has continued to implement its duplicative § 401 mitigation requirements, and typically requires mitigation above

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<sup>7</sup> Regulatory Guidance Letter No 01-1. U.S. Army Corps of Engineers, October 31, 2001.

<sup>8</sup> Regulatory Guidance Letter No.02-2. U.S. Army Corps of Engineers, December 24, 2002.

<sup>9</sup> Compensatory Mitigation Guidelines- Huntington District U.S. Army Corps of Engineers, Huntington, WV District. January 30, 2004.

<sup>10</sup> See attached power point presentation---Central Appalachian Protocol.

and beyond that which is required by the Corps despite the mandate of W. Va.

Code § 22-11-7a(a)(2)(C):

The Director shall provide credit for any mitigation that is a required component of the permit issued by the United States Army Corps of Engineers pursuant to 33 U.S.C. § 1344 to the extent that it satisfies required mitigation pursuant to this section.

Because a comprehensive federal mitigation program is being implemented, the WVDEP's failure to provide credit for such mitigation *as mandated* is a serious concern to the WVCA. To the extent a state program is relevant at all, perhaps to address the limited circumstances where the state's definition of "waters of the state" is broader than the CWA definition of "waters of the United States," it should be narrowly tailored to address that need. The WVCA cannot support proposed revisions that are not so narrowly tailored.

WVCA urges WVDEP to postpone pursuit of these proposed revisions at this time and to more fully consider the need for its separate mitigation program in light of (1) the federal mitigation now required as part of a § 404 permit, (2) the possibility of creating inconsistencies with the draft federal Corps and EPA rule for mitigation, (3) the deletion of NWP 21 conditions relating to state mitigation, and (4) the mandate of W. Va. Code § 22-11-7a(a)(2)(C) to rely on and give credit for federally mandated mitigation to satisfy any state mitigation needs.

### Specific Comments

Page 4 4.2.f.2.A. Economic Information about the coal mining operations, including, without limitation, the estimated number of jobs created, the estimated proportion of employees who will be residents of West Virginia, the estimated annual payroll, the

estimated annual coal production (if applicable), the estimated life of the operation, the estimated severance tax for the operation, the estimated annual property tax, and such other economic information as may be requested by the agency.

WVCA questions why this level of information is needed for the § 401 certification process. Similar information is provided to the Corps under the § 404 permitting program and to the state through the Community Impact Statement. The justification for requiring duplicative information as part of the § 401 certification process is lacking. Further, we are puzzled as to why this information is required only for mining operations. Sections 404 and 401 of the CWA apply to all manner of filling activities, not just coal mining operations. If this information is needed by the WVDEP to properly implement the § 401 certification process, then it should be required for all dredge and fill activities. If it is not, then it should be removed from the proposed revisions. Without further explanation and justification, the WVCA does not support this proposed revision.

**4.2.1.4. A Delineation of the Stream to be Impacted.** The length, width and depth of the stream segment impacted shall be measured. Width and depth measurements shall be made at one hundred (100) foot intervals. The stream delineation shall indicate the ephemeral and intermittent/perennial segments to be impacted. The stream shall be measured from the farthest downstream disturbance, excluding stream crossings associated with haul roads for surface mining operations, upstream to the beginning of an intermittent stream, as defined in 46 CSR 1-2.9 and/or 38 CSR 2-2.71, the ordinary high water mark. The applicant shall provide a table listing the station number with the corresponding acreage, including the drainage area from the toe of the pond and the toe of the fill.

As proposed, this revision appears to extend the reach of the state's jurisdiction and expand the WVDEP's mitigation requirements under the § 401 certification program. While this change may be motivated by a desire to more closely align the state's mitigation requirements with those of the Corps, the

WVDEP's first and most needed step in that direction is compliance with W. Va. Code § 22-11-7a(a)(2)(C). Until the WVDEP revises its mitigation rules and policies to accept Corps-required mitigation, this proposed change will serve only to increase the amount of in-lieu fee mitigation provided to the state, with no resulting environmental benefit. Further, the proposed change appears to be counter to the authorizing statute which bears no mention of the "ordinary high water mark." The WVCA does not support this proposed revision.

**6.2.b.1. Compensatory mitigation shall be required for all permanent and temporary stream impacts resulting from coal related activities in watersheds greater than or equal to two hundred and fifty (250) acres and/or when the activity results in a stream loss or impact exceeding one half (1/2) acre of stream. The drainage area and ½ acre assessments shall be measured starting from the toe of the most downstream permanent or temporary impact (excluding stream crossings) in which the activity occurs.**

WVCA believes that this proposed revision extends the authority of the state beyond the authorizing, underlying statute:

1) If the applicant's surface coal mining operation will not impact waters of the state designated as national resource waters and streams where trout naturally reproduce and will not impact wetlands of the state in a manner inconsistent with all applicable state or federal standards as the case may be, as required by the federal Clean Water Act, and if the watershed above the toe of the farthest downstream permanent structure authorized pursuant to the United States Army Corps of Engineers permits issued in accordance with 33 U.S.C. §1344 and 33 C.F.R. Parts 323 or 330 is less than two hundred fifty acres, then the director may issue a water quality certification pursuant to the requirements of this section. If the watershed above the toe of the farthest downstream permanent structure impacted is equal to or greater than two hundred fifty acres, the director shall require that mitigation be undertaken. Additionally, the director may require mitigation for temporary impacts to waters of the state as specified in subdivision (2) of this subsection.

(2) If the watershed above the toe of the farthest downstream permanent structure authorized pursuant to the United States Army Corps of Engineers permits issued in accordance with 33 U.S.C. §1344 and 33 C.F.R. Parts 323 or 330 is greater than or equal to two hundred fifty acres and all other necessary requirements are met consistent with this section, the director shall further condition a water quality certification on a requirement that the applicant mitigate the expected water quality impacts under the following conditions...

The above-cited statute contains no reference to "1/2 acre" of stream.

Apparently, the agency is attempting to further extend its jurisdiction or merely implementing past policies that existed with respect to coal and non-coal mitigation. Since the statute contains no reference to 1/2 acre of stream, WVCA suggests the agency delete this proposed revision. If the agency truly believes that this change is necessary, it should seek a legislative revision to 22-11-7(a) and only then seek to modify the rule.

~~6.2.d.1. Permanent impacts for coal related monetary mitigation will be assessed at \$200,000 per acre of impacts in watersheds greater than or equal to two hundred and fifty (250) acres from the toe of the farthest downstream permanent structure, and/or exceeds a 1/2 acre of loss or impact of stream. Monetary compensation for stream impacts resulting from coal related activities shall be assessed as follows:~~

6.2.d.1.A Permanent impacts for coal related monetary mitigation will be assessed at \$200,000 per acre of impacts

6.2.d.1.B Temporary coal related stream impacts resulting from structures (excluding stream crossings) that will be removed prior to final bond release will be assessed at \$20,000 per acre of stream impact per each five-year period of impact and/or prorated for each year the impact occurs.

6.2.d.1.C Temporary coal related stream impacts resulting from stream crossings (i.e. culverting) and stream relocations where the stream impact is greater than or equal to two hundred one (201) lineal feet, but less than or equal to four hundred (400) lineal feet and is in place for five years or more, shall be assessed at \$20,000 per acre for the first five (5) year period and prorated for each additional year the impact shall occur. A temporary stream impact resulting in more than four hundred (400) linear feet shall be monetary compensated at a rate of \$20,000 per acre per each five (5) year term and/or prorated for

each year the impact occurs.

As noted in our general comments, the state § 401 certification program has functioned for several years without the level of minutia and detail presented here, and there appears to be no justification for adding these new provisions to the rule at this time. In addition, because § 404 permit mitigation plans cover both permanent and temporary impacts, there is no need for the duplicative state provision for monetary mitigation. As explained in our general comments, the Corps and EPA have continuously stressed a desire for on-site, in-kind mitigation. Using the "Central Appalachian Protocol", coal mining operations have been providing on-site, in-kind mitigation through the reclamation and stream reconstruction process. These projects have been embraced by the Corps and EPA through mining-specific regulatory guidance.

WVCA questions the need for these revisions, and urges WVDEP to re-evaluate the need for this provisions in light of the federal mitigation now required as part of a § 404 permit and the mandate of W. Va. Code § 22-11-7a(a)(2)(C) to rely on and give credit for federally mandated mitigation to satisfy any state mitigation needs.

**6.2.d.1.D Permanent wetland impacts for coal related monetary mitigation will be assessed at the rate \$30,000 per acre of wetland replaced based on the ratios in section 6.2.c.**

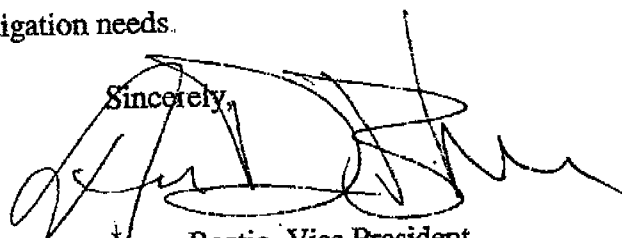
Again, as noted in our general comments, the state § 401 certification program has functioned for several years without the level of minutia and detail presented here, and there appears to be no justification for adding these new provisions to the rule at this time. In addition, § 404 permit mitigation plans cover

both permanent and temporary impacts to all impacted aquatic resources, including wetlands, and there is no need for the duplicative state provision for monetary mitigation for wetland impacts.

To the extent WVDEP nevertheless chooses to pursue this proposed revision, it has no justification for the \$30,000 replacement value proposed. In addition, by proposing this specific amount, the WVDEP has excluded any opportunity to determine a monetary mitigation amount for wetlands on a case-by-case basis, which could be either higher or lower than \$30,000 per acre.

In-lieu fee payment for wetlands impacts is a desirable option to have, but we question whether the agency will ultimately determine that wetland replacement as already specified in the rule is sufficient. The WVCA cannot support this proposed revision without additional justification and explanation, and again urges the WVDEP to re-evaluate the need for this provisions in light of the federal mitigation now required as part of a § 404 permit and the mandate of W. Va. Code § 22-11-7a(a)(2)(C) to rely on and give credit for federally mandated mitigation to satisfy any state mitigation needs.

Sincerely,



Jason Bostic, Vice President  
Regulatory & Technical Affairs



# West Virginia Coal Association

PO Box 3923, Charleston, WV 25339 ■ (304) 342-4153 ■ Fax 342-7651 ■ [www.wvcoal.com](http://www.wvcoal.com)

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**Ms. Gloria Shaffer**  
**West Virginia Department of Environmental Protection**  
**Division of Water and Waste Management**  
**Water Quality Standards Program**  
**601 57<sup>th</sup> Street SE**  
**Charleston, WV 25304**

**Via Electronic Mail: [Gjshaffer@wvdep.org](mailto:Gjshaffer@wvdep.org)**

**Re: Comments on 2007 Triennial Review of Water Quality Standards**

**Dear Ms. Shaffer:**

Pursuant to the September 22, 2005 announcement by the West Virginia Department of Environmental Protection (WV DEP), the West Virginia Coal Association (WVCA) offers the following comments and observations regarding the agency's first triennial review of water quality standards.

WVCA is a non-profit state coal trade association representing the interests of the West Virginia coal industry on policy and regulation issues before various state and federal agencies that regulate coal extraction, processing, transportation and consumption. WVCA's producing members account for 80 percent of the Mountain State's underground and surface coal production. WVCA also represents associate members that supply an array of services to the mining industry in West Virginia. WVCA's primary goal is to enhance the viability of the West Virginia coal industry by supporting efficient and environmentally

criteria. EPA is currently in the process of revising the nationally-recommended selenium criteria.<sup>6</sup> Because of the flawed nature of the current selenium criteria and its inappropriate application to flowing waters in West Virginia, WVCA is supportive of this federal initiative. However, we caution WV DEP to fully analyze the appropriateness of applying any federally-revised standard in West Virginia. Available information seems to indicate that a state-specific selenium standard for West Virginia may be warranted, as fish populations appear to be healthy and diverse in streams with identified selenium concentrations.<sup>7</sup> The pressing nature of selenium also warrants that WV DEP investigate a state-specific criteria for West Virginia since the federal revisions remains pending. The agency has recently completed draft TMDL documents that impose selenium allocations based on the existing water quality criteria, and will continue to develop and implement selenium TMDLs, adding urgency to this important issue.

### Trout Streams

In the EQB's last triennial review, it proposed adding some 400 streams to the list of Trout Waters contained in the water quality standards rule. The EQB allowed only a 30-day comment period on this major expansion of the Trout Waters list. The EQB proposal was based only on the recommendations of the

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<sup>6</sup> See Attachment "F", October 29, 1999 Federal Register Notice published by EPA regarding revision of the selenium criteria and Attachment "G", December 17, 2004 Federal Register Notice announcing draft criteria and requesting public comments.

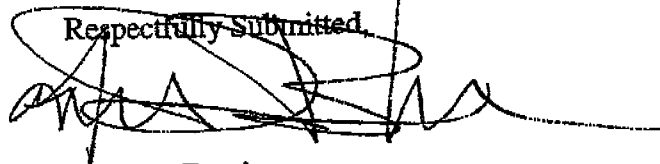
<sup>7</sup> See Attachment "H", relevant pages from comments filed by the National Mining Association and WVCA regarding the programmatic Mountaintop Mining/ Valley Fill Environmental Impact Statement and *Fish Communities and Their Responses to Environmental Factors in the Kanawha River Basin, West Virginia, Virginia, and North Carolina*. U.S. Geological Survey, 2001.

West Virginia Division of Natural Resources, with no accompanying data or information on whether or not the streams actually meet the requirements to be classified as trout waters. Based on the lack of information regarding the current status of the proposed trout waters and the limited opportunity for comment provided, the West Virginia Legislature rejected the revision.

The permitting ramifications of classifying streams as trout waters can be significant, as different water quality standards (uniformly more stringent) apply to trout streams. Incorrectly classifying a water as a trout stream can have serious economic impacts for property owners and NPDES dischargers along that streams and should not be taken lightly by WV DEP. Before the agency undertakes any effort as part of its 2007 triennial review to list any additional streams as trout waters, WV DEP should conduct scientific investigations of water quality and fish populations in order to ascertain if a water body meets the criteria required of a trout stream. The agency should also hold hearings in the communities where such streams are located to take comment from the persons most familiar with the conditions of these streams.

We appreciate the agency's consideration of these comments)

Respectfully Submitted,

A handwritten signature in black ink, appearing to read "Jason D. Bostic", written over a horizontal line. The signature is somewhat stylized and includes a vertical line extending upwards from the end of the signature.

Jason D. Bostic  
West Virginia Coal Association



# West Virginia Coal Association

PO Box 3923, Charleston, WV 25339 ■ (304) 342-4153 ■ Fax 342-7651 ■ [www.wvcoal.com](http://www.wvcoal.com)

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July 17, 2006

Mr. Charles Sturey  
West Virginia Department of Environmental Protection  
Division of Mining & Reclamation  
601 57<sup>th</sup> Street SE  
Charleston, WV 25304

Re: Comments on Proposed Revisions to 38 CSR 2

Dear Mr. Sturey:

Pursuant to the notice filed with the Secretary of State on June 15, 2006, the West Virginia Coal Association (WVCA) offers the following comments and observations regarding the agency's proposed revisions to 38 CSR 2, the state's Mining and Reclamation rules.

WVCA is a non-profit state coal trade association representing the interests of the West Virginia coal industry on policy and regulation issues before various state and federal agencies that regulate coal extraction, processing, transportation and consumption. WVCA's membership accounts for over 80 percent of the Mountain State's underground and surface coal production. WVCA's primary goal is to enhance the viability of the West Virginia coal industry by supporting efficient and environmentally responsible coal extraction and processing through reasonable, equitable and achievable state and federal policy and regulation.

WVCA appreciates the opportunity to provide comments to the West Virginia

Department of Environmental Protection (WV DEP) regarding the proposed revisions to the state's mining and reclamation rule.

### Specific Comments

3.2.g. Notice of Technical Completeness. After the Secretary deems a Surface Mine Application technically complete, the Secretary shall cause the applicant to advertise stating such. The notice shall state that the application has been deemed technically complete by the Secretary and include a fifteen (15) day public review period. Provided, however, Notice of Technical Completeness may not be necessary if the application was technically complete prior to the end of the comment period of the original advertisement and a decision is made within ninety (90) day of the end of the comment period or informal conference.

WVCA believes this revision is unnecessary. Existing state rules provide the agency with authority to require re-advertisement:

3.2.e. Re-advertisement. After a Surface Mine Application (SMA) has been advertised once a week for four successive weeks, and is determined by the Secretary to have had a limited number of minor changes that do not significantly affect the health, safety or welfare of the public and which do not significantly affect the method of operation, the reclamation plan, and/or the original advertisement, he may require one (1) additional advertisement to be published with a ten (10) day public comment period.

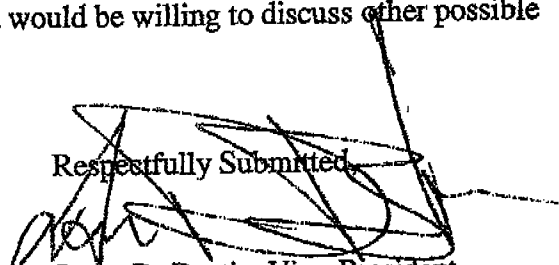
As the above-cited provision reveals, the agency has the authority to require the additional advertisement that appears to be the goal of the proposed revision. The language of 38 CSR 2.3.e restricts the applicability of the provision to "a limited number of minor changes that do not significantly affect the health, safety or welfare of the public and which do not significantly affect the method of operation, the reclamation plan, and/or the original advertisement..." for changes that are substantive WV DEP has always required re-advertisement. Additionally,

the proposed revisions exceed the corresponding federal requirements maintained by the Office of Surface Mining (OSM) at 30 CFR 773.6. Because the agency has already has the authority to require re-advertisement, WVCA suggests that WV DEP delete the proposed revision.

14.15.c.2. Areas within the confines of excess spoil disposal fills which are under construction provided the fill is being constructed in the "conventional" method, i.e., completed from the toe up, or those fills which are being constructed progressively in lifts from the toe up or are being progressively completed from the toe up by constructing benches and appropriate drainage control structures (ditches, flumes, channels, etc.) from the toe up as soon as the area is available to ~~do so~~; first two lifts are in and are seeded and certified;

WVCA is extremely concerned about this proposed revision and believes that it will unnecessarily restrict operating flexibility and thereby discourage the construction of "bottom-up" valley fills. WVCA strongly suggests the agency delete this proposed revision. This entire section of rules already exceeds the corresponding federal requirements of OSM, but members of WVCA negotiated the rules in good faith to remedy an agency-perceived problem with valley fill construction. These rules have been scrutinized and approved by the West Virginia Legislature and OSM. WVCA is concerned as to why the agency believes this change is necessary, and would be willing to discuss other possible remedies to the situation.

Respectfully Submitted,



Jason D. Bostic, Vice-President  
Regulatory & Technical Affairs

Surface Mining 38 CSR2 (Agreement)  
401 Certification 47 CSRSA 45CSR42  
TRADU LISTING

2.5  
"Biogenic Sources"  
include  
COAL

TITLE 45  
LEGISLATIVE RULE  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
DIVISION OF AIR QUALITY  
SERIES 42  
GREENHOUSE GAS EMISSIONS INVENTORY PROGRAM

3.2 turned an  
exemption into  
an inclusion  
5.3 "shall provide  
information?"

§45-42-1. General.

1.1 Scope. -- This rule establishes a greenhouse gas emissions inventory program in West Virginia which:

1.1.a. Requires the reporting and inventory of greenhouse gas emissions by stationary sources which emit more than a *de minimis* amount of greenhouse gases on an annual basis;

1.1.b. Inventories greenhouse gas emissions from stationary, area, mobile and biogenic sources, and accounts for reductions and sequestration of greenhouse gas emissions;

1.1.c. Provides for a periodic compilation of a greenhouse gas emissions inventory and a determination whether West Virginia is a net sink or emitter of greenhouse gases;

1.1.d. Provides for development of a registry to record voluntary reductions of greenhouse gas emissions; and

1.1.e. Provides for a determination whether the reduction and sequestration of greenhouse gas emissions can be developed as an asset for economic development.

1.2 Authority -- W.Va. Code §22-5-19

1.3. Filing Date --

1.4. Effective Date. -- June 1, 2008.

§45-42-2. Definitions.

2.1. "Air pollutants" means solids, liquids, or gases which, if discharged into the air, may result in statutory air pollution

2.2. "Air pollution" or "statutory air pollution" means and is limited to the discharge into the air by the act of man substances (liquid, solid, gaseous, organic or inorganic) in a locality, manner and amount as to be injurious to human health or welfare, animal or plant life, or property, or which would interfere with the enjoyment of life or property.

2.3. "Anthropogenic" means a direct result of human activities or the result of natural processes that have been influenced by human activities.

2.4. "Area source" means, for purposes of this rule, a collection of similar sources of air pollutants within a geographic area. Area sources collectively represent individual sources that are small and numerous, and that typically have not been inventoried as a stationary or mobile source.

2.5. "Biogenic" means a naturally occurring biological source or process that is not significantly affected by human actions or activity.

Biogenic  
Sources  
include  
COAL

2.6. "Capture" means the collection of greenhouse gas emissions from a stationary source.

2.7. "*De minimis*" means emissions from a stationary source that are equal to or less than ten thousand tons per year for carbon dioxide, four hundred seventy-six tons per year for methane, thirty-two and six tenths tons per year for nitrous oxide, eight hundred fifty-five thousandths tons per year for hydrofluorocarbons, one and nine hundredths tons per year for perfluorocarbons and forty-two hundredths tons per year for sulfur hexafluoride.

2.8. "Emission" means the release, escape or discharge of regulated air pollutants or greenhouse gases into the air.

2.9. "Greenhouse gas" means the gaseous compounds: carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride (SF<sub>6</sub>).

2.10. "Mobile source" means a variety of onroad and nonroad vehicles, engines, locomotives, marine vessels, airplanes and other equipment that generate air pollutants and greenhouse gas emissions, and that move or can be moved from place to place.

2.11. "Regulated air pollutant" means, for purposes of this rule, any air pollutant regulated under rules promulgated by the Secretary pursuant to W.Va. Code §22-5-4.

2.12. "Reservoir" means a geological site where a greenhouse gas is securely stored.

2.13. "Secretary" means the Secretary of the Department of Environmental Protection or such other person to whom the Secretary has delegated authority or duties pursuant to W.Va. Code §§22-1-6 or 22-1-8.

2.14. "Sequestration" means the physical process by which emissions of a greenhouse gas are directly captured for storage

in a reservoir, or the biologic process by which a greenhouse gas is indirectly removed from the atmosphere for storage in a sink.

2.15. "Sink" means any process, activity or mechanism which removes a greenhouse gas from the atmosphere. Forests are considered sinks because they remove carbon dioxide through photosynthesis.

2.16. "Source" means, for purposes of this rule, any process or activity which releases a greenhouse gas into the air.

2.17. "Stationary source" means any building, structure, facility, installation, stationary process or process equipment which emits or may emit any regulated air pollutant or greenhouse gas.

2.18. "Ton" means a short ton, or 2000 pounds.

2.19. Other words and phrases used in this rule, unless otherwise indicated, shall have the meaning ascribed to them in W.Va. Code §22-5-1 et seq.

**§45-42-3. Applicability.**

3.1. Any stationary source that emits one or more greenhouse gases on an annual basis greater than the *de minimis* amounts listed in the table below, and reports emissions of regulated air pollutants pursuant to the emissions inventory requirements of the Secretary under rule or W.Va. Code §22-5-4(a)(14), shall be an affected source required to report emissions of all greenhouse gases to the Secretary under section 4:

Greenhouse Gas Compound	tons/year
carbon dioxide	10,000
methane	476
nitrous oxide	32.6

Any facility, etc.

hydrofluorocarbons	0.855
perfluorocarbons	1.09

sulfur hexafluoride	0.42
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Prep plants under title IV

only stationary sources

3.2. Stationary sources which are regulated by the Secretary under W.Va. Code §22-3-1 et seq. and do not report emissions of regulated air pollutants pursuant to the emissions inventory requirements under W.Va. Code §22-5-4(a)(14) are not required to, but may voluntarily report their greenhouse gas emissions under section 4.

§45-42-4. Reporting Requirements.

4.1. By March 31, 2009, and March 31 of each year thereafter, affected sources shall report to the Secretary the quantity of all greenhouse gases emitted in the previous calendar year.

4.2. Affected sources shall only be required to report annual quantities of anthropogenic non-mobile source greenhouse gas emissions at the source, and shall not be required to report biogenic emissions of greenhouse gases.

4.3. The Secretary shall determine the form and format of the information reported by affected sources under subsection 4.1 to ensure that the information is consistent as possible with developing regional, national, or international greenhouse gas emissions programs.

4.4. Notwithstanding the provisions of subsection 4.3, to satisfy the greenhouse gas emission reporting requirements under this section, affected sources may submit greenhouse gas emissions inventory information from documented greenhouse gas inventories such as those provided to the Environmental Protection Agency's Climate Leaders Program, Chicago Climate Exchange Registry, the International Organization for Standardization and the SF<sub>6</sub>

Emissions Reduction Partnership for Electric Power Systems. Greenhouse gas emissions inventory information from other widely recognized and verified greenhouse gas emissions inventory programs may be submitted by affected sources under this subsection, but shall be subject to approval by the Secretary on a case-by-case basis.

4.5. Reports of greenhouse gas emissions submitted to the Secretary under this section shall be signed by a responsible official and shall include the following certification statement: "I, the undersigned, hereby certify that the data transmitted to the West Virginia Department of Environmental Protection is true, accurate, and complete, based upon information and belief formed after reasonable inquiry."

§45-42-5. Greenhouse Gas Emissions Inventory.

5.1. The Secretary shall periodically compile an inventory of greenhouse gas emissions to:

5.1.a. Characterize the relative contributions of greenhouse gas emissions from stationary, area, mobile and biogenic sources in West Virginia; and

5.1 b. Determine the extent to which greenhouse gas emissions are offset by the rate of sequestration, and whether West Virginia is a net sink or emitter of greenhouse gases

5.2. The greenhouse gas emissions inventory shall include the emissions from stationary sources reported under section 4, and other relevant information regarding significant emissions, reductions, and sequestration of greenhouse gases from stationary, area, mobile

entire Sorban Area / underground Area is an AREA SOURCE

and biogenic sources requested by the Secretary under subsections 5.3 and 5.4.

5.3. To inventory greenhouse gas emissions reductions, the Secretary shall consult with the citizenry and other entities such as industry trade groups that have information relating to greenhouse gas emissions reductions, and sequestration. Upon request of the Secretary, such entities shall provide relevant information relating to greenhouse gas emissions reductions, capture and sequestration.

5.4. The Department of Agriculture, the Division of Forestry, Marshall University, West Virginia University, West Virginia Geological and Economic Survey, and the Department of Transportation shall enter into interagency agreements with the Secretary and at the Secretary's request provide:

5.4.a. Relevant information relating to greenhouse gas emissions from area, mobile and biogenic sources;

5.4.b. Relevant information relating to greenhouse gas emissions reductions and sequestration; and

5.4.c. Any assistance the Secretary may request during the development of the greenhouse gas emissions inventory.

5.5. The Secretary shall determine the form and format of the information submitted by the entities under subsections 5.3 and 5.4 to ensure that the information is consistent as possible with developing regional, national, or international greenhouse gas emissions programs.

**§45-42-6.Greenhouse Gas Emissions Registry Program.**

6.1. The Secretary shall develop a registry for the recordation of voluntary reductions of greenhouse gas emissions.

6.2. The greenhouse gas emissions registry program shall be as consistent as possible with developing regional, national, or international programs designed to monitor, quantify and register reductions in greenhouse gas emissions with respect to:

6.2.a. Development of criteria, based on a set of standardized emissions accounting, reporting and verification protocols, to determine baseline emissions and quantification of voluntary reductions in emissions of greenhouse gases;

6.2.b. Public recognition of such voluntary emissions reductions;

6.2.c. Consideration of voluntary greenhouse gas emission reductions when determining baselines and reduction requirements under future federal greenhouse gas emission reduction programs; and

6.2.d. The ability of sources to participate in future greenhouse gas emission trading programs.

**§45-42-7.Economic Development Potential.**

7.1. Using information obtained, gathered or developed under this rule, the Secretary will determine whether the reduction and sequestration of greenhouse gas emissions can be developed as an asset for economic development in West Virginia.

**§45-42-8.Inconsistency Between Rules.**

8.1. In the event of any inconsistency between this rule and any other rule of the West Virginia Department of Environmental Protection, the inconsistency shall be resolved by the determination of the Secretary and the determination shall be based upon the application of the more stringent provision, term, condition, method or rule.



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### Biogenic substance

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A **biogenic substance** is a substance produced by life processes. It may be either constituents, or secretions, of plants or animals.

#### Examples

Coal and oil are examples of constituents which have undergone changes over geologic time periods.

Chalk, and limestone are examples of secretions (marine animal shells) which are of geologic age.

Cotton and wood is are biogenic constituents of contemporary origin.

Pearls, silk and ambergis are examples of secretions of contemporary origin.

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**From:** "Charles Harris" <charris@hsc.wvu.edu>  
**To:** <jhallinan@hallinanlaw.com>, <rick@lcpd.com>, <braney@wvcoal.com>, <PWHITE@wvdep.org>, <karen@wvma.com>, <wvml@wvml.org>  
**Date:** 5/24/2007 7:54:40 PM  
**Subject:** Re: May 30, 2007 Meeting

Trish: I received some last minute comments on 33CSR8 that I would like to submit:

§33-9-2. Definitions -- Section 2.5 defines "Beneficial Use" as "the use of a non-hazardous material for a specific beneficial purpose where it is done in a manner that protects groundwater and surface water quality, soil quality, air quality, human health, and the environment." We are concerned that it has not been adequately demonstrated that this filtrate is non-hazardous, and point to the current "inter-sex" fish issue in the Potomac River drainage which illustrates that there are unanswered questions concerning unmonitored pollutants in sludge from both water and waste treatment facilities.

§33-9-2. Definitions - Section 2.5 defines beneficial uses as including "use as a fertilizer substitute, soil amendment, cover material, fill material, mulch or horticultural product, or other purpose approved by the Secretary." However, Section 33-9-3, in sub-Section 3.1 b. 1 requires that "The use proposed is a reuse, and not a disposal." We suggest that the use of this filtrate as fill material is actually simply a disposal and not a "reuse." We believe this material should not be used as fill material. This would also require a change to Section 33-9-5, sub-Section 5.2.

§33-9-5. Standards for Beneficial Use of Filtrate - sub-Section 5.3 states, "The Secretary may approve the use of filtrate as fill material within fifty (50) feet of surface water upon submission of information sufficient to show that the fill material will have no significant impact on the quality of runoff reaching the surface water." Even the U.S. Forest Service has adopted stronger stream buffers for sediment runoff. DEP should develop stronger stream buffers for this rule, and there should be no discretion.

§33-9-7. - DEP made changes to this rule during the Interims process last year, and the rule now requires a permit for both short-term and long-term applications. This is a good change. However, we feel that most of the information required in Section 7.3. Permit Application Requirements for long-term permits should also be required for short-term permits.

§33-9-8. Draft Permits and Public Comment. Section 8.2 a. provides for a 30-day public comment period for long-term permits, but only a 15-day public comment period for short-term permits. We oppose the shortened public notice provisions for short-term permits. The 30-day comment period should apply in both instances.

§ 33-9-11. General permits. We oppose the development of a General Permit to cover the provisions of this rule. Specific individual permits are necessary to inform potentially affected parties of the application of this material.

Appendix A -- Frequency of Monitoring. The Legislative Rule-Making Review Committee last session accepted an amendment proposed by industry that reduced monitoring tests to once a year. While we would prefer even more frequent monitoring than proposed in this rule, we hope DEP will strongly oppose any attempts to reduce the monitoring provisions provided in this rule.

Charles L. Harris  
Professor of Biochemistry  
West Virginia University  
School of Medicine  
304-293-7749

>>> "Patricia White" <PWHITE@wvdep.org> 05/21/07 4:21 PM >>>  
Please be advised of the following meeting:

## Comments on DEP Rules for 2007

Communicated by Larry Harris, Public Advisory Council Member

I would like to commend the staff of the DEP for the hard work and expertise used in preparing and reviewing the rules with Council. As promised, I include below some of the technical and other issues raised during the May 21 meeting of the Council, omitting some questions that were answered at the meeting. Members of the environmental community who reviewed the rules raised some of the questions.

Some of the issues mentioned below are related to the act of valley fills and determining compensation for this process. I have pointed out my view to Council previously that the permitting of valley fills is essentially allowing the destruction of upper tributaries of watersheds. As such the process should be outlawed, in my view.

### 47CSR2 Water Quality

We learned that the B2 list is essentially the same as submitted previously and includes the definition of trout waters cited on page 2 of the rule.

.Page 11: Why is the temperature regulation on Stony River being removed?

47CSR2 (7.2.d.9) — The removal of variances, etc. on the Blackwater seems to be a strength, but why do these rivers remain "reserved" on the list? Why not just remove them?

47CSR2 (7.2.d.34.1): Adds language for site-specific applicability of water use categories and water quality criteria: "Pats Branch from its confluence with the Guyandotte River to a point 1000 feet upstream shall not have Water Use Category A and Category D1 designation."

- \* Is this a use removal? Yes was the answer.
- \* If so, did this go through the appropriate public process and use attainability analysis to justify a use removal. Did the use and attainability

analysis follow the federal Clean Water Act provision. (i.e. how was this decision justified)? Not sure this was fully answered.

#### **47CSR2 (Appendix E):**

Are the changes in concentrations for cadmium, copper, and others in Appendix E consistent with EPA changes/recommendations? Some of the changes in hardness calculations are in response to comments from our groups last year asking DEP to be consistent--so this is good.

#### **47CSR5A**

##### 47 CSR 5A (State Certification)

\*\*\*47CSR5A (4.2.f.4): seems to be weakening the system for determining stream miles (delineation). DEP inserts the language: "The stream shall be measured from the farthest downstream disturbance, excluding stream crossings associated with haul roads for surface mining operations, upstream to the beginning of the ordinary high water mark."

This will result in fewer stream miles being "delineated" as actual stream miles, it seems. Why would you move upstream (where there are fewer inputs) to find a high water mark? Thus, it also seems fewer miles of headwaters will be mitigated for impacts.

47CSR5A (6.2.b): Typo--"loses" should be "losses"

47CSR5A (6.2.d.1): Is there a discrepancy between how monetary compensation for coal versus non-coal impacts is assessed? It may be worth determining that coal is not getting a break, in comparison to non-coal.

For example--why is it lineal miles for coal and acreage for non-coal? If they are going to assess from the high water mark--as discussed above--will this not result in fewer stream miles and thus fewer miles to mitigate/compensate? Also, there is no assessment for non-coal related temporary impacts--why?

#### **60 CSR5 Antidegradation**

I made the suggestion that the list of Tier 2.5 streams (156 in the current rule) should be returned to the same number as began the legislative session, which is 309 streams. A scientific process that included expertise

from the WVDNR, which manages trout waters, arrived at the list of 309 streams. The list now submitted with the bill was reduced by the political process. Politics should not determine which streams merit protection from pollution; science should.

Other issues:

2.11 Explanation of the addition of this trading section is needed. Is this similar to EPA rules and consistent with the Clean Water Act?

3.9 Which advisory committee is this phrase referring to:

5.5b is removed. Why?

Is the procedure for nomination and addition of streams to the tier 2.5 list adequate?

Comments from Adam Webster (WVRC)

60CSR5 (2.11) : It's good that DEP provides "upstream controls" and mentions "for the same parameter" in the first sentence of the "trading" definition. Overall, the definition is good, but it is important to remember that the intent of the definition is not to allow cross-pollutant trading. With this in mind, the second sentence—"More than one parameter of concern may be traded on a given stream"—needs to be worded more restrictively (i.e. despite what the first sentence says, the second sentence could be interpreted as if cross-pollutant trading is allowed).

\*\*\* 60CSR5 (5.2) : Removes (strikes) the language: "Water segments that support the minimum fishable/swimmable uses and have assimilative capacity remaining for some parameters shall generally be afforded Tier 2 protection".

Does this suggest the default is Tier 1 (if data does not suggest otherwise)? If so, why?

60CSR5 (5.6.c) : The deletion is a response to lawsuit. However, the new 5.6.c suggests they cannot assess assimilative capacity when dealing with pH,

DO, temperature, and fecal coliform. We feel that they can assess these parameters and should not treat them separately.

#### **45CSR42 Greenhouse Gases**

The fact that the DEP is beginning to deal with the process of greenhouse gases that lead to global warming is commendable. Some questions on the rule were raised by Dr. Kotcon:

The greenhouse gases emissions inventory rule (45-42-1) needs to be >strengthened considerably. The sections on emissions inventory >(section 5, pages 3-4) is so vague as to be meaningless, especially >as it deals with sequestration for area sources and sinks. I do not >see how any meaningful data can be generated with this language. How would the carbon sequestration be estimated? Has there been studies estimating the biogenic incorporation of CO<sub>2</sub> per acre of woodland, for example? The rule appears to be a vague in how it would be implemented.

#### **Air Quality and Emission Rules (see below)**

##### **45CSR8 Ambient Air Quality Standards**

Don Garvin pointed out that the the antidegradation language was removed from this rule, and it was explained that the agency feels these provisions are now covered in 45-CSR-14( "Prevention of Significant Deterioration.") However, the language that was stricken does not appear in 45-CSR-14, and the stricken language is the ONLY statement in the rules of West Virginia's antidegradation policy for air quality. The environmental community still believes the stricken language should be restored.

Here is what should be reinstated:

##### **§45-8-2. Anti-Degradation Policy.**

2.1. Pursuant to the best interests of the State of West Virginia, it is the objective of the Secretary to obtain and maintain the cleanest air possible, consistent with the best available technology.

2.2. Where the present ambient air is of better quality than the established standards, the Secretary will develop long-range plans to protect the difference between the present quality and the established standards. The plans will be based upon the best available forecasts of probable land and air uses in these areas of high air quality.

2.3. The air quality of these areas will not be lowered unless it has been clearly demonstrated to the Secretary that such a change is justifiable as a result of necessary economic or social development and will not result in statutory air pollution. This will require that any industrial, public, or private project or development which could constitute a new source of air pollutants, within an area of such high air quality, provide the best practicable control available under existing technology as part of the initial project or development.

#### **45CSR41 Control of Annual SO<sub>2</sub> emissions**

#### **45CSR6 Control of Air Pollution from Refuse Combustion**

#### **45CSR39 Nitrogen Oxides**

I raised the general concern whether the standards for air quality were consistent with the EPA guidelines or not. Further, were any recognized health authorities consulted when these levels were determined? I also raised the issue that West Virginia is increasing supplying electricity to the population east of our mountains. New transmission lines are proposed that are to be connected with coal burning power plants. Billy Jack Gregg, Consumer Advocate for the WV PSC has pointed out that the states receiving our generated power will not permit generation plants in their region. They are concerned about air pollution and its various effects. But they need power, so they turn to West Virginia. This helps the coal industry and generation plants, but puts the health of West Virginians in jeopardy. I feel that our air quality and emission limits should be even more stringent than the EPA calls for in order to protect our citizens. This should be particularly true for power plants that export electricity.

Dr. Kotcon has raised the following issues:

#### 45-CSR-8 Ambient Air Quality Standards

The standards for PM<sub>2.5</sub> and Ozone are not adequately protective. I recommend that the standards be lowered from 15  $\mu\text{g}/\text{m}^3$  to 13  $\mu\text{g}/\text{m}^3$  in section 4.2.b., and from 0.08 ppm to 0.07 ppm in section 4.4.b.

The air standards (45-8-1) retains the standards for PM<sub>2.5</sub> and ozone  
>that the EPA Clean Air Scientific Advisory Council has already  
>determined to be inadequate. Keeping these old standards will kill  
>dozens or hundreds of West Virginians each year.

>The rule on refuse combustion (45-6-1) attempts to revise the  
>definition of low-level radioactive waste and revives the  
>Below-Regulatory\_Concern (BRC) issue from some years ago. It also  
>creates a large number of exemptions for "temporary" pollution  
>sources. I am not yet sure if this re-opens old battles over  
>medical waste incineration, but this was a really hot issue a few  
>years back.

Comment submitted  
by Karen Price at  
Council  
meeting  
5/30/07

Questions/Comments on DEP's 2007 Proposed Rules

- **45 CSR 8 Ambient Air Quality Standards**

Section 4.2.c – PM<sub>2.5</sub> Maximum 24-Hour Average Concentration. The level for the 24-hour primary and secondary standard states 35 ug/m<sup>3</sup>. This should be 65 ug/m<sup>3</sup>, pursuant to 40 CFR 50.7.

- **45 CSR 39, 45 CSR 40, 45 CSR 41**

The opt-in unit language is deleted from each of these rules. What is the purpose for the deletion of these provisions?

- **33 CSR 30, Underground Storage Tank Rules**

Section 6.1. states "...including any person who accepts a delivery order, accepts payment, delivers or deposits product into an underground storage tank.....". The portion that states "...accepts payment..." should be removed from this section because those individuals within a company who accept payment or make payments most often do not know anything about the underground storage tank (UST), the operation of the UST, or the current regulatory status of the UST.

Section 7.3 a.1. states "...the methodology for verifying attendance, the date, time and location of the course, the name of the offering organization, the credentials of the instructors, and a certification that the technology or methods....."

1. The portion that states "...the date, time and location of the course,..." should be deleted. For large companies with many UST installations and locations there can be numerous individuals that need to be trained. Training will most likely occur on multiple dates, times, and locations that may not always be known until just prior to the training event. When new employees are hired training might

occur on short notice and for one individual. The burden of having to report the dates, time and locations would hinder and slow down the training process and restrict a company's ability to comply.

2. The portion that states "...the credentials of the instructors..." should be removed. Credentials will vary from instructor to instructor new instructors might be utilized, and a company might not know which instructors will be used at the various training sessions until just prior to the training session. In addition, the course content is the main issue of concern and should be the main focus in obtaining State approval of a training program.

Section 7.3.a.2 - This section states that a nonrefundable application fee of \$280 must be submitted with the application. Larger companies may have one training program, but administer the training on multiple dates, times and locations. Having to submit an application for approval of the training program each time the program is administered would be cost prohibitive, burdensome, and would hinder the training process. The State should clarify or make provision for a company to submit one application for the training program that will be administered to all company UST facilities. This will make the \$280 application fee reasonable and the application process less burdensome.

INDUSTRY'S REVISIONS

45CSR42

TITLE 45  
LEGISLATIVE RULE  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
DIVISION OF AIR QUALITY

SERIES 42  
GREENHOUSE GAS EMISSIONS INVENTORY PROGRAM

§45-42-1. General.

1.1 Scope -- This rule establishes a greenhouse gas emissions inventory program in West Virginia which:

1.1.a. Requires the reporting and inventory of greenhouse gas emissions by stationary sources which emit more than a *de minimis* amount of greenhouse gases on an annual basis;

1.1.b. Inventories greenhouse gas emissions from stationary, area, mobile and biogenic sources, and accounts for reductions and sequestration of greenhouse gas emissions;

1.1.c. Provides for a periodic compilation of a greenhouse gas emissions inventory and a determination whether West Virginia is a net sink or emitter of greenhouse gases;

1.1.d. Provides for development of a registry to record voluntary reductions of greenhouse gas emissions; and

1.1.e. Provides for a determination whether the reduction and sequestration of greenhouse gas emissions can be developed as an asset for economic development.

1.2 Authority -- W Va Code §22-5-19.

1.3. Filing Date --

1.4. Effective Date -- June 1, 2008.

§45-42-2. Definitions.

2.1. "Air pollutants" means solids, liquids, or gases which, if discharged into the air, may result in statutory air pollution

2.2. "Air pollution" or "statutory air pollution" means and is limited to the discharge into the air by the act of man substances (liquid, solid, gaseous, organic or inorganic) in a locality, manner and amount as to be injurious to human health or welfare, animal or plant life, or property, or which would interfere with the enjoyment of life or property.

2.3. "Anthropogenic" means a direct result of human activities or the result of natural processes that have been influenced significantly by human activities.

2.4. "Area source" means, for purposes of this rule, a collection of similar sources of air pollutants within a geographic area. Area sources collectively represent individual sources that are small and numerous, and that typically have not been inventoried as a stationary or mobile source.

2.5. "Biogenic" means a naturally occurring biological source or process that is not significantly affected by human actions or activity.

2.6. "Capture" means the collection of greenhouse gas emissions from a stationary source

2.7. "De minimis" means emissions from a stationary source that are equal to or less than ten thousand tons per year for carbon dioxide, four hundred seventy-six tons per year for methane, thirty-two and six tenths tons per year for nitrous oxide, eight hundred fifty-five thousandths tons per year for hydrofluorocarbons, one and nine hundredths tons per year for perfluorocarbons and forty-two hundredths tons per year for sulfur hexafluoride.

2.8. "Emission" means the release, escape or discharge of regulated air pollutants or greenhouse gases into the air.

2.9. "Greenhouse gas" means the gaseous compounds: carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride (SF<sub>6</sub>)

2.10. "Mobile source" means a variety of onroad and nonroad vehicles, engines, locomotives, marine vessels, airplanes and other equipment that generate air pollutants and greenhouse gas emissions, and that move or can be moved from place to place.

2.11. "Regulated air pollutant" means, for purposes of this rule, any air pollutant regulated under rules promulgated by the Secretary pursuant to W.Va. Code §22-5-4

2.12. "Reservoir" means a geological site where a greenhouse gas is securely stored.

2.13. "Secretary" means the Secretary of the Department of Environmental Protection or such other person to whom the Secretary has delegated authority or duties pursuant to W.Va Code §§22-1-6 or 22-1-8

2.14. "Sequestration" means the physical process by which emissions of a greenhouse gas are directly captured for storage

in a reservoir, or the biologic process by which a greenhouse gas is indirectly removed from the atmosphere for storage in a sink

2.15. "Sink" means any process, activity or mechanism which removes a greenhouse gas from the atmosphere. Forests are considered sinks because they remove carbon dioxide through photosynthesis.

2.16. "Source" means, for purposes of this rule, any process or activity which releases a greenhouse gas into the air.

2.17. "Stationary source" means any building, structure, facility, installation, stationary process or process equipment which emits or may emit any regulated air pollutant or greenhouse gas.

2.18. "Ton" means a short ton, or 2000 pounds.

2.19. Other words and phrases used in this rule, unless otherwise indicated, shall have the meaning ascribed to them in W.Va. Code §22-5-1 et seq

**§45-42-3. Applicability.**

3.1. Any stationary source that emits one or more greenhouse gases on an annual basis greater than the *de minimis* amounts listed in the table below, excluding biogenic emissions, and reports emissions of regulated air pollutants pursuant to the emissions inventory requirements of the Secretary under rule or W.Va. Code §22-5-4(a)(14), shall be an affected source required to report emissions of all greenhouse gases emitted above *de minimis* amounts to the Secretary under section 4:

Greenhouse Gas Compound	tons/year
carbon dioxide	10,000
methane	476

nitrous oxide	32.6
perfluorocarbons	1.09
sulfur hexafluoride	0.42

hydrofluorocarbons	0.855
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3.2. Stationary sources which are regulated by the Secretary under W Va. Code §22-3-1 et seq. and do not report emissions of regulated air pollutants pursuant to the emissions inventory requirements under W Va. Code §22-5-4(a)(14) are not required to, but may voluntarily report their greenhouse gas emissions under section 4.

#### §45-42-4. Reporting Requirements.

4.1. ~~By March 31, 2009, and March 31 of each year thereafter, affected~~ Affected sources shall report to the Secretary the quantity of all greenhouse gases emitted above *de minimis* amounts in the previous calendar year at the same time such sources are to report emissions of regulated air pollutants pursuant to the emissions inventory requirements of the Secretary under rule or W Va. Code §22-5-4(a)(14).

4.2. Affected sources shall only be required to report annual quantities of anthropogenic non-mobile source greenhouse gas emissions directly at the source, and shall not be required to report biogenic or mobile emissions of greenhouse gases, or indirect emissions of greenhouse gases, such as emissions occurring offsite from energy consumption.

4.3. The Secretary shall determine the form and format of the information reported by affected sources under subsection 4.1 to ensure that the information is consistent as possible with developing regional, national, or international greenhouse gas emissions programs

4.4. Notwithstanding the provisions of subsection 4.3, to satisfy the greenhouse gas

emission reporting requirements under this section, affected sources may submit greenhouse gas emissions inventory information from documented greenhouse gas inventories such as those provided to the Environmental Protection Agency's Climate Leaders Program, Chicago Climate Exchange Registry, the International Organization for Standardization and the SF<sub>6</sub> Emissions Reduction Partnership for Electric Power Systems. Greenhouse gas emissions inventory information from other widely recognized and verified greenhouse gas emissions inventory programs may be submitted by affected sources under this subsection, but shall be subject to approval by the Secretary on a case-by-case basis

4.5. Reports of greenhouse gas emissions submitted to the Secretary under this section shall be signed by a responsible official and shall include the following certification statement: "I, the undersigned, hereby certify that the data transmitted to the West Virginia Department of Environmental Protection is true, accurate, and complete, based upon information and belief formed after reasonable inquiry."

4.6. Greenhouse gases reported under this section are not subject to fees under 45 CSR 30, unless the greenhouse gases are otherwise regulated by the Secretary.

#### §45-42-5. Greenhouse Gas Emissions Inventory.

5.1. The Secretary shall periodically compile an inventory of greenhouse gas emissions to:

5.1.a. Characterize the relative contributions of greenhouse gas emissions from stationary, area, mobile and biogenic sources in West Virginia; and

5.1 b. Determine the extent to which greenhouse gas emissions are offset by the rate of sequestration, and whether West Virginia is a net sink or emitter of greenhouse gases.

5.2. The greenhouse gas emissions inventory shall include the emissions from stationary sources reported under section 4, and other relevant information regarding significant emissions, reductions, and sequestration of greenhouse gases from stationary, area, mobile and biogenic sources requested by the Secretary under subsections 5.3 and 5.4.

5.3. To inventory greenhouse gas emissions reductions, the Secretary shall consult with the citizenry and other entities such as industry trade groups that have information relating to greenhouse gas emissions reductions, and sequestration. ~~Upon request of the Secretary, such entities shall provide relevant information relating to greenhouse gas emissions reductions, capture and sequestration.~~

5.4. The Department of Agriculture, the Division of Forestry, Marshall University, West Virginia University, West Virginia Geological and Economic Survey, and the Department of Transportation shall enter into interagency agreements with the Secretary and at the Secretary's request provide:

5.4.a. Relevant information relating to greenhouse gas emissions from area, mobile and biogenic sources;

5.4.b. Relevant information relating to greenhouse gas emissions reductions and sequestration; and

5.4.c. Any assistance the Secretary may request during the development of the greenhouse gas emissions inventory.

5.5. The Secretary shall determine the form and format of the information submitted by the entities under subsections 5.3 and 5.4 to ensure

that the information is consistent as possible with developing regional, national, or international greenhouse gas emissions programs.

#### **§45-42-6. Greenhouse Gas Emissions Registry Program.**

6.1. The Secretary shall develop a registry for the recordation of voluntary reductions of greenhouse gas emissions.

6.2. The greenhouse gas emissions registry program shall be as consistent as possible with developing regional, national, or international programs designed to monitor, quantify and register reductions in greenhouse gas emissions with respect to:

6.2.a. Development of criteria, based on a set of standardized emissions accounting, reporting and verification protocols, to determine baseline emissions and quantification of voluntary reductions in emissions of greenhouse gases;

6.2.b. Public recognition of such voluntary emissions reductions;

6.2.c. Consideration of voluntary greenhouse gas emission reductions when determining baselines and reduction requirements under future federal greenhouse gas emission reduction programs; and

6.2.d. The ability of sources to participate in future greenhouse gas emission trading programs.

#### **§45-42-7. Economic Development Potential.**

7.1. Using information obtained, gathered or developed under this rule, the Secretary will determine whether the reduction and sequestration of greenhouse gas emissions can be developed as an asset for net economic development or will result in a deterrent to net economic development in West Virginia.

**§45-42-8. Inconsistency Between Rules.**

8.1. In the event of any inconsistency between this rule and any other rule of the West Virginia Department of Environmental Protection, the inconsistency shall be resolved by the determination of the Secretary and the determination shall be based upon the application of the more stringent provision, term, condition, method or rule

**Summary of Industry's Suggested Changes and Comments on  
45 CSR 42, Greenhouse Gas Emissions Inventory Program**

- Section 2.3. The definition of “anthropogenic” should be revised to state that it is the “result of natural processes that have been influenced significantly by human activities”. Adding the term “significantly” makes the definition consistent with the definition of “biogenic” which means a “naturally occurring biological source or process that is not significantly affected by human actions or activity.”
  
- Section 3.1. Applicability. This section should be revised to clarify that only individual greenhouse gases emitted above the *de minimis* amounts are required to be reported. Otherwise, affected sources that trigger any of the *de minimis* amounts could be required to report emissions of all of the greenhouse gases even if they are below the *de minimis* amounts. We do not believe that this is DEP’s intent. Also, this section should be revised to clarify that the *de minimis* amounts do not include biogenic emissions.
  
- Section 4.1. Reporting Requirements. This section should be revised to require reporting of greenhouse gases at the same time the air emissions inventory reporting is required. Sources should not be required to report their emissions at two different times. This section should also be clarified so that only greenhouse gases emitted above the *de minimis* amounts are required to be reported.
  
- Section 4.2 should be revised so that “mobile” emissions of greenhouse gases are not required to be reported. This section should also be revised to clarify that only direct emissions and not indirect greenhouse gas emissions (e.g., emissions occurring offsite from electricity consumption) are required to be reported. The references in section 4.3 to programs like Climate Leaders could lead sources to include indirect and direct emissions in their reporting. This would lead to double counting of electric generation greenhouse gas emissions and to higher source emissions compared to the *de minimis* amounts.
  
- Section 4.6 should be added so that sources will not be subject to fees for reporting greenhouse gas emissions, as the purpose of such reporting is to create an inventory, not to generate fees.
  
- Section 5.3. This section should be revised to delete the requirement that certain entities, including trade associations, must provide relevant information on greenhouse gas emissions, reductions, capture and sequestration to the Secretary upon request. This requirement is not found in the statute and could be interpreted to require such entities to report reductions, which is also not required under the statute.

- Section 7.1. Economic Development Potential This section should be revised to require the DEP to also determine whether reduction and sequestration will result in a deterrent to net economic development – not just whether it will be an asset.
- Additional questions/issues:
  - A reasonable protocol for reporting greenhouse gas emissions from stationary sources should be developed. Affected sources should not be required to report emissions from individual units within a stationary source if such emissions are insignificant. Affected stationary sources should have the option to report all of its greenhouse gas emissions in the aggregate.
  - Over 30 states have signed on to “The Climate Registry”. Does West Virginia intend on signing on? The rule indicates that West Virginia will have its own registry independent of “The Climate Registry”. Does DEP intend to rely upon any greenhouse gas registry programs, such as the Chicago Climate Exchange Registry, in developing the registry program?

**MEMORANDUM**

**TO:** Karen Price  
**FROM:** David L. Yaussy  
**DATE:** May 29, 2007  
**SUBJECT:** DEP Advisory Council Rules

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**A. Rules for Individual State Certification of Activities Requiring a Federal Permit.**  
Title 47, Series 5A.

No comment.

**B. National Pollutant Discharge Elimination System (NPDES) Program.**  
Title 47, Series 10.

We would urge the DEP to update the rule. It still contains references to the Chief, rather than the Director (See, for example, Sections 5.13.d.1, 6.2 and 9.1.a.)

Has the DEP updated this rule to reflect changes in the Code of Federal Regulations that were made since it was last comprehensively updated?

**C. Antidegradation Implementation Procedures.**  
Title 60, Series 5.

We agree that the State should do away with Section 6.2. There is no need for an initial presumptive listing procedure at this point. As for the 156 (I counted 157, but I may have miscounted) streams in Appendix A, we will disagree with all those listed except the 39 to which no objections were ever lodged.

**D. Requirements Governing Water Quality Standards.**

Title 57, Series 2.

There are a couple of minor errors – Section 2.2 has a “then” that should be “than” and Section 6.1 is missing text

We remain disappointed that the State continues to interpret its water quality standards to apply all uses in all streams at all times. Section 6.1 clearly provides that B and C are the only default, or universal, uses

Memorandum  
May 29, 2007  
Page 2

Appendix D should be eliminated. Category C, Water Contact Recreation, is a default use, and listing all streams with that use assigned to them suggests that there are streams that do not have that designation.

Appendix A. The DEP is listing a huge number of trout streams with no justification for their listing. If streams meet the requirements of trout waters, they qualify as such; if they do not, there is no reason to list them. Unless the DEP can document that each stream has year round, multi-age populations, they should not be listed.

DLY:shb

**FISCAL NOTE FOR PROPOSED RULES**Rule Title: 47CSR34 - "Dam Safety Rules"Type of Rule:  X  Legislative   Interpretive   ProceduralAgency: Division of Environmental ProtectionAddress: 601 57<sup>th</sup> Street SE  
Charleston, WV 25304Phone Number: 926-0475Email: mzeto@wvdep.org**Fiscal Note Summary**

Summarize in a clear and concise manner what impact this measure will have on costs and revenues of state government.

Depending upon the availability of loan funds, it is estimated to cost \$50,000 to \$150,000 annually to administer the loan program. The cost will vary based upon funds available and the number of projects funded.

**Fiscal Note Detail**

Show over-all effect in Item 1 and 2 and, in Item 3, give an explanation of Breakdown by fiscal year, including long-range effect.

**FISCAL YEAR**

Effect of Proposal	2008 Increase/Decrease (use "-")	2009 Increase/Decrease (use "-")	Fiscal Year (Upon Full Implementation)
<b>1. Estimated Total Cost</b>	\$ 50,000	\$ 100,000	\$150,000
Personal Services	0	0	0
Current Expenses	0	0	0
Repairs & Alterations	0	0	0
Assets	0	0	0
Equipment	0	0	0
Other	\$50,000	\$100,000	\$150,000
<b>2. Estimated Total Revenues</b>	0	0	0

Rule Title: 47CSR34 - "Dam Safety Rules"

3. **Explanation of above estimates (including long-range effect):**  
Please include any increase or decrease in fees in your estimated total revenues.

Estimates are contingent upon funds made available for the loan program.

### MEMORANDUM

Please identify any areas of vagueness, technical defects, reasons the proposed rule **would not** have a fiscal impact, and/or any special issues **not** captured elsewhere on this form.

Date: June 5, 2007

Signature of Agency Head or Authorized Representative

\_\_\_\_\_  
Lisa A. McClung, Director

FILED

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TITLE 47  
LEGISLATIVE RULES  
BUREAU OF ENVIRONMENT  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
OFFICE OF WATER RESOURCES  
DIVISION OF WATER AND WASTE MANAGEMENT

OFFICE OF WEST VIRGINIA  
SECRETARY OF STATE

SERIES 34  
DAM SAFETY RULES

§47-34-1. General.

1.1. Scope and Purpose. -- This legislative rule establishes requirements relating to the design, placement, construction, enlargement, alteration, removal, abandonment, and repair of dams in this State that fall within the definition set forth in Section ~~2-10~~ 2.12. of this rule. This legislative rule also establishes requirements to govern the disbursement and use of moneys held in the state Dam Safety Rehabilitation Revolving Fund. The Fund shall be used solely to make loans to persons who own an interest in a deficient dam to finance the engineering, design, alteration, improvement, repair, breaching or removal of the deficient dam necessary to correct or remove the deficiencies and other activities as authorized by a federal grant or a legislative appropriation and to defray costs incurred by the department in administering the Fund. The scope of this rule does not extend to those dams that are related to coal activities.

1.2. Authority. -- W. Va. Code §22-14-4 and §22-14-19(c).

1.3. Filing Date. -- April 10, 1995.

1.4. Effective Date. -- May 10, 1995.

1.5. Amendment of Existing Rule. -- This legislative rule amends the Dam Safety Regulations, 47 C.S.R. 34, filed and made effective May 10, 1995.

§47-34-2. Definitions.

2.1. "Abandonment" means to render a dam non-impounding by filling the reservoir created by that dam with solid materials and by diverting the natural drainway around the site.

2.2. "Act" means the West Virginia Dam Control and Safety Act, W. Va. Code §22-14-1, et seq.

2.3. "Applicant" means a person that applies for a loan pursuant to the provisions of this rule.

~~2.3.~~ 2.4. "Appurtenances" means any ancillary part of a dam or reservoir system which contributes to the operation or construction of the dam.

~~2.4.~~ 2.5. "Assessment Officer" means a person appointed by the ~~director~~ secretary to carry out the review and hearing procedures outlined in this rule.

~~2.5.~~ 2.6. "Average Time Headway" means the number of seconds in one day divided by the average daily traffic.

~~2.6.~~ 2.7. "Breach" means partial removal of a dam, creating a channel through the dam at the original stream bottom elevation.

~~2.7.~~ 2.8. "Bridge" means a structure, including any abutments or supports appurtenant to that structure, which:

~~2.7.a.~~ 2.8.a. Meets the definition of "dam" set forth in subsection ~~2.10.~~ 2.12. of this rule;

~~2.7.b.~~ 2.8.b. Is constructed across a natural drainway for the purpose of maintaining a pathway, railway, roadway, support structure, or other passageway for transporting persons, traffic, or other static or moving loads; and

~~2.7.c.~~ 2.8.c. Has an opening under the structure to provide for the passage of normal stream flow.

~~2.8.~~ 2.9. "Certificate of Approval" means the written approval ~~in writing~~ issued by the ~~director~~ secretary to a person who has applied to the ~~director~~ secretary for a certificate of approval ~~which that~~ authorizes the person to place, construct, enlarge, alter, remove, abandon, or repair a dam and which specifies the conditions or limitations under which the work is to be performed by the applicant.

~~2.9.~~ 2.10. "Channel Protection" means any measure taken to prevent or control erosion, cavitation, or other destructive processes in channels such as diversion ditches and spillways.

2.11. "Cost" means the total of all costs incurred by a person that are reasonable and necessary for carrying out all works and undertakings necessary or incidental to the accomplishment of any project including:

2.11.a. The costs of developmental, planning, and feasibility studies, surveys, plans, and specifications;

2.11.b. The costs of architectural, engineering, financial, legal, or other special services;

2.11.c. The costs of acquisition of land and any buildings and improvements thereon, including the discharge of any obligations of the sellers of such land, buildings, or improvements;

2.11.d. The costs of site preparation and development, including demolition or removal of existing structures, construction and reconstruction, labor, materials, machinery, and equipment;

2.11.e. The reasonable costs of financing incurred by the local entity in the course of the development of the project, carrying charges incurred before placing the project in service, interest on funds borrowed to finance the project to a date subsequent to the estimated date the project is to be placed in service, necessary expenses incurred in connection with placing the project in service, and the funding of accounts and reserves as required by the secretary; and

2.11.f. Such other items as are deemed reasonable and necessary by the secretary.

~~2.10.~~ 2.12. "Dam" means an artificial barrier or obstruction --including any works appurtenant to it and any reservoir created by it -- which is or will be placed, constructed, enlarged, altered, or repaired so that it does or will impound or divert water and is or will be twenty-five (25) feet or more in height from the natural bed of a stream or watercourse measured at the downstream toe of the barrier and which does or can impound fifteen (15) acre-feet or more of water or is or will be six (6) feet or more in height from the natural bed of

such stream or watercourse measured at the downstream toe of the barrier and which does or can impound fifty (50) acre-feet or more of water. ~~The term "dam" does not include:~~ "Dam" does not mean:

~~2-10.a.~~ 2.12.a. Any dam owned by the federal government;

~~2-10.b.~~ 2.12.b. Any dam for which the operation and maintenance thereof is the responsibility of the federal government;

~~2-10.c.~~ 2.12.c. Any farm pond constructed and used primarily for agricultural purposes -- including, but not limited, to livestock watering, irrigation, retention of animal wastes, and fish culture -- ~~which that~~ has no potential to cause a loss of human life in the event of embankment failure; or

~~2-10.d.~~ 2.12.d. ~~Structures which Roadfill or other transportation structures that do not or will not impound water under normal conditions and which that have a designed culvert or similar conveyance or such capacity as that would be used under a highway at the same location: Provided, however, That the director secretary may apply the provisions of W Va Code §22-14-10 for hazardous, non-impounding structures which are brought to his or her attention, that become a hazard to human life or property through the frequent or continuous impoundment of water.~~

~~2-11.~~ 2.12. "Deficient dam" means a noncoal-related dam that exhibits one or more design, maintenance, or operational problems that may adversely affect the performance of the dam over a period of time or during a major storm or other inclement weather that may cause loss of life or property; or a noncoal-related dam that otherwise fails to meet the requirements of this rule.

~~2-11.~~ 2.14. "Dam Safety Section" means the Dam Safety Section of the ~~Division~~ Department of Environmental Protection ~~of the West Virginia Bureau of Environment.~~

~~2-12.~~ 2.15. "Dangerous Condition" means any structural or hydraulic condition of a dam or its appurtenances which may lead to:

~~2-12.a.~~ 2.15.a. Failure of the dam and possible loss of human life or substantial loss of property;

~~2-12.b.~~ 2.15.b. Harm to the public health or welfare; or

~~2-12.c.~~ 2.15.c. Significant harm to the environment.

~~2-12.~~ 2.16. "Design Storm" means predicted precipitation of given intensity, frequency, and duration based upon National Weather Service data that is required to be considered in the design of a dam.

~~2-14.~~ "Director" means the director of the Division of Environmental Protection of the West Virginia Bureau of Environment or his or her authorized representative.

2.17. "Disbursement" means the transfer of cash from the Fund to an applicant.

~~2-15.~~ 2.18. "Diversion Ditch" means a designed channel constructed for the purpose of collecting and transmitting surface runoff resulting from a given design storm.

2.19. "Eligible Recipient" means a person that:

2.19.a. Appears on the state Project Priority List;

2.19.b. Has submitted a complete application for a project with eligible costs; and

2.19.c. Will be in a state of readiness to proceed to planning, design, or construction and expend loan payments in a timely manner.

~~2.16.~~ 2.20. "Embankment" means a constructed deposit of earth or waste materials, usually exhibiting at least one sloping face.

~~2.17.~~ 2.21. "Emergency Condition" means an imminently dangerous condition where failure of the dam is possible at any time.

~~2.18.~~ 2.22. "Emergency Spillway" means a hydraulic structure designed to discharge water in excess of that which an impoundment is designed to store or which cannot be passed through a principal spillway.

~~2.19.~~ 2.23. "Enforcement Action" means a written notification provided to an alleged violator by the ~~director~~ secretary within fifteen (15) calendar days of an inspection, or in accordance with the provisions of the Act.

~~2.20.~~ 2.24. "Engineer" or "Registered Professional Engineer" means a person who by reason of his or her knowledge of mathematics, the physical sciences, and the principles of engineering, acquired by professional education and practical experience, is qualified to engage in the practice of professional engineering and holds a current certificate of registration issued by the State granting its licensee the privilege of practicing professional engineering in accordance with the provisions of W. Va. Code §30-13-1 et seq.

~~2.21.~~ 2.25. "Freeboard" means the vertical distance between the lowest point of the crest of the embankment of a dam and the reservoir water surface.

2.26. "Fund" or "DSRRF" means the state Dam Safety Rehabilitation Revolving Fund.

~~2.22.~~ 2.27. "Geotechnical Engineering" means the application of soil mechanics, rock mechanics, and geology to the solution of problems involving engineering structures and their interaction with surrounding earth materials.

~~2.23.~~ 2.28. "Hazard Classification" means a classification rating assigned to a structure based upon engineering evaluations and judgments for predicting the danger to human life, property, and environment should a failure of the structure occur.

~~2.24.~~ 2.29. "High Risk Highway" means a roadway, roadfill, bridge, support structure, or other passageway for transporting persons, traffic, or other static or moving loads where the average time headway between vehicles in traffic is less than the duration of overtopping caused by the dam break flood wave.

~~2.25.~~ 2.30. "Hydraulics" means the study of the physical behavior of liquids, especially water, in natural or man-made systems or processes.

~~2.26.~~ 2.31. "Hydrologic Analysis" means a determination, using accepted engineering methods, to establish surface water runoff for a given design storm.

~~2.27.~~ 2.32. "Hydrology" means the science that deals with the occurrence and behavior of water in the atmosphere, on the ground, and underground.

~~2.28.~~ 2.33. "Impoundment" means a basin for the retention of water, sediment, or waste.

~~2.29.~~ ~~2.34.~~ "Incised Reservoir" means an impoundment, or that portion of an impoundment, which has been excavated below the natural stream level into natural ground.

~~2.35.~~ "List of Deficient Dams" means the prioritized list of projects as determined by the secretary that may qualify for DSRRF loan assistance.

~~2.36.~~ "Loan" means a loan made by the secretary to an applicant pursuant to Section 21 of this rule for funding all or part of a project's costs.

~~2.37.~~ "Loan Agreement" means an agreement entered into between the secretary, on behalf of the state, and the applicant pertaining to a loan.

~~2.30.~~ ~~2.38.~~ "Low Risk Highway" means a roadway, roadfill, bridge, support structure, or other passageway for transporting persons, traffic, or other static or moving loads where the average time headway between vehicles in traffic is greater than the duration of overtopping caused by the dam break flood wave.

~~2.31.~~ ~~2.39.~~ "Major Damage" means destruction, ruin, collapse, or displacement of dwellings, commercial or industrial buildings, public highways or bridges, or important public utilities. Dwellings, buildings, public highways or bridges, or important public utilities will sustain major damage when:

~~2.31.a.~~ ~~2.39.a.~~ The dwelling, commercial or industrial building, public highway or bridge, or important public utility is in the direct path of the dam break flood wave, or;

~~2.31.b.~~ ~~2.39.b.~~ Important public utilities equipment or public highways or bridges will be harmed sufficiently to cause disruption of service, or to require repair or replacement of the important public utility equipment, or public highway or bridge, or;

~~2.31.c.~~ ~~2.39.c.~~ The dwelling, commercial or industrial building or important public utility will experience more than 1.5 feet of flood rise due to the dam break flood wave above the lowest ground elevation adjacent to the outside foundation walls; or more than 1.5 feet of flood rise due to the dam break flood wave above the lowest floor elevation of the dwelling, commercial or industrial building or important public utility. The lower of the elevations shall govern.

~~2.34.~~ ~~2.40.~~ "Minor Damage" means insignificant harm to dwellings, commercial or industrial buildings, public highways or bridges, or public utilities that does not qualify as major damage.

~~2.32.~~ ~~2.41.~~ "Natural Bed" means the lowest elevation of a stream, intermittent stream, or channel created by nature which has not been altered or changed by the actions of man.

~~2.33.~~ ~~2.42.~~ "Natural Drainway" means any natural watercourse which may carry water to the tributaries and rivers of the watershed.

~~2.35.~~ ~~2.43.~~ "Notice of Civil Administrative Penalty" means a written notification provided to a violator by the ~~director~~ secretary, by means of certified mail or personal service, assessing a civil administrative penalty. A notice of civil administrative penalty shall include:

~~2.35.a.~~ ~~2.43.a.~~ A reference to the section of the statute, rule, regulation, order, or certificate of approval term allegedly violated;

~~2.35.b.~~ ~~2.43.b.~~ A concise statement of the facts alleged to constitute the violation;

~~2.35.e.~~ 2.43.c. A statement of the amount of the initial civil administrative penalty to be imposed;  
and

~~2.35.d.~~ 2.43.d. A statement of the alleged violator's right to an informal hearing.

~~2.36.~~ 2.44. "Notice of Dismissal" means a written notification provided to a violator by the assessment officer or the ~~director~~ secretary dismissing and vacating the civil administrative penalty. A notice of dismissal may be issued at any time during the proceedings.

~~2.37.~~ 2.45. "P100" means the rainfall amount based upon a one hundred (100) year frequency, six (6) hour duration rainfall event (i.e, a 100-year, 6-hour storm).

~~2.38.~~ 2.46. "Person" means any public or private corporation, institution, association, society, firm, organization or company organized or existing under the laws of this or any other state or country; the state of West Virginia; any state governmental agency; any political subdivision of the state or of its counties or municipalities; a sanitary district; a public service district; a drainage district; a conservation district; a watershed improvement district; a partnership; trust, or estate; a person or individual; a group of persons or individuals acting individually or as a group; or any other legal entity ~~whatever~~. The term "person", when used in this article, includes and refers to any authorized agent, lessee or trustee of any of the foregoing or receiver or trustee appointed by any court for any of the foregoing.

~~2.39.~~ 2.47. "Piping" means progressive internal erosion of earth material or adjacent unaltered material caused by water movement through embankment material with sufficient force to move soil particles, leading to the development of a channel or a hole.

~~2.40.~~ 2.48. "Principal Spillway" means the hydraulic structure designed to discharge water stored between the normal pool and the emergency spillway invert elevations.

~~2.41.~~ 2.49. "Probable Maximum Precipitation" or "PMP" means the depth-duration-area rainfall event for a particular area that represents the maximization of the most critical meteorological conditions that are considered possible to occur.

~~2.42.~~ 2.50. "Project Area" means all areas physically affected by the construction of a dam including, but not limited to, the dam and its appurtenances, the reservoir area, construction zones, permanent or temporary access roads, borrow areas, materials storage areas, staging areas, and waste disposal areas.

2.51. "Project Completion" means the date of acceptance of construction in accordance with subsection 8.3.c. of this rule.

2.52. "Recipient" means a person that has received a loan from the secretary pursuant to the provisions of this rule.

~~2.43.~~ 2.53. "Removal" means complete elimination of the dam embankment or structure to restore the approximate original topographic contours of the valley.

~~2.44.~~ 2.54. "Roadfill" means a barrier or obstruction which:

~~2.44.a.~~ 2.54.a. Meets the definition of "dam" set forth in subsection ~~2.10~~ 2.12. of this rule;

~~2.44.b.~~ 2.54.b. Is constructed across a natural drainway for the purpose of maintaining a roadway or similar crossing across that drainway; and

~~2.44.e.~~ 2.54.c. Has a culvert located in the drainway that is of sufficient size to prevent the normal impoundment of water.

~~2.45.~~ 2.55. "Safety Factor" or "Factor of Safety" means the ratio of the sum of the forces or moments resisting mass movement to the sum of the forces or moments tending to produce mass movement.

2.56. "Secretary" means the secretary of the West Virginia Department of Environmental Protection or his or her authorized representative.

~~2.46.~~ 2.57. "Sediment" means solid material, either mineral or organic, resulting from the works of man that has been moved from its site of origin by water.

~~2.47.~~ 2.58. "Serious Problem" means a situation which left uncorrected may lead to a dangerous condition.

~~2.48.~~ 2.59. "Significant Harm to the Environment" means the degradation of a public or private surface water supply, the alteration of habitat that adversely affects wildlife, or the reduction of the productivity of agricultural land.

~~2.49.~~ 2.60. "Site" means the permanent location of a dam, including the dam and its appurtenances, the reservoir area, diversion ditches, and sediment control facilities.

~~2.50.~~ 2.61. "Subsidence" means a sinking, collapsing, or cracking of a portion of the earth's surface resulting from the presence of a void or voids beneath the surface.

~~2.51.~~ 2.62. "Violator" means the person who is alleged to have violated the Act, or any rule, regulation, notice to comply, order, or certificate of approval term imposed pursuant to the Act.

~~2.52.~~ 2.63. "Written Decision" means a written decision furnished to the violator concerning the ~~director's~~ secretary's final decision regarding the assessment of a civil administrative penalty and the reasons therefor.

### **§47-34-3. Classification of Dams.**

3.1. Types of Dams - For the purpose of this rule, dams are divided into four general types:

3.1.a. Embankment Dams - Embankment dams are usually constructed of materials which exhibit rock-like or soil-like properties.

3.1.b. Gravity Dams - Gravity dams are usually constructed of concrete or masonry materials which form a rigid body.

3.1.c. Waste Disposal Dams - Waste disposal dams are usually constructed of waste materials such as fly ash or coal refuse. The reservoir is utilized to dispose of waste material, thereby creating a continuously decreasing freeboard condition.

3.1.d. Dams of Multiple Type - In cases where a dam exhibits properties of more than one type, such as gabion structures or roller-compacted concrete, the person or his or her agent must apply design techniques which are reasonably applicable to the particular structure involved.

### 3.2. Dam-Related Measurements.

3.2.a. Measuring Dam Height - The height of a dam is measured from the crest or uppermost point on the dam to the lowest point in the natural bed of the stream or watercourse at the downstream toe of the dam. Gravity overflow dams must be measured to the highest level which is greater than ten percent (10%) of the total crest length of the dam. The height of dams with sloping crests shall be determined by a weighted-average height above the natural bed of the stream or watercourse, excluding spillways.

3.2.b. Measuring Reservoir Volume - For purposes of determining whether a dam meets the criteria set forth in subsection ~~2-10~~ 2.12. of this rule as applied to reservoir volume calculations, the volume must be calculated at the crest elevation of the dam that is equivalent to the elevation used in determining the dam height.

3.2.c. Incised Reservoirs - The height of the embankment of an incised reservoir must be measured using the method set forth in paragraph ~~3-2-1~~ 3.2.a. of this rule. Reservoir volume must be calculated from the crest of the embankment to the elevation of the lowest point in the natural bed of the stream or watercourse at the downstream toe. That portion of the water stored below stream grade shall not be included in determining whether a dam meets the criteria set forth in subsection ~~2-10~~ 2.12. of this rule; however, it must be reported in the application as part of the total reservoir volume.

3.3. Dams in Series - If the ~~director~~ secretary determines that a series or combination of water-impounding structures within the same watercourse, or within the tributaries of the watercourse, which cumulatively meet the definition of "dam" set forth in subsection ~~2-10~~ 2.12. of this rule constitute a hazard to human life, and failure of one or more of the impounding structures may induce failure of any or all of the remaining impounding structures, he or she may require the owner or owners of each impounding structure to comply with the requirements of this rule.

### 3.4. Incidental Dams.

#### 3.4.a. Roadfills.

3.4.a.1. If the ~~director~~ secretary finds that a roadfill has become a hazard to human life or property through the frequent or continuous impoundment of water, he or she may order the owner of that roadfill to take all steps that are necessary to protect life or property in accordance with the emergency powers provided under W. Va. Code §22-14-10.

3.4.a.2. A certificate of approval will not be required for roadfills.

#### 3.4.b. Bridges.

3.4.b.1. If the ~~director~~ secretary finds that a bridge has become a hazard to human life or property through the frequent or continuous impoundment of water, he or she may order the owner of that bridge to take all steps that are necessary to protect life or property in accordance with the emergency powers provided under W. Va. Code §22-14-10.

3.4.b.2. A certificate of approval will not be required for bridges.

3.4.c. Diversions - A certificate of approval will be required for dikes or other structures used to divert water and otherwise meeting the definition of "dam" set forth in subsection 2-10 2.12. of this rule.

3.4.d. Stream Encroachments - If the ~~director~~ secretary finds that a natural drainway has been restricted by filling or other artificial means so that the restriction can or does impound water, and the fill and resulting reservoir meets the height and storage requirements of a "Dam" as defined in this rule, he or she may order the fill removed or require a certificate of approval or both.

3.5. Classification of Dams - The applicant for a certificate of approval must propose the hazard classification for his or her dam based upon the classification guidelines listed in paragraph ~~3.5.2~~ 3.5.b. of this rule and the hazard evaluation performed pursuant to paragraph ~~3.5.3~~ 3.5.c. of this rule. The classification proposed by an applicant is subject to approval by the ~~director~~ secretary.

3.5.a. Changes in Dam Classification - The ~~director~~ secretary will periodically review the hazard classification of each dam subject to this rule and may reclassify a dam if he or she determines that the hazard potential has changed. The owner shall be notified by the ~~division~~ secretary of any hazard classification change.

#### 3.5.b. Hazard Classifications.

3.5.b.1. Class 1 (High Hazard) Dams - Class 1 dams are those dams located where failure may cause loss of human life or major damage to dwellings, commercial or industrial buildings, main railroads, important public utilities, or where a high risk highway may be affected or damaged. This classification must be used if failure may result in the loss of human life.

3.5.b.2. Class 2 (Significant Hazard) Dams - Class 2 dams are those dams located where failure may cause minor damage to dwellings, commercial or industrial buildings, important public utilities, main railroads, or cause major damage to unoccupied buildings, or where a low risk highway may be affected or damaged. The potential for loss of human life resulting from failure of a Class 2 dam must be unlikely.

3.5.b.3. Class 3 (Low Hazard) Dams - Class 3 dams are those dams located in rural or agricultural areas where failure may cause minor damage to nonresidential and normally unoccupied buildings, or rural or agricultural land. Failure of a Class 3 dam would cause only a loss of the dam itself and a loss of property use, such as use of related roads, with little additional damage to adjacent property. The potential for loss of human life resulting from failure of a Class 3 dam must be unlikely.

3.5.b.3.A. An impoundment exceeding forty (40) feet in height or four hundred (400) acre-foot storage volume shall not be classified as a Class 3 dam.

3.5.b.3.B. A waste disposal dam, the failure of which may cause significant harm to the environment, shall not be classified as a Class 3 dam.

3.5.b.4. Class 4 (Negligible Hazard) Dams - Class 4 dams are dams where failure is expected to have no potential for loss of human life, no potential for property damage and no potential for significant harm to the environment. Examples of Class 4 dams include: dams across rivers, failure of which under any conditions will not flood areas above normal streambank elevations; dams located in the reservoir of another dam which, under any conditions, can contain water released by failure of the Class 4 dam; and dams in series where the toe of the Class 4 dam(s) is in close proximity to the reservoir of a dam which can contain failure of the Class 4 dam(s) under any condition. In considering a request for a Class 4 designation, the ~~director~~ secretary may require written concurrence from the owner(s) of downstream dams that may be affected by

failure of the Class 4 dam. Approval for use of this classification is vested in the ~~director~~ secretary, and will be based on engineering evaluation of the dam(s) and downstream areas in question.

### 3.5.c. Hazard Evaluation.

3.5.c.1. Downstream Hazards - In evaluating the hazard potential of a dam in order to determine its hazard classification, a complete evaluation of the downstream area which will be affected in the event of dam failure must be performed. A sudden flooding of inhabited land accompanied by a water flow with damaging velocity, a wall of water, or the flooding of inhabited structures will all be deemed to have the potential to result in a loss of human life. The planned or potential future development of downstream areas must also be considered when evaluating hazard classification.

3.5.c.2. Dam Break Analysis - An applicant must perform a downstream breach analysis to evaluate and map the downstream inundation area under assumed normal conditions and overtopping failure conditions.

3.5.c.2.A. The ~~director~~ secretary may waive the downstream breach analysis required under subparagraph ~~3.5.3.b~~ 3.5.c.2. of this rule for a Class 2 or Class 3 or Class 4 dam where downstream conditions prevent any future introduction of new facilities or residences that thereby change the hazard classification of the dam.

3.5.c.3. Upstream Hazards - No dam shall be constructed which, during maximum pool conditions, will flood upstream dwellings, public utilities, primary highways, or main railroads unless otherwise approved by the ~~director~~ secretary based upon site-specific conditions.

3.5.d. Risk Assessment - The applicant may propose a risk assessment according to the following provisions to determine the affect upon dwellings or other buildings downstream (paragraph 3.5.d.1. of this rule), to reduce the hazard classification (subdivision 3.5.b. of this rule) or to reduce the design storm requirements (paragraph 7.1.a.2. of this rule) based upon failure of the dam by overtopping. The applicant must include appropriate calculations to support the request for hazard classification or design storm requirement reduction. The ~~director~~ secretary will not consider risk assessment based upon planned evacuation, probability of inhabitation, or monetary recovery of property damage. If both paragraph 3.5.d.1. (Dwellings or other Buildings Affected Downstream) and paragraph 3.5.d.2. (Highways Affected Downstream) pertain to the downstream area, then the hazard classification representing the greatest risk category and the largest of the design storm requirements resulting from the above calculations shall apply. Approval of hazard classification reduction or reduction of design storm requirements based upon risk assessment is vested in the ~~director~~ secretary, and will be based on engineering evaluation of the dam(s) and downstream areas in question.

3.5.d.1. Dwellings or Other Buildings Affected Downstream - The ~~director~~ secretary may consider reduced design storm requirements (subparagraph 7.1.1.b. of this rule) within the approved hazard classification, if the applicant can demonstrate that all affected dwellings, commercial and industrial buildings or important public utilities will be inundated and evacuated prior to the dam failure. The applicant must also demonstrate that the potential for loss of human life resulting from the dam failure is not significantly increased from that which occurs immediately prior to the dam failure.

3.5.d.2. Highways Affected Downstream - The ~~director~~ secretary may consider reduced hazard classification (paragraph ~~3.5.2.~~ 3.5.b. of this rule) and reduced design storm requirements (subparagraph ~~7.1.1.b.~~ 7.1.a.2. of this rule), if the applicant can demonstrate that affected highway(s) will be impassable and traffic will be stopped in the dam failure inundation area due to the highway(s) being flooded by high water prior to the dam failure. The applicant must also demonstrate that the potential for loss of human life resulting

from the dam failure is not significantly increased from that which occurs immediately prior to the dam failure.

#### **§47-34-4. Certificates of Approval.**

4.1. Certificate Required - A person must obtain a certificate of approval from the ~~director~~ secretary in order to place, construct, enlarge, alter, breach, remove, abandon, or perform major repairs upon any dam in this State that falls within the definition set forth in subsection ~~2.10~~ 2.12 of this rule.

#### 4.2. Certificate Issuance.

4.2.a. Certificates of approval may constitute full and final approval of a dam or be issued for alterations or repairs, in which case the certificate may or may not constitute final approval of the dam.

4.2.b. The ~~director~~ secretary will issue or refuse to issue a certificate of approval based upon the following:

4.2.b.1. The receipt of a complete application, including all applicable fees, in accordance with the provisions of subsection 5.1 of this rule;

4.2.b.2. The review of the application form and plan package for sufficiency; and

4.2.b.3. The results of any hearings held in accordance with the provisions of W. Va. Code §22-14-7.

4.2.c. The ~~director~~ secretary will return defective applications to the applicant by certified or registered mail, return receipt requested, in order that the applicant may correct any defect. The applicant must send a corrected application to the ~~director~~ secretary within thirty (30) days of the date of the applicant's receipt of the returned application. The ~~director~~ secretary may extend the thirty-day period upon the receipt of a written request from the applicant.

4.2.d. Upon the receipt of written approval from the ~~director~~ secretary of the sufficiency of the application, the applicant shall immediately publish a Class I legal advertisement in a qualified newspaper, as defined in W. Va. Code §59-3-1, serving the county in which the proposed dam is to be located or in which the existing dam is located. The notice shall include the name and address of the applicant, the location of the dam for which the application was filed, and such other information as may be specified by the ~~director~~ secretary in his or her written approval.

4.3. Hearings Prior to Certificate Issuance - Any person, ~~as defined in W. Va. Code §22-14-3~~, who may be adversely affected by the issuance of a certificate of approval shall have a right to a hearing before the ~~director~~ secretary. A written request for a public hearing, detailing the specific objections to the issuance of the certificate of approval, must be sent to the ~~director~~ secretary within fifteen (15) days of the publication of the Class I legal advertisement required under subdivision 4.2.d. of this rule. Hearings that concern specific objections to the issuance of a certificate of approval will be conducted in accordance with the provisions of W. Va. Code §22-14-7 at a location and time set by the ~~director~~ secretary.

4.4. Certificate Revocation or Suspension - The ~~director~~ secretary may revoke or suspend a certificate of approval in accordance with the provisions of W. Va. Code §22-14-8 if he or she determines that a dam for which the certificate was issued constitutes a danger to life and property.

4.5. Certificate Terms and Conditions - A certificate of approval may include such terms and conditions as the ~~director~~ secretary may find necessary for the construction or operation of the dam. These terms and conditions may be amended by the ~~director~~ secretary in accordance with the provisions of W. Va. Code §22-14-8.

4.6. Approval to Impound Water - No person may cause a reservoir to initially fill with water, or refill a drained reservoir, without written approval from the ~~director~~ secretary.

4.6.a. Upon the receipt of a written petition from a dam owner, the ~~director~~ secretary may waive or modify the refilling approval requirement of subsection 4.6 of this rule in a case where frequent draining and refilling of a reservoir is the intended purpose and normal operation of the owner's dam.

4.7. Other Approvals - The ~~director~~ secretary may refuse to issue a certificate of approval or may delay issuing a certificate of approval if the applicant fails to obtain necessary approvals from State or federal agencies.

4.7.a. Waterways Under State or Federal Jurisdiction - Construction of a dam across a waterway which is under the jurisdiction of the State or federal government may require State or federal agency approval prior to issuance of a certificate of approval by the ~~director~~ secretary.

4.7.b. Wetlands - Construction of a dam which may inundate, drain, or otherwise adversely affect wetlands (i.e., swamps, marshes, bogs, and similar areas) may require State and federal agency approval.

#### **§47-34-5. Application Procedures.**

##### 5.1. Application Preparation and Submission.

5.1.a. Applications for a certificate of approval shall be prepared by or under the direct supervision of an engineer.

5.1.b. Applications shall be submitted on the forms provided by the ~~director~~ secretary. Application forms must be completed in their entirety without unauthorized omissions, alterations, or additions. Applications shall be signed by the applicant and an engineer.

5.1.c. A complete application will consist of a completed and signed application form, all applicable fees, and a plan package containing the information required under subsection 6.4 of this rule.

5.1.d. Plans, reports, specifications, and design drawings shall be signed and sealed by an engineer in accordance with the provisions of subsection 6.2 of this rule.

##### 5.2. Application Review.

5.2.a. Applications will be reviewed for sufficiency by the Dam Safety Section. The review will consider the completeness and technical accuracy of the information submitted and will evaluate all engineering plans and assumptions to determine the safety of the dam.

5.2.b. Applications which are incomplete or otherwise not in compliance with the requirements of this rule will be returned to the applicant for correction in accordance with the provisions of W. Va. Code §22-14-7.

#### **§47-34-6. Plans and Specifications.**

6.1. Plans and Specifications - Plans and specifications relating to the design, placement, construction, enlargement, alteration, removal, abandonment, or repair of a dam must be prepared in accordance with the requirements of Sections 7 through 12 of this rule.

6.2. Engineer's Signature and Seal Required - All plans and specifications shall be signed and sealed by an engineer. The engineer's signature and seal are required on each full-size plan sheet, even if the sheets are bound together, and are further required on the front page of any engineering report book and each unbound sheet of drawings or specifications included in appendices or pockets.

6.3. Engineering Practices - All plans and specifications for the placement, construction, enlargement, alteration, breaching, removal, abandonment, or repair of a dam shall be in the charge of an engineer.

6.3.a. Standard Practices - All engineering designs, procedures, processes, and analyses shall be based upon standard, accepted, and sound engineering practices. Practices which are questionable or difficult to prove analytically may be rejected by the ~~director~~ secretary or returned for additional information.

6.3.b. Experimental Practices - Experimental design will not be approved by the ~~director~~ secretary unless the experiment meets the following conditions:

6.3.b.1. Engineering analysis indicates the design is realistic and success is likely;

6.3.b.2. Failure of the experiment to perform properly will not endanger life and property or cause the failure of the dam; and

6.3.b.3. The engineer and dam owner agree to redesign and modify the experimental design if it does not perform properly.

6.4. Plan Package Organization - Each plan package submitted for approval shall contain the following information, arranged in the following order, unless an alternative submission format is approved by the ~~director~~ secretary:

6.4.a. Project Narrative - A general narrative discussion of the project shall be included in the plan package to detail the following:

6.4.a.1. Existing site conditions;

6.4.a.2. Local geology and geotechnical considerations;

6.4.a.3. Design life of the dam and its appurtenances;

6.4.a.4. Subsidence potential;

6.4.a.5. Design techniques with associated design computations and data;

6.4.a.6. Environmental protection measures for the control of erosion and sedimentation and for the disposal of construction wastes;

6.4.a.7. Method of construction, including clearing and grubbing, topsoil stockpiles, and surface and subsurface drainage structures;

6.4.a.8. Phases or sequence of construction; and

6.4.a.9. Routine inspection and maintenance procedures and schedules.

6.4.b. Construction Sequence and Schedule - A proposed or recommended sequence of construction, with a schedule listing the anticipated number of working days necessary to accomplish each item in the sequence, shall be included in the plan package. The construction sequence and schedule must be specific to the dam and must cover the following general categories:

6.4.b.1. Sediment control measures;

6.4.b.2. Clearing and grubbing;

6.4.b.3. Road or utility relocations;

6.4.b.4. Development of borrow areas;

6.4.b.5. Placement of coffer dams or diversions;

6.4.b.6. Excavation of foundation areas;

6.4.b.7. Excavation of spillways;

6.4.b.8. Placement of embankment or structural materials;

6.4.b.9. Placement of spillways and appurtenances to spillways;

6.4.b.10. Seeding and mulching of the project area;

6.4.b.11. General cleanup of the project area; and

6.4.b.12. Other information as requested by the ~~director~~ secretary.

6.4.c. Project Specifications - Specifications submitted with the plan package must be specific to construction of the dam or must contain a specific section concerning construction of the dam. Inclusion of specifications for the dam throughout other general construction specifications is not acceptable. Specifications shall be included in the plan package to detail the following:

6.4.c.1. Clearing and grubbing;

6.4.c.2. Soil stockpiles;

6.4.c.3. Subdrain construction;

6.4.c.4. Slopes;

6.4.c.5. Grades;

6.4.c.6. Surface drainage structures such as embankment diversion ditches;

6.4.c.7. Spreading and compaction requirements, including lift thicknesses, moisture content, and degree of compaction;

6.4.c.8. Material and gradation requirements for subsurface drainage structures;

6.4.c.9. Pipes;

6.4.c.10. Concrete, including testing and curing;

6.4.c.11. Anti-seep mechanisms;

6.4.c.12. Cutoff trenches including specific treatment of joints, bedding planes, fractures, weak zones, overhangs or faults;

6.4.c.13. Channel and slope protection (e.g., riprap);

6.4.c.14. Project quality control and testing;

6.4.c.15. Blasting;

6.4.c.16. Construction erosion and sediment control;

6.4.c.17. Construction waste disposal;

6.4.c.18. Dust abatement;

6.4.c.19. Revegetation;

6.4.c.20. Installation and reading of monitoring devices;

6.4.c.21. Inspection and maintenance; and

6.4.c.22. Other information as requested by the ~~director~~ secretary.

6.4.d. Maps and Drawings.

6.4.d.1. Maps shall be included in the plan package showing the project area in relation to primary highways, county seats, and major drainages. County highway maps may be used for this purpose.

6.4.d.2. A map showing the limits of the watershed with respect to the project area shall be included in the plan package. The minimum map scale meeting this requirement is a 7-1/2 minute United States Geological Survey topographic map with the project area plotted on it.

6.4.d.3. A plan view map of the project area that shows all disturbed and reservoir areas shall be included in the plan package showing detailed contour intervals (i.e., a five-foot maximum interval).

6.4.d.3.A. The location of the following items, if present, shall be plotted on the plan view map:

6.4.d.3.A.1. Caves;

6.4.d.3.A.2. Cemeteries and graves;

6.4.d.3.A.3. Seeps;

6.4.d.3.A.4. Springs;

6.4.d.3.A.5. Mine drainage;

6.4.d.3.A.6. Underground mine openings;

6.4.d.3.A.7. Underground mine workings;

6.4.d.3.A.8. Borings and test pits;

6.4.d.3.A.9. Cross-sections;

6.4.d.3.A.10. Project stationing;

6.4.d.3.A.11. Reference points;

6.4.d.3.A.12. Instrumentation;

6.4.d.3.A.13. The subdrain system;

6.4.d.3.A.14. Diversion channels;

6.4.d.3.A.15. Surface water drainage channels;

6.4.d.3.A.16. Spillway channels;

6.4.d.3.A.17. Borrow source areas; and

6.4.d.3.A.18. Proposed waste disposal areas.

6.4.d.3.B. Additional detailed plan views of the dam or its spillways and appurtenances may be required by the ~~director~~ secretary.

6.4.d.4. Transverse and longitudinal cross-sections and profiles of the dam shall be included in the plan package showing original ground, subdrain locations, elevations, benches, spillways, and other pertinent features of the project area. A cross-section shall be provided for stability computations showing the dam at critical areas, with subsurface data plotted in accordance with the provisions of part 7.4.b.1.D.4. of this rule.

6.4.d.5. Cross-sections and profiles of major drainage facilities shall be included in the plan package.

6.4.d.6. Construction drawings shall be included in the plan package showing subdrains, spillways, anti-seep mechanisms, and other pertinent structures.

6.4.e. Inventory of Protected Sites.

6.4.e.1. An inventory of sites protected under State or federal law must be conducted by each applicant seeking a certificate of approval to:

6.4.e.1.A. Construct a new dam; or

6.4.e.1.B. Alter or enlarge an existing dam whereby new areas will be disturbed or flooded.

6.4.e.2. The minimum acceptable protected sites inventory shall include the following components:

6.4.e.2.A. A field survey shall be conducted by the applicant or his or her agents to ascertain the presence of any cave (i.e., a naturally occurring underground subterranean cavity such as a cavern or grotto) within the area to be disturbed or flooded by the project. The location of all caves must then be plotted on the plan view map required underparagraph 6.4.d.3. of this rule. If no caves are present in the area to be disturbed or flooded, that fact must be noted in a statement attached to the plan view map submitted to the ~~director~~ secretary.

6.4.e.2.B. A field survey shall be conducted by the applicant or his or her agents to ascertain the presence of any cemetery or grave within the area to be disturbed or flooded by the project. The location of all cemeteries and graves must then be plotted on the plan view map required underparagraph 6.4.d.3. of this rule. If no cemeteries or graves are present in the area to be disturbed or flooded, that fact must be noted in a statement attached to the plan view map submitted to the ~~director~~ secretary.

6.4.e.2.C. A copy of the plan view map required under subparagraph ~~6.4.4.e~~ 6.4.d.3. of this rule shall be sent by the applicant to the West Virginia Division of Natural Resources, Nongame Wildlife Program, P.O. Box 67, Elkins, West Virginia 26241. A letter of transmittal that briefly explains the nature of the applicant's project must accompany the map so that State officials may have the opportunity to assess whether the applicant's project will adversely impact any animal or plant species that is listed by the federal government as endangered or threatened in Endangered Species Act. [1987 Stat. 884, as amended: 16 U.S.C. 1531 et seq.]. A copy of the applicant's letter of transmittal must be included in the plan package submitted to the ~~director~~ secretary; and

6.4.e.2.D. A copy of the plan view map required under subparagraph 6.4.4.c of this rule shall be sent by the applicant to the West Virginia Division of Culture and History, Historic Preservation Unit, Cultural Center, State Capitol Complex, 1900 Kanawha Boulevard East, Charleston, West Virginia 25305. A letter of transmittal that briefly explains the nature of the applicant's project must accompany the map so that State officials may have the opportunity to assess whether the applicant's project will adversely impact any historic site that is listed by the West Virginia Division of Culture and History on the State Register of Historic Places. A copy of the applicant's letter of transmittal must be included in the plan package submitted to the ~~director~~ secretary.

6.4.e.3. If either artifacts of historical significance or human remains are uncovered by construction or related activities, the Dam Safety Section must be contacted immediately. The ~~director~~ secretary may suspend activities in the vicinity of such artifacts or remains until appropriate investigations have been conducted.

6.4.f. Erosion and Sediment Control - The plan package must include either:

6.4.f.1. A copy of the applicant's letter transmitting a permit application for the WV/NPDES Storm Water Construction General Permit to the ~~Program Management/Technical Support Section, 1201~~

~~Greenbrier Street, Charleston, WV 25311~~ secretary, if the disturbed area within the site will exceed limits necessary for a NPDES permit, or;

6.4.f.2. An erosion and sediment control plan as required in subdivision 7.5.a. of this rule, if the disturbed area within the site is less than the limits necessary for a NPDES permit.

#### **§47-34-7. Design Requirements.**

##### 7.1. Hydrologic Considerations.

##### 7.1.a. General Hydrologic Requirements.

##### 7.1.a.1. Hydrologic Investigation.

7.1.a.1.A. A survey shall be conducted to evaluate soil types, land use, land slope, watershed area, runoff curve number, and any other factors needed to establish watershed characteristics. A summary of all hydrologic and hydraulic data compiled in the initial site investigation and used in the analysis shall be included in table or figure form in the plan package.

7.1.a.1.B. A stream flow analysis shall be conducted to evaluate stream flow quantity and quality as it affects the dam and its appurtenances.

7.1.a.2. Design Storm Requirements - The design storm and any incremental reduction of the design storm proposed by the applicant is subject to approval by the ~~director~~ secretary. All dams shall be designed to meet the following minimum hydrologic criteria based upon hazard classification:

7.1.a.2.A. Class 1 Dams - Class 1 dams shall be designed for the probable maximum precipitation of six (6) hours in duration. The design precipitation for a Class 1 dam may be reduced based on Risk Assessment (subdivision 3.5.d. of this rule), but in no case to less than seventy percent (70%) of the probable maximum precipitation.

7.1.a.2.B. Class 2 Dams - Class 2 dams shall be designed for fifty percent (50%) of a probable maximum precipitation of six (6) hours duration. The design precipitation for a Class 2 dam may be reduced based on Risk Assessment (subdivision 3.5.d. of this rule), but in no case to less than twenty-five percent (25%) of the probable maximum precipitation.

7.1.a.2.C. Class 3 Dams - Class 3 dams shall be designed for twenty-five percent (25%) of a probable maximum precipitation of six (6) hours in duration. The design precipitation for a Class 3 dam may be reduced based on Risk Assessment (subdivision 3.5.d. of this rule), but in no case to less than a P100 rainfall of six (6) hours in duration.

7.1.a.2.D. Class 4 Dams - Class 4 dams shall be designed for a P100 rainfall of six (6) hours in duration.

7.1.a.3. Antecedent Moisture Conditions - Where applicable to the development of a hydrograph, Antecedent Moisture Condition II (AMC II) may be used unless a different condition class is required by the ~~director~~ secretary.

7.1.a.4. Flood Routings - An analysis shall be performed for the reservoir and spillways which includes inflow hydrographs, stage storage curves, stage discharge curves, and routings. The spillways must be able to safely discharge that portion of the design storm that is not stored in the reservoir. If a computer

analysis is used, the input data and output results must be clearly labeled and identified. Trial calculations or intermediate results not relevant to the final results may be omitted from the plan package.

#### 7.1.b. Specific Hydrologic Requirements.

##### 7.1.b.1. Embankment Dams.

##### 7.1.b.1.A. Storage and Discharge.

7.1.b.1.A.1. Class 1 dams designed with either an open channel spillway only or with an emergency spillway and a principal spillway together must be capable of discharging that portion of the design storm that cannot be safely stored in the impoundment. Class 1 dams designed with a decant or principal spillway only must be capable of storing the volume of water generated by a PMP rainfall event of six (6) hours in duration. The design of a Class 1 dam must assure that ninety percent (90%) of the stored volume of the design storm will be discharged within ten (10) days after the storm event.

7.1.b.1.A.2. Class 2 dams must be designed with either an open channel spillway only or a combination of principal and emergency spillways. A Class 2 dam shall be capable of passing that portion of the design storm that cannot be safely stored in the impoundment. The design of a Class 2 dam must assure that ninety percent (90%) of the stored volume of the design storm will be discharged within ten (10) days after the storm event.

7.1.b.1.A.3. Class 3 dams must be designed with either an open channel spillway only or a combination of principal and emergency spillways. A Class 3 dam shall be capable of passing that portion of the design storm that cannot be safely stored in the impoundment. The design of a Class 3 dam must assure that ninety percent (90%) of the stored volume of the design storm will be discharged within ten (10) days after the storm event.

7.1.b.1.B. Surface Drainage Control - Surface drainage control devices (e.g., vegetated slopes, benches, groin ditches, and collection channels) shall be provided as necessary to protect the dam and its appurtenances from the effects of erosion. Riprap or other erosion protection measures shall be included where excessive velocity is anticipated or experienced. All surface drainage control devices must be designed to exit safely beyond the downstream toe of an embankment in a natural drainway capable of carrying the design flow without excessive erosion. The 50-year, 6-hour rainfall event shall be used as the design storm for surface drainage systems.

7.1.b.1.C. Spillway Frequency of Operation - Outlet works that incorporate vegetated earth or unlined earth emergency spillways shall be designed so that the average frequency of operation is no greater than the following recurrence schedule, based upon a 6-hour rainfall event:

7.1.b.1.C.1. Class 1 Dams - Once in one hundred (100) years.

7.1.b.1.C.2. Class 2 Dams - Once in fifty (50) years.

7.1.b.1.C.3. Class 3 and Class 4 Dams - Once in twenty-five (25) years.

7.1.b.1.D. Overtopping Embankments - Regardless of their hazard classification, dams designed to overtop in accordance with the provisions of subparagraph 7.4.b.1.E. of this rule shall not overtop more frequently than once in one hundred (100) years, based upon a 6-hour rainfall event.

7.1.b.2. Gravity Dams - Gravity dams may be designed in the same manner as the corresponding hazard classes of embankment type dams in subparagraph 7.1.b.1.A. of this rule except that designed overtopping of the dam may be substituted for the emergency spillway requirements.

7.1.b.3. Waste Disposal Dams.

7.1.b.3.A. Storage and Discharge - The following storage and discharge systems may be used in design of waste disposal dams:

7.1.b.3.A.1. Open Channel Only or Emergency Spillway with Principal Spillway - A dam designed with either an open channel spillway only or with an emergency spillway and a principal spillway together shall be capable of discharging that portion of the design storm that cannot be safely stored in the impoundment. This type of design must assure that ninety percent (90%) of the stored volume of the design storm will be discharged within ten (10) days after the storm event. Slurry impoundments shall be provided with a means of removing water to maintain the lowest practical water level.

7.1.b.3.A.2. Principal Spillway or Decant Only - A dam designed with a decant or principal spillway only shall be capable of storing the volume equivalent to a minimum of one (1) design storm. Risk assessment shall not be applied to dams with principal spillway or decant only. This type of design must assure that ninety percent (90%) of the stored volume of the design storm will be discharged within ten (10) days after the storm event. Slurry impoundments shall be provided with a means of removing water to maintain the lowest practical water level.

7.1.b.3.A.3. No Outlet Works - A dam designed without discharge structures shall be capable of storing the volume equal to a minimum of two (2) design storms. Risk assessment shall not be applied to dams with no outlet works. Water shall be removed from the impoundment to its lowest practical level by pumping or other means if storm water reduces the storage capacity to one (1) design storm or less.

7.2. Hydraulic Considerations.

7.2.a. General Hydraulic Requirements.

7.2.a.1. Hydraulic Analysis - Using standard engineering practices, a hydraulic analysis shall be performed for the spillways and surface drainage system. Typical cross-section design techniques may be used where constant slopes are encountered. All hydraulic structures shall be designed to safely control the velocity of water in order to prevent excessive erosion. Accepted engineering practices shall be used to design riprap, non-flexible channel linings, bedding, and energy dissipators.

7.2.b. Specific Hydraulic Requirements.

7.2.b.1. Open Channels - Open channels, including open channel spillways, shall be analyzed for flow depth, velocity, nonuniform flow conditions, super-elevation, and hydraulic jumps.

7.2.b.1.A. Stage Discharge - Where an open channel is used as a spillway, a stage discharge rating shall be developed using standard engineering practices for the type and shape of the spillway. In developing the rating, increase in upstream water depth due to change in velocity head must be considered.

7.2.b.1.B. Water Surface Profiles - Where channel slopes or cross-sections vary and nonuniform flow conditions result, a water surface profile may be necessary in order to analyze the channel flow depths and the location of hydraulic jumps.

7.2.b.1.C. Hydraulic Jumps - Where hydraulic jumps will occur, channel sidewall height shall be sufficient to contain the jump. The channel lining shall be designed to withstand the hydraulic jump without damage.

7.2.b.1.D. Critical Flows - Channels shall be designed so that water will not flow at critical depth for extended distances. In channels of varying slope or cross-section where nonuniform flow occurs, the transition through critical flow shall be as rapid as possible.

7.2.b.1.E. Super-elevation - Channel walls shall be designed to contain super-elevated flows in curves. Where curves occur in spillway channels, the ~~director~~ secretary may approve super-elevation wall height based upon one-half of the design flow, but not less than the P100 design flow, provided the excess overflow will impinge on natural ground and will not endanger the dam, human life, or property.

7.2.b.2. Closed Conduit Systems - Closed conduit systems including principal spillways, risers, and pipes shall be analyzed to determine the controlling limits of weir, orifice, and pipe flows.

7.2.b.2.A. Risers and Drop Inlets - Risers shall be protected with a designed trash rack and anti-vortex device. The drop inlet shall be sized to provide a rapid transition from partial to full pipe flow conditions.

7.2.b.2.B. Stage Discharge - When a closed conduit system is used as a principal system, a stage discharge rating shall be developed using standard engineering practices for weir, orifice, and pipe flow calculations.

7.2.b.2.C. Slug Flow - Conduit systems shall be designed to avoid formation of alternating partial and full pipe flow conditions through proper selection of pipe slope and headwater or tailwater conditions.

### 7.3. Geotechnical Considerations.

7.3.a. Geotechnical Investigation - A geotechnical investigation shall be performed. The quantity, location, and depth of borings, test pits, or trenches must be adequate for the evaluation of the bearing capacity and subsurface conditions for the proposed structure and may vary based upon the height, impoundment volume, and hazard classification of the dam. Factors to be considered include depth of soil, characteristics of bedrock, and determination of groundwater location. Results of in-situ testing and soil sampling shall be reported in the plan package. Soil profiles shall be utilized for critical foundation locations of the structure, spillways, and other pertinent locations which affect the safety of the structure. A geological study shall also be conducted to evaluate stratigraphy, landslides, bedrock discontinuities such as soft seams, joints, joint systems, bedding planes, and fault zones which may adversely affect the structure's performance. Past and future mining including thickness of coal seams, depth and type of rock above the coal seam, and previous or expected subsidence problems shall be considered where subsidence may affect the safety of the structure.

7.3.a.1. Project Area Survey - A project area survey shall be conducted to establish baselines and elevations of the dam embankments, reservoir and borrow areas, and appurtenant structures. The survey shall locate all test pits, borings, gas wells, oil wells, water wells, mine openings, landslides, and areas of natural seepage.

7.3.a.2. Borrow Areas - Borrow areas shall be evaluated for appropriate construction materials and required volume. Borrow areas and excavation materials shall be tested to determine the suitability of material for use in embankments or drains.

7.3.b. Laboratory Testing - Laboratory tests shall be conducted on a sufficient number of samples of foundation and embankment materials to provide an accurate representation of soil conditions. Tests shall include, but not be limited to, a complete soil classification including grain size, sieve, hydrometer analysis, Atterberg limits, density, water content, compaction tests, shear strength, consolidation, and permeability where applicable. Compaction and proctor curves shall be developed for all fill materials as appropriate.

7.3.c. Geotechnical Evaluation - A summary of all geotechnical data determined in the initial site geotechnical investigation and used in the analysis shall be included in table or figure form in the plan package.

7.3.c.1. Seepage Analysis - An analysis of seepage and its detrimental effects on structural integrity shall be made. The analysis shall include consideration of potential piping in the embankment, foundations, and abutments. Seepage control measures shall be specified as necessary in order to enhance the stability of the embankment and adjacent area. Drainage systems shall be designed and constructed using a material approved by the ~~director~~ secretary and shall be protected by a properly designed filter zone using standard geotechnical engineering design practices. The design shall specify methods for sealing or controlling seepage encountered in foundation zones during construction.

7.3.c.1.A. Foundation Treatment - If analysis indicates a highly fractured foundation, the engineer shall specify necessary treatment of the foundation zone including, but not limited to, foundation grout curtains, dental concrete treatment of fractures or overhangs, and detailed methods of foundation zone cleaning. Material used in grouts shall be specified in accordance with the provisions of subparagraph 7.4.a.1.B. of this rule.

7.3.c.2. Foundation Stability - The foundation must be designed to have adequate bearing capacity to support the embankment and any appurtenant works. Potential subsidence and settlement and their consequences shall be considered using standard engineering practices. Special attention shall be given to differential settlement which would lead to cracking of the dam. Spillway pipes on compressible foundations shall be protected from damage due to settlement.

7.3.c.3. Landslides - The potential for landslides, as determined in the initial project area investigation, shall be evaluated by the engineer. If landslides noted in the project area could cause instability of the dam or appurtenant structures, blockage of spillways and other critical drainage structures, or overtopping of the dam by displacement of water in the reservoir area, such conditions shall be corrected to a minimum static safety factor of 1.5.

#### 7.4. Structural Considerations.

7.4.a. General Structural Requirements - All structures shall be designed to perform as intended for the design life of the dam with proper maintenance or replacement.

7.4.a.1. Structural Materials - Materials selected for use in the dam shall be of adequate quality and durability for the intended purpose of the structure. All structures shall be designed to have sufficient strength plus an adequate safety factor against failure during maximum anticipated loading conditions.

7.4.a.1.A. Earth Materials - Earth materials selected for use in dam construction shall be free from roots, brush, organic materials, construction waste, and other debris. Where rock or rock fill is specified, the rock shall be durable and not subject to slaking or breakdown. Size gradations of the earth materials shall be specified to perform as planned. Compaction requirements for earth materials shall be specified in the plan package.

7.4.a.1.B. Concrete Design - Concrete shall be designed in accordance with standard engineering practices. Concrete design specifications shall include materials, proportioning, form-work, reinforcement, joints and embedded items, production, placing, repair of surface defects, finishing, curing and protection, testing, evaluation and acceptance, and allowable tolerances for acceptance.

7.4.a.1.B.1. Concrete Specifications - The engineer shall specify the nature of concrete to be used with sufficient detail for on-site quality control. The concrete may be specified by specific mix, aggregate, water content, additives, compressive strength, slump, and air entrainment or by reference to specific standards of concrete quality. If published standard specifications are referenced, a copy of the standard or pertinent sections of the standard shall be included in the plan package.

7.4.a.1.B.2. Concrete Placement - The engineer shall specify methods and limits of placement of the concrete including foundation preparation, maximum lift height, maximum time allowed between mixing and placement, methods of working into forms and corners, methods of consolidation and use of vibrating devices, and allowable ambient air temperatures and concrete temperatures.

7.4.a.1.B.3. Concrete Curing - The engineer shall specify the method of curing the concrete including moist curing or membrane curing, wetting, types of covering, acceptable curing temperature range of the concrete, any anticipated cold weather curing specifications or methods such as protection from freezing and insulation methods, hot weather placement methods and limitations, and curing time.

7.4.a.1.B.4. Concrete Finishing - The engineer shall specify the type of finishing to be applied to the concrete and the acceptable temperature range.

#### 7.4.b. Specific Structural Requirements.

##### 7.4.b.1. Embankment Dams.

7.4.b.1.A. Selection of Materials - Material selected for construction of embankments shall be select earth material that is free from roots, brush, organic matter, construction waste, and other debris. The material must not be subject to breakdown or chemical reaction. Unless otherwise approved by the ~~director~~ secretary, the selected material must be thoroughly tested for density, shear strength, liquid and plastic limits, and optimum moisture content. The source of the material and available quantities shall be identified and adequate sampling performed in order to attain consistent quality and soil characteristics.

7.4.b.1.B. Seepage and Piping Control - The ~~director~~ secretary may require installation of a properly designed filter drain system to prevent embankment failure due to seepage and/or internal erosion on any dam which can cause loss of human life or major damage to dwellings, or commercial or industrial buildings, important public utilities, or where a high risk highway may be affected.

##### 7.4.b.1.C. Zoned Embankments.

7.4.b.1.C.1. Filter Drains - Filter drains shall be used in embankment zones where necessary to intercept seepage, reduce phreatic level, and reduce potential for internal erosion. Drain outlets shall be visible, not submerged under normal conditions, unobstructed, and protected with an animal guard where conduits are utilized.

7.4.b.1.C.1.(a) Gradations - The gradations of the filter material shall be sized to prevent or resist the migration of embankment material into the voids of the filter. The filter shall be permeable relative to the surrounding embankment material.

7.4.b.1.C.1.(b) Size - The filter drain shall be capable of passing the maximum anticipated seepage flows without excessive pore pressure. The combination of filter permeability and area shall be considered in sizing the drain.

7.4.b.1.C.1.(c) Durability - The material used in the filter shall be hard, durable material that is not subject to slaking, breakdown, or chemical reaction.

7.4.b.1.C.1.(d) Conduits - Perforated pipes may be used in the filter drain to increase capacity. Perforations shall be compatible with the filter gradations so that filter material will not enter the pipe. The pipe shall be capable of supporting the fill load and shall be of a material which will last for the design life of the structure. Corrugated metal pipe shall not be used in critical areas of the embankment or in any areas where the pipe is not reasonably accessible for replacement.

7.4.b.1.C.1.(e) Filter Cloth - Filter cloth shall not be used in critical areas of the embankment or in any areas where the cloth is not reasonably accessible for replacement.

7.4.b.1.C.2. Diaphragm Cutoff Walls - When concrete cutoff walls are used as an impermeable barrier, the concrete wall shall be placed upon an adequate foundation and be constructed of reinforced concrete. Where pipes pass through the concrete wall, adequate support for the pipe shall be provided to prevent differential settlement and pipe shearing.

7.4.b.1.D. Embankment Stability -The following stability requirements apply to Class 1 through Class 3 dams. The ~~director~~ secretary may approve lower safety factors for Class 4 dams, based on engineering recommendations.

7.4.b.1.D.1. Embankment Safety Factors - Slope stability shall be analyzed to show that the embankment design achieves the following factors of safety under the conditions listed. Unless otherwise indicated, factors of safety requirements apply to both upstream and downstream slopes of the embankment:

7.4.b.1.D.1.(a) A safety factor of 1.5 for the embankment loading conditions specified in part 7.4.b.1.D.3. of this rule;

7.4.b.1.D.1.(b) An end of construction safety factor of 1.3;

7.4.b.1.D.1.(c) An upstream slope rapid drawdown safety factor of 1.2; and

7.4.b.1.D.1.(d) An earthquake safety factor under steady-state seepage conditions of 1.2 using seismic loading appropriate to the geological site conditions.

7.4.b.1.D.2. Appurtenance Structural Stability - Embankments constructed as part of an appurtenant structure where failure will lead to a dangerous condition in the dam shall achieve a static safety factor of 1.5.

7.4.b.1.D.3. Embankment Loading Conditions - Loading conditions shall assume a long-term steady-state condition with the phreatic surface originating at the elevation of the emergency spillway crest for embankment dams with emergency spillways or at a maximum design pool elevation for embankment dams without spillways.

7.4.b.1.D.4. Stability Analyses - All slope stability analyses shall be performed using standard engineering practices. Exceptions to this requirement will be allowed by the ~~director~~ secretary only where there is sufficient evidence to indicate that slope failures will not occur.

7.4.b.1.D.4.(a) Critical cross-sections of the dam using equal X and Y axes scales shall be provided in the plan package. The cross-sections shall show the embankment limits, foundation zones, soil zones, phreatic line, assumed reservoir elevation, stability arcs or failure planes through the dam, and resulting safety factors for each critical arc or failure plane shown.

7.4.b.1.D.4.(b) A listing of soil zone unit weights, angles of internal friction, and cohesion values for each soil shown on the cross-section shall be provided in the plan package. If an alternative analysis is utilized, assumed soil values of the analysis shall be shown.

7.4.b.1.E. Overtopping Embankments.

7.4.b.1.E.1. Rock-Covered Embankments - Rock -covered embankments shall be designed so that the rocks selected will be sized to withstand the maximum depth and velocity of the overtopping flow and be individually placed to maximize the interlocking effect. A minimum of two (2) layers of boulders is required. Boulders shall cover the crest, downstream face, and necessary areas of the upstream face of the dam and extend beyond the dam abutments to the extent necessary to contain the overtopping flow depth. Graded smaller rock shall fill the voids where the boulders contact the embankment to prevent erosion due to flow through the voids. The rock cover may be covered with soil and vegetated, provided that the equipment used to place the soil will not break the rock.

7.4.b.1.E.2. Roller-Compacted Concrete Embankments. Roller-compacted concrete lift thickness and width shall be sized to withstand the maximum anticipated loading and uplift forces. Filter drains and weep holes shall be provided to relieve hydrostatic pressure behind roller-compacted concrete facings. The roller-compacted concrete may be covered with soil and vegetated.

7.4.b.2. Gravity Dams. The following stability requirements apply to Class 1 through Class 3 Dams. The ~~director~~ secretary may approve lower safety factors for Class 4 dams, based on engineering recommendations.

7.4.b.2.A. Stability Loading Conditions - Loading conditions for the stability analysis shall assume maximum overflow head from the design storm.

7.4.b.2.B. Gravity Dam Stability.

7.4.b.2.B.1. Overturning - The reaction of all forces must act within the middle one-third of the base. This requirement may be modified by the ~~director~~ secretary if detailed computations prove that overturning will not occur.

7.4.b.2.B.2. Sliding - The dam shall have a factor of safety against sliding of at least 3.0 for normal loading conditions and 1.5 for maximum loading conditions. The sliding factor of safety may be reduced to no less than 2.0 for normal loading conditions where intimate knowledge of subsurface conditions has resulted from a state-of-the-art subsurface investigation, testing program and design analysis. The subsurface investigation and testing necessary to reduce the factor of safety should include, but not be limited to: sampling and testing of weak zones such as discontinuities, joints, joint fill material, fracture zones, bedding planes, and faults and; determination of peak, ultimate and residual strengths of foundation materials. Design analyses should include, but not be limited to: three dimensional analyses of foundation strength

resulting from the subsurface investigation. The adequacy of subsurface investigations, testing, and design analyses necessary to reduce the factor of safety is subject to approval by the ~~director~~ secretary.

7.4.b.2.B.3. Bearing - The factor of safety against bearing failure shall be at least 1.5 for maximum stress at the downstream toe.

7.4.b.3. Waste Disposal Dams - The potential for liquefaction must be considered and the design shall include safeguards against the development of this condition.

7.4.b.4. Spillways - All spillways shall be designed to discharge an adequate distance beyond the downstream toe of the dam in a natural drainway to prevent erosion of the downstream toe or other detrimental effects to the dam structure.

7.4.b.4.A. Conduit Spillways - Inlets shall be protected by a designed trash rack and riser type spillways shall be designed to prevent detrimental vortexing. Risers shall have adequate weight to be non-buoyant and shall be of sufficient strength to withstand maximum dynamic water and ice forces. Foundations for risers shall be designed to support the riser without serious movement or deformation.

7.4.b.4.A.1. Conduits - Pipe conduits shall be placed on a designed foundation and bedding of sufficient strength to minimize settlement and other detrimental effects to the conduit. Anti-seep or anti-piping mechanisms shall be provided for all conduits passing through the dam, foundation, or abutments to control seepage along the pipe. Design allowances shall be made to compensate for differential settlement, elongation, and movement of the pipe conduit if the cradle is placed on a yielding foundation. Pipe conduits shall be of sufficient strength to support the maximum external loads and the maximum internal hydraulic pressure without leaking, and shall resist uplift pressures. The pipe conduit shall be constructed of material which will not deteriorate during the design life of the structure.

7.4.b.4.A.1.(a) Use of Corrugated Metal Pipes - Corrugated metal pipes, whether coated or uncoated, shall not be used in new Class 2 or new Class 1 dams. Corrugated metal pipes in existing dams must be either replaced with new pipe or retrofitted with an appropriate liner if the ~~director~~ secretary determines that the existing pipe constitutes a hazard to the proper operation of the dam because the pipe has developed leaks, has deteriorated, or has otherwise ceased to function properly.

7.4.b.4.A.2. Outlets - Pipe conduits shall be designed to outlet in a natural drainway or a designed channel leading to a natural drainway. An energy dissipator shall be provided to eliminate erosion at the pipe outlet and be designed for maximum pipe flow. If pipe blockage by animals may occur, the pipe outlet shall be protected by an animal guard.

7.4.b.4.A.3. Gated Drain Pipe Required for New Freshwater Dams - All new freshwater dams shall have a gated drainpipe for draining the impoundment. The gate or valve shall be located in the reservoir or in the saturated zone upstream of the cutoff wall or impermeable barrier. If the gate is located within the embankment or structure, a service well shall be provided. The elevation of the gate system shall be such that the reservoir will be drained completely to original stream level. The drain system shall be designed to drain ninety percent (90%) of the volume of stored water at normal pool in ten (10) days including normal base flow and have a minimum capacity of three (3) times the normal base flow for the watershed with a headwater-to-diameter (HW/D) ratio of 1.5, unless otherwise approved by the ~~director~~ secretary. The drain conduit shall meet the requirements for conduits set forth in part 7.4.b.4.A.1. of this rule. A designed trash rack shall be provided at the inlet of the drain. The controls to operate the drain gate shall be accessible without the use of specialized equipment or of divers. The drawdown rate for reservoir storage volumes in excess of two thousand (2000) acre-feet may be established by the ~~director~~ secretary.

7.4.b.4.A.4. Existing Dams with Gated Drain Pipes - All existing dams currently equipped with a gated drain pipe must meet the design requirements of part 7.4.b.4.A.3. of this rule and continue to be operated and maintained with the gated drain pipe. If such a gate or valve was not previously installed, a gate or valve shall be installed in the reservoir or in the saturated zone upstream of the cutoff wall or impermeable barrier. The ~~director~~ secretary may approve reduced drawdown time and flow quantity requirements for existing drains. Drain systems not meeting the design requirements of part 7.4.b.4.A.3. of this rule or dams with leaking or inoperative drain systems must be repaired or modified to maintain the greatest practical capacity of the drain system. If installation of the upstream gate or valve is impractical without draining of the reservoir and reservoir drainage will cause major economic loss to the owner, the ~~director~~ secretary may approve delay of the upstream gate or valve installation until the next necessary draining of the reservoir, provided that the existing drain system is functioning properly and is not leaking in a manner that would create a serious problem. If the existing drain system develops a serious problem, the ~~director~~ secretary may order immediate remedial action. The ~~director~~ secretary may grant an exemption to this subpart when investigation of the existing drain system determines to the ~~director's~~ secretary's satisfaction that installation of an upstream drain gate or valve is not feasible.

7.4.b.4.A.5. The term "gate" or "valve" as used in this rule is a general term referring to a device used for controlling water flow.

7.4.b.4.B. Open Spillways - Unless specifically excluded, spillways of this type include the various designs of open type spillways including open channel, side channel, chute, labyrinth, and ogee.

7.4.b.4.B.1. Earth Spillways - Spillways that are constructed of or in earth material shall be designed to pass the maximum design flow without excessive erosion. Earth spillways shall not be constructed over dam embankment fill material.

7.4.b.4.B.1.(a) Flexible Linings - Vegetation, rock riprap, soil reinforcement, or other flexible linings may be used to increase flow quantities and velocities in earth spillways within design limits.

7.4.b.4.B.2. Concrete Spillways.

7.4.b.4.B.2.(a) Concrete - The engineer shall specify the grade and strength of concrete to be used in the spillway construction. The concrete structure shall be of sufficient strength to withstand the maximum design applied load.

7.4.b.4.B.2.(b) Foundation - Concrete shall be placed on a prepared foundation and bedding capable of sustaining the applied loads without excessive deformation.

7.4.b.4.B.2.(c) Drains - Designed filter drains and water pressure relief devices shall be provided under concrete slabs and walls to collect and safely convey water from seepage or leakage of construction joints and to relieve uplift pressure from seepage conditions.

7.4.b.4.B.2.(d) Joints - Construction joints shall be made watertight by use of a sealant material. Sliding joints shall be supported by a slab to maintain alignment.

7.4.b.4.B.2.(e) Cutoff Barriers - Cutoff barriers keyed into the foundation shall be provided to prevent or reduce seepage flow under the spillway.

7.4.b.4.B.2.(f) Energy Dissipators - An energy dissipator shall be provided to reduce the hydraulic energy at the end of the spillway. The dissipator shall be designed to function properly for flows

of at least one-half of the design spillway flow. Flows in excess of the design capacity of the energy dissipator shall not endanger the dam or its appurtenances and may result only in erosion.

7.4.b.4.B.3. Nonstandard Spillway Design - The ~~director~~ secretary may reject any spillway design if such design is of a nonstandard or untested nature and it is not possible to analytically predict the performance of the spillway or the detrimental effects of cross-waves, eddies, vortices, super-elevation, or hydraulic jumps within the spillway system.

7.4.b.5. Water Supply Pipes - Water supply pipes through a dam shall be constructed of a long-life, high-strength material. Welded joints or mechanical joints with sealing rings, or an alternative sealing method approved by the ~~director~~ secretary, shall be utilized. Pipes shall be properly bedded to reduce differential settling or elongation. Anti-seep mechanisms or filter drains shall be provided to prevent piping along the exterior of the pipe. If the pipe is enclosed in or passes through concrete, the relative coefficients of expansion shall be considered. Anti-corrosive measures shall be employed if soil tests indicate corrosion may be a problem. An upstream shutoff valve shall be installed on all new dams or when upgrading existing dams where reservoirs are to be drained as part of the upgrading. The section of the pipe through the dam shall be capable of withstanding a minimum pressure of twice the maximum reservoir head. The pipe shall be pressure-tested for leaks at maximum reservoir head pressure prior to the final covering of the pipe installation.

#### 7.5. Miscellaneous Considerations.

7.5.a. Erosion and Sediment Control - Erosion and sediment control measures sufficient to comply with the provisions of paragraph ~~8.1.13~~ 8.1.m. of this rule shall be included in the project design where the disturbed area within the site is less than ~~three acres~~ NPDES limits. If the disturbed area within the site exceeds ~~three acres~~ NPDES limits, a letter documenting submission of a NPDES permit application must be submitted in accordance with subparagraph ~~6.4.6.a.~~ 6.4.f.1. of this rule.

7.5.b. Waste Disposal Areas - The engineer shall delineate locations in the project area which are to be used as waste disposal areas.

7.5.c. Instrumentation - The engineer shall recommend instrumentation as necessary to monitor and measure performance of new dams or modifications to existing dams. The engineer shall specify the types and purpose of the recommended instrumentation.

7.5.c.1. Piezometers or Observation Wells - Piezometers or observation wells may be required by the ~~director~~ secretary on embankment type dams to monitor phreatic level and water pressures in critical areas of the embankment and, if necessary, the foundation or abutments. All piezometer or well heads shall be anchored in concrete and protected from vandalism with a locking metal cylinder surrounding the piezometer or well pipe.

7.5.c.2. Survey Monuments - Survey monuments may be required by the ~~director~~ secretary on embankment and gravity dams to monitor displacement, settlement, rotation, and deformation. Survey monuments on earth dams shall be sufficiently embedded into the structure to prevent localized movement of the monument. Protective casings shall be installed if necessary to prevent damage or forced movement of the survey point.

7.5.d. Staged Construction - Waste disposal dams designed in stages of construction shall be capable of storing or passing the design storm specified in paragraph 7.1.a.2. and subparagraph 7.1.b.1.A. of this rule during all stages of construction except during the initial start-up period, unless otherwise approved by the ~~director~~ secretary. During the initial start-up period, the dam shall be capable of storing or passing the P100

rainfall event as soon as possible. Construction shall increase storm capacity, reaching the full design storm capacity within two (2) years.

#### **§47-34-8. Construction or Modification of a Dam.**

##### 8.1. Construction Requirements.

8.1.a. Notification of the Commencement of Construction - Prior to the commencement of construction activities in the project area, the person who has been issued a certificate of approval, or his or her representative, shall notify the ~~director~~ secretary of the following:

8.1.a.1. The intent of the contractor to start construction in the project area and the date of such start-up.

8.1.a.2. The name, address, and telephone number of the owner's authorized contact person at the project area who is responsible for communicating with the Dam Safety Section and for receiving inspections reports and legal notifications.

8.1.b. Conformance with Plans - All work undertaken in the construction or modification of a dam shall be in strict conformance with the plans and specifications contained in the plan package submitted under subsection 5.1 of this rule and approved by the ~~director~~ secretary. Any changes to the approved plans and specifications shall be submitted to and approved by the ~~director~~ secretary prior to implementation.

8.1.c. On-Site Documents - A copy of the certificate of approval, the approved plans and specifications, all outstanding notices to comply or orders to comply that have been issued by the ~~director~~ secretary, and the monitoring and emergency action plans prepared in accordance with the provisions of subsection 15.6 and subsection 15.7 of this rule shall be available at the project area office for reference by construction personnel and the ~~director~~ secretary.

8.1.d. Adverse Weather Conditions - Construction work shall be suspended on all or part of the project when adverse weather conditions (e.g., prolonged precipitation, extreme temperatures) jeopardize the performance of work in conformance with the approved plan package.

8.1.e. Clearing and Grubbing - Clearing and grubbing shall be performed in the foundation, borrow, and soil stockpile areas. Clearing is required in the maximum permanent pool area unless otherwise approved by the ~~director~~ secretary.

8.1.f. Foundation Preparation - Foundation preparation shall include installation of keyways and subdrains, removal of soft areas, and similar project area preparation operations dictated by the approved plans and specifications and by project area conditions. The foundation shall be inspected by the ~~director~~ secretary prior to placement of embankment materials. If foundation problems are discovered during this inspection, additional foundation preparation may be required by the ~~director~~ secretary.

##### 8.1.g. Placement of Materials.

8.1.g.1. All fill shall be placed in accordance with the approved plans and specifications.

8.1.g.2. Compaction testing shall be completed as specified in the approved specifications; the results of such testing shall be reported in accordance with the provisions of subdivision 8.4.a. of this rule.

8.1.g.3. Filter drains shall be constructed in accordance with the approved plans and specifications. Filter material shall be tested for compliance with design gradations; the results of such testing shall be reported in accordance with the provisions of subdivision 8.4.a. of this rule. Filter materials shall be

placed to prevent segregation and contamination and shall be concurrently covered to prevent contamination or damage.

8.1.h. Grading.

8.1.h.1. All fill shall be graded in accordance with the approved plans and specifications.

8.1.h.2. The working surface and outslopes of the fill shall be concurrently graded through all phases of embankment construction.

8.1.h.3. The top of the fill shall be crowned to provide positive drainage during construction.

8.1.h.4. Final grading shall be conducted in order to facilitate revegetation.

8.1.i. Spillways and Appurtenances.

8.1.i.1. Spillways and appurtenances shall be constructed in accordance with the approved plans and specifications.

8.1.i.2. When downslope placement of fill material is used in the construction of spillways, the fill material shall be compacted in horizontal layers to achieve the design configuration.

8.1.i.3. All riprap material shall be of hard, durable rock which is not acid-forming or toxic. Riprap shall be placed to prevent size segregation.

8.1.i.4. When bedding is used under riprap, the rock material shall be placed in a manner so as not to damage or contaminate the bedding.

8.1.i.5. When protective channel linings are specified, the linings shall be installed as soon as the channel is constructed to grade in accordance with the approved plans and specifications.

8.1.i.6. When concrete is used in construction of spillways and appurtenances, the concrete shall be placed, cured, and finished in accordance with the provisions of part 7.4.a.1.B.2. through part 7.4.a.1.B.4. of this rule. Standard engineering tests shall be performed in accordance with the provisions of paragraph 8.2.b.1. of this rule and reported in accordance with the provisions of subdivision 8.4.a. of this rule.

8.1.i.7. All pipes, risers, and appurtenances shall be installed in accordance with the approved plans and specifications. Compaction testing shall be completed to ascertain that fill material around pipes, risers, and appurtenances has been placed in accordance with the approved plans and specifications; the results of such testing shall be reported in accordance with the provisions of subdivision 8.4.a. of this rule. Sufficient fill shall be placed over pipes so as to prevent damage by heavy equipment.

8.1.j. Minimum Stream Flow - An adequate flow of water may be required by the ~~director~~ secretary in the stream below the dam during construction and reservoir filling to maintain water quality in the stream and to support fish and other aquatic life. The ~~director~~ secretary may require stream flow augmentation in accordance with the provisions of subdivision 15.3.b. of this rule.

8.1.k. Blasting - Blasting may only be utilized in accordance with and as specified in the approved plans and specifications. Blasting based upon unforeseen project area conditions not covered in the approved plan package shall not be performed prior to approval by the engineer with the concurrence of the ~~director~~ secretary.

8.1.l. Storm Water Discharge - The sequence of construction work shall be planned to maximize the safe discharge of storm water while minimizing the amount of water retained in the impoundment. Either the principal spillway structures, including inlets and outlets, shall be operable prior to placement of construction material above the original valley elevation or diversion channels approved by the ~~director~~ secretary shall be in place.

8.1.m. Erosion and Sediment Control.

8.1.m.1. General Requirements - Erosion and sedimentation must be controlled to prevent a degradation of land and streams below the dam or project area, including visible deposits of sediment, and to prevent any violation of State water quality standards. Erosion and sediment control measures shall, at the minimum, conform with current erosion and sediment control reference manuals and apply to the entire project area.

8.1.m.2. Specific Requirements - Cleared areas, borrow areas, disturbed areas along stream channels and waterways, and fills, whether complete or in progress, must be equipped with erosion and sediment control devices (i.e., diversions, waterways, sediment basins, straw bale dikes, or silt fences).

8.1.m.2.A. Location of Sediment Control Devices - Erosion and sediment control devices must be located as close to the disturbed area as practical. Effort must be made to contain the sediment load within the disturbed area in order to prevent the entry of sediments into the natural drainway or stream.

8.1.m.2.B. Removal of Sediment Control Devices - Erosion and sediment control devices must remain in place until permanent vegetation is established or the area is otherwise stabilized. Prior to the removal of the devices, trapped sediment must be removed and placed in a location approved by the ~~director~~ secretary. Straw bale dikes and silt fences must be removed when no longer needed; sediment basins or ponds must be abandoned in a manner approved by the ~~director~~ secretary. Barren and denuded areas remaining after the removal of a control device must be revegetated.

8.1.m.2.B.1. The ~~director~~ secretary may modify or waive the requirements of subparagraph 8.1.m.2.B. of this rule for erosion and sediment control devices that are located within the impoundment area of the dam.

8.1.m.2.C. Cleaning Frequency - Sediment control diversions, silt fences, straw bale dikes, and waterways must be inspected once each week, and after each rainfall, and accumulated sediment must be removed in order to maintain design capacity. Sediment ponds, basins, and traps must be restored to design capacity when sediment accumulation approaches sixty percent (60%) of design capacity, or more frequently if so specified by the ~~director~~ secretary in writing.

8.1.m.2.D. Temporary Seeding and Mulching - Temporary seeding and mulching shall be utilized on bare areas where no construction activity is anticipated for a period of three (3) or more weeks. Areas that shall receive seeding and mulching include the reservoir area, borrow areas, soil stock piles, and steep fill slopes where no further work is planned prior to final grading. Where seeding is not feasible due to severe slope or time of year, the ~~director~~ secretary may approve mulching alone at a rate of three (3) tons of straw or hay per acre, or equivalent.

8.1.m.2.E. Water Routing - Water that is pumped or drained from work areas (e.g., excavations, foundations, and below grade fills) must be routed to properly-sized sediment control devices so that any sediment contained in the water is removed prior to discharge of the water from the project area. Pump discharges may not cause erosion or suspension of additional solids. No untreated water may be pumped or drained to the natural stream or stream diversion channel.

8.1.m.2.F. In-Stream Treatment - Barriers, such as silt fences or straw bales, located in the natural drainway or stream will not be considered acceptable as the primary means of sediment control for the project area. Properly designed sediment basins or ponds may be used for sediment control in the natural drainway or stream if the location of the basin or pond does not cause significant additional disturbance in undisturbed downstream areas. Use of a starter dike or the dam under construction may be considered appropriate for sediment control of the reservoir area provided the necessary detention time is achieved.

8.1.m.2.G. Sediment Control During Construction - Erosion and sediment control measures must be in place prior to the beginning of dam construction activities. Clearing and grubbing or sediment control measures not specified for the beginning of construction must be implemented in a timely manner as needed.

8.1.m.2.H. Permanent Erosion Measures - Permanent measures (e.g., vegetation, grading, diversions, waterways, and outlet structures) shall be included on all completed or existing dams, where applicable, to prevent the erosion of embankments, abutments, stream channels, and waterways during the life and operation of the dam.

#### 8.1.n. Disposal of Construction Wastes.

8.1.n.1. General Disposal Requirements - All waste materials that result from construction activities shall be disposed of in a manner approved by the ~~director~~ secretary.

#### 8.1.n.2. Specific Disposal Requirements.

8.1.n.2.A. Surplus Waste Materials - Surplus soil and rock materials shall be deposited in waste disposal areas delineated in the approved plans.

8.1.n.2.B. Organic Waste Materials - Trees, brush, root masses, and construction-related wood materials may be either buried in waste disposal areas delineated in the approved plan package or burned in accordance with local and State burning ordinances

8.1.n.2.C. Concrete Waste Materials - New or old waste concrete materials may be disposed of in areas approved by the ~~director~~ secretary for surplus soil and rock materials. New, unset waste concrete shall not be deposited in a location where it will enter watercourses, either directly or indirectly as a result of runoff. After it has set, the new waste concrete may be moved to waste disposal areas delineated in the approved plans.

8.1.n.2.D. Other Waste Materials - Chemicals, petroleum products, plastics, garbage, sewage, and any associated containers shall be disposed of in a manner approved by the ~~director~~ secretary.

8.1.n.2.E. Off-Site Waste Materials - No waste materials or soil waste may be transported to the project area for disposal.

8.1.o. Dust Abatement - The contractor shall fully suppress dust on haul and access roads and as necessary within the project area. Water, or an alternative dust palliative approved by the ~~director~~ secretary, shall be used for dust suppression; the use of oil or waste oil is prohibited.

8.1.p. Access Roads - A permanent access road shall be provided to each dam site. The road must be adequate for emergency vehicular traffic. Single lane unpaved roads are acceptable provided the roads are properly maintained. The access road must be designed and located as to not be unduly affected by stream or

spillway flows during heavy rainfall events. The road may be secured with a locked gate provided that the key is available to dam monitors and State and local emergency personnel for emergency response.

## 8.2. Quality Control.

### 8.2.a. Construction Monitoring.

8.2.a.1. All construction activities shall be monitored by an engineer or his or her designated representative. Construction monitoring shall not be the responsibility of the construction contractor unless specifically approved by the ~~director~~ secretary in writing .

8.2.a.2. Responsibility for assessing the quality of the workmanship and ascertaining compliance with the approved plans and specifications shall be vested primarily in the owner's engineer. The Dam Safety Section shall also monitor construction activities and workmanship in order to ascertain compliance with the approved plans and specifications, in accordance with the provisions of W. Va. Code §22-14-9.

8.2.a.3. Critical phases of construction shall be monitored by the engineer or his or her designated representative constantly during active construction; noncritical phases of construction shall be checked at least once per day during active construction.

8.2.a.4. Additional supervision or testing will be required by the ~~director~~ secretary if evidence of inadequate construction supervision exists.

8.2.b. Materials Testing - Construction materials shall be periodically tested on-site to ascertain compliance with design specifications in the approved plan package. Final quality control testing shall not be the responsibility of the construction contractor.

8.2.b.1. Concrete Testing - Routine tests of slump, air entrainment, and temperature shall be performed on each truck delivery. Cylinder samples for compression testing shall be taken each day or every twenty-five (25) cubic yards of delivered concrete, whichever is more frequent, unless otherwise required by the ~~director~~ secretary.

8.2.b.2. Earth Fill Testing - Earth fill materials shall be tested for compaction and moisture content every alternate layer or each one thousand (1,000) cubic yards, whichever is more frequent. Random fill shall be evaluated for compliance with approved gradation specifications. Critical fill areas shall have gradation tests performed to evaluate compliance with the approved specifications.

8.2.b.3. Filter Materials Testing - Gradation tests shall be performed on filter materials. Close visual observation for signs of material segregation shall be performed. Additional tests may be required by the ~~director~~ secretary to determine durability and soundness of the filter material.

## 8.3. Construction Inspections.

### 8.3.a. Inspections During Construction.

8.3.a.1. A visual inspection for construction progress, unstable conditions, quality control, and conformance with the approved plans and specifications shall be held at least once each working day (or more frequently as determined by the engineer). The inspection shall be performed by an engineer or a person under the direct supervision of the engineer. The frequency of inspection may be changed by the ~~director~~ secretary depending upon specific project area conditions.

8.3.a.2. Additional inspections shall be held after each heavy rainfall event in order to detect problems and propose remedial measures. These inspections shall be performed by an engineer or a person under the direct supervision of the engineer.

8.3.a.3. Instrumentation shall be monitored every seven (7) days unless otherwise specified by the engineer. Monitoring shall be performed by an engineer or a person under the direct supervision of the engineer. The frequency of monitoring may be changed by the ~~director~~ secretary depending upon specific project area conditions.

8.3.b. Final Construction Inspection - Upon the completion of the construction or modification of a dam, a joint inspection shall be conducted by the ~~director~~ secretary and the engineer. The purpose of the inspection is to verify that all work has been accomplished in accordance with the approved plan package.

8.3.c. Acceptance of Construction - When the dam owner is advised by the ~~director~~ secretary that the construction appears satisfactory, the owner shall submit to the ~~director~~ secretary a certification by an engineer that all construction was in substantial conformance with the approved plans and specifications, including any modifications that have been approved by the ~~director~~ secretary. This certification shall be submitted within ninety (90) days of the ~~director's~~ secretary's advisement. As-built drawings, including all variations from the original specifications and changes in location of borrow or waste disposal areas, shall be submitted with the engineer's certification. If substantial modifications of the original specifications have been made during the construction period, the ~~director~~ secretary may require that a corrected application form be submitted. Upon the receipt of the engineer's certification with the as-built drawings (and a corrected application form, if necessary), a letter of acceptance will be issued by the ~~director~~ secretary.

8.3.d. Completed Dams - After acceptance of construction by the ~~director~~ secretary, the dam and its appurtenances shall be inspected annually for a period of three (3) years by an engineer experienced in such inspections. The ~~director~~ secretary reserves the right to attend any inspection and require prior notification of the inspection by the owner of the dam. A report of each inspection shall be prepared and filed with the ~~director~~ secretary in accordance with the provisions of subdivision 15.5.a. of this rule.

#### 8.4. Construction Reporting Requirements.

8.4.a. Monthly Progress Reports During Construction - A written report containing the results of each inspection of construction progress shall be submitted to the ~~director~~ secretary every month while the dam and its appurtenances are under construction. The report shall include, but not be limited to, specific instrumentation readings, test results, freeboard, crest elevation, and specific construction or quality control problems with documentation of implemented solutions. Upon the completion of the construction or modification of the dam, notice shall be given by the dam owner to the ~~director~~ secretary so that a final construction inspection can be made in accordance with the provisions of subdivision 8.3.b. of this rule.

8.4.b. Post-Construction Inspection Reports - A report shall be submitted to the ~~director~~ secretary by the dam owner reporting the findings of the final construction inspection required under subdivision 8.3.b. of this rule. Certification by an engineer shall be submitted to the ~~director~~ secretary with the inspection report to verify that the dam and its appurtenances were constructed in substantial conformance with the approved plans and specifications and that the dam and its appurtenances are functioning as designed.

#### §47-34-9. Breaching of a Dam.

9.1. Application to Breach a Dam - The owner of a dam must obtain a certificate of approval from the ~~director~~ secretary prior to the breaching of the dam. A complete application in accordance with the provisions

of subsection 5.1 of this rule must be submitted to and approved by the ~~director~~ secretary prior to the commencement of breaching activities.

9.1.a. Plan Package Requirements - The plan package submitted in order to breach a dam shall be in accordance with the applicable requirements of Section 6 of this rule and must also include the specific requirements delineated in subsection 9.2 through subsection 9.10 of this rule. Narratives, plans, or specifications required under Section 6 of this rule which are clearly not applicable to the proposed breaching activities may be omitted from the submittal; however, the ~~director~~ secretary reserves the right to specify those items which must be included in the breaching plan package.

9.2. Breach Dimensions - The breach opening in the dam shall be designed so that any water resulting from design storm inflows that is temporarily impounded behind the residual structure shall be less than the height and storage requirements of a "dam" set forth in subsection ~~2.10~~ 2.12 of this rule. The breach shall be to original stream bottom level, except that a small impoundment of less than one (1) acre-foot storage may be retained for sediment control purposes.

9.3. Breach Channel - The embankment shall be breached with a designed channel having the capacity to carry the peak runoff from the design storm corresponding to the dam's hazard classification. The channel created by the breach shall have an erosion-preventive lining adequate to withstand the depth and velocity of the peak flows from a P100 rainfall event. The channel side slopes shall achieve a minimum stability factor of safety of 1.5.

9.4. Safety - Reservoirs shall be completely drained before breaching operations begin. Breaching work shall be scheduled during dry weather using National Weather Service advice and proceed quickly to reduce the potential for impounding water.

9.5. Blasting - If blasting is to be used in the breaching of a dam, a blasting plan shall be submitted to the ~~director~~ secretary for approval. The plan shall include the distance to existing structures and the measures that will be taken to minimize air blast and flying materials. A pre-blast survey of existing nearby structures and water wells which may be affected by blasting may be required by the ~~director~~ secretary.

9.6. Erosion and Sediment Control - Erosion and sediment control measures sufficient to comply with the provisions of paragraph ~~8.1.13~~ 8.1.m of this rule shall be implemented during the breaching operation. The following measures shall also be implemented:

9.6.a. Reservoir areas, and the sediment deposits therein, shall be protected from erosion after the impounding capability has been eliminated by the breaching of the dam;

9.6.b. Silt deposits and barren areas in the reservoir shall be stabilized and revegetated;

9.6.c. Disturbed areas, including the faces on any remaining embankment, must be protected by vegetation or other means approved by the ~~director~~ secretary;

9.6.d. A channel in the reservoir sediment may be required by the ~~director~~ secretary in order to reestablish a stream channel; and

9.6.e. Permanent sediment basins, subject to ongoing maintenance, may be required by the ~~director~~ secretary if the dam owner cannot demonstrate the effectiveness of other structural and vegetative measures in stabilizing the reservoir area and dam site.

9.7. Placement of Earthen Material - Material removed from the dam shall be placed in waste disposal areas delineated in the approved plan package. The material shall be graded and compacted as necessary and stabilized from erosion by vegetation or other means approved by the ~~director~~ secretary.

9.8. Placement of Non-Earthen Material - Concrete rubble and other rock material shall be placed in waste disposal areas delineated in the approved plan package. The material shall be placed in a manner to reduce hazardous conditions; protruding metal, wire, or bars are prohibited. The requirements of subdivision 8.1.n. of this rule shall apply to the disposal of any other waste materials generated by the breaching operation.

9.9. Galleries and Drains - The effect of flows through the breach and backwater pressure on galleries and drains shall be evaluated. The galleries and drains shall be vented or sealed as necessary to prevent failure of the remaining structure.

9.10. Safety of Remaining Structure - The remaining structure shall have sufficient strength to support the maximum hydraulic loading without failure. The engineer shall attempt to reduce or eliminate hazards associated with an "attractive nuisance."

9.11. Construction Practices - The requirements of Section 8 of this rule shall apply when breaching a dam unless clearly not applicable to the breaching operation; however, the ~~director~~ secretary reserves the right to specify which requirements are applicable.

#### **§47-34-10. Removal of a Dam.**

10.1. Application to Remove a Dam - The owner of a dam must obtain a certificate of approval from the ~~director~~ secretary prior to the removal of the dam. A complete application in accordance with the provisions of subsection 5.1 of this rule must be submitted to and approved by the ~~director~~ secretary prior to the commencement of removal activities.

10.1.a. Plan Package Requirements - The plan package submitted in order to remove a dam shall be in accordance with the applicable requirements of Section 6 of this rule and must also include the specific requirements delineated in subsection 10.2 through subsection 10.8 of this rule. Narratives, plans, or specifications required under Section 6 of this rule which are clearly not applicable to the proposed removal activities may be omitted from the submittal; however, the ~~director~~ secretary reserves the right to specify those items which must be included in the removal plan package.

10.2. Removal Requirements - Removal of a dam shall consist of the complete removal of the structure to the original ground except in special cases where it may be necessary or advantageous to leave small sections of the structure. Unless otherwise approved by the ~~director~~ secretary, the removal of a dam shall consist of complete removal of the structure to approximate original contour. A total of no more than ten percent (10%) of the length of the structure may remain at the abutment areas.

10.3. Safety - Reservoirs shall be completely drained before removal operations begin. Removal work shall be scheduled during dry weather using National Weather Service advice and proceed quickly to reduce the potential for impounding water.

10.4. Blasting - If blasting is to be used in the removal of a dam, a blasting plan shall be submitted to the ~~director~~ secretary for approval. The plan shall include distance to existing structures and the measures that will be taken to minimize air blast and flying materials. A pre-blast survey of existing nearby structures and water wells which may be affected by blasting may be necessary.

10.5. Erosion and Sediment Control - Erosion and sediment control measures sufficient to comply with the provisions of subdivision 8.1.m. of this rule shall be implemented during the removal operation. The following measures shall also be implemented:

10.5.a. Reservoir areas, and the sediment deposits therein, shall be protected from erosion after the impounding capability has been eliminated by the removal of the dam;

10.5.b. Silt deposits and barren areas in the reservoir shall be stabilized and revegetated;

10.5.c. Disturbed areas, including the faces on any remaining embankment, must be protected by vegetation or other means approved by the ~~director~~ secretary;

10.5.d. A channel in the reservoir sediment may be required by the ~~director~~ secretary in order to reestablish a stream channel; and

10.5.e. Permanent sediment basins, subject to ongoing maintenance, may be required by the ~~director~~ secretary if the dam owner cannot demonstrate the effectiveness of other structural and vegetative measures in stabilizing the reservoir area and dam site.

10.6. Placement of Earthen Material - Material removed from the dam shall be placed in waste disposal areas delineated in the approved plan package. The material shall be graded and compacted as necessary and stabilized from erosion by vegetation or other means approved by the ~~director~~ secretary.

10.7. Placement of Non-Earthen Material - Concrete rubble and other rock material shall be placed in waste disposal areas delineated in the approved plan package. The material shall be placed in a manner to reduce hazardous conditions; protruding metal, wire, or bars are prohibited. The requirements of subdivision 8.1.n. of this rule shall apply to the disposal of any other waste materials generated by the removal operation.

10.8. Safety of Remaining Structure - If any portion of the structure remains, that portion shall have sufficient strength to support the maximum hydraulic loading without failure. The engineer shall attempt to reduce or eliminate hazards associated with an "attractive nuisance."

10.9. Construction Practices - The requirements of Section 8 of this rule shall apply when removing a dam unless clearly not applicable to the removal operation; however, the ~~director~~ secretary reserves the right to specify which requirements are applicable.

**§47-34-11. Abandonment of a Dam.**

11.1. Application to Abandon a Dam - The owner of a dam must obtain a certificate of approval from the ~~director~~ secretary prior to the abandonment of the dam. A complete application in accordance with the provisions of subsection 5.1 of this rule must be submitted to and approved by the ~~director~~ secretary prior to the commencement of abandonment activities.

11.2. Reservoir Elimination - The reservoir area shall be completely filled to the crest elevation of the dam with approved material to eliminate the impoundment of water. The maximum impounding capacity upon completion of final grading shall not exceed one (1) acre-foot of impounding capacity. The final top elevation of the reservoir fill shall be higher than, and sloped into, the diversion system required under subsection 11.4 of this rule.

11.3. Embankment Stability - The remaining embankment shall be shown to achieve a minimum factor of safety in accordance with the provisions of subparagraph 7.4.b.1.D. of this rule.

11.4. Diversion System - A diversion system designed for a P100 rainfall event shall be provided to capture the stream at the upstream end of the reservoir and convey stream water and embankment runoff water around the site. The diversion system shall outlet safely beyond the downstream toe of the embankment in a natural drainway capable of carrying the design storm without excessive erosion. The ~~director~~ secretary may require the installation of an energy dissipator in accordance with the provisions of subpart 7.4.b.4.B.2.(f) of this rule.

11.5. Sealing Conduits - All conduits through the embankment, with the exception of underdrain conduits, shall be sealed with concrete at the upstream end prior to elimination of the reservoir. The ~~director~~ secretary may require pressure testing of conduits to determine seal adequacy.

11.6. Erosion and Sediment Control - Erosion and sediment control measures sufficient to comply with the provisions of subdivision 8.1.m. of this rule shall be implemented during the abandonment operation.

11.7. Soil and Vegetative Cover - A sufficient layer of topsoil shall be provided to permit long-term growth of vegetation. A seeding and mulching mixture shall be proposed in the abandonment application to accomplish revegetation of the project area.

11.8. Retention of Jurisdiction - The ~~director~~ secretary shall retain jurisdiction over the site for a minimum period of five (5) years after abandonment, during which time the dam and its appurtenances shall be inspected annually by an engineer experienced in such inspections. The inspections shall include measurement readings of instrumentation to determine the level and volume of saturation within the reservoir fill material. The ~~director~~ secretary may also require more frequent reading and reporting of instrument readings to determine seasonal fluctuations of saturation. A report shall be filed with the ~~director~~ secretary detailing the findings of each inspection and describing intended maintenance work. Should a major storm occur, a similar report shall be filed to detail the resultant condition of the structure.

11.9. Final Approval of Abandonment - At the completion of the five-year period, a final joint inspection by the engineer and the ~~director~~ secretary shall be conducted to determine the effectiveness of the abandonment design and the potential need for continued maintenance. Should the ~~director~~ secretary determine as a result of this inspection that an additional inspection time period or maintenance work is required, a letter detailing these requirements shall be sent to the owner. The ~~director~~ secretary will review instrument records and annual inspection reports to determine if the saturation level of material within the reservoir has decreased in volume to less than the legal definition of a "dam." Should the ~~director~~ secretary determine as a result of the inspection and review of instrumentation records that the volume of saturated material is less than the legal definition of a "dam" and the abandonment design has been effective, a letter of acceptance shall be issued stating that the dam has been properly abandoned.

#### **§47-34-12. Reduction or Enlargement of a Dam.**

##### 12.1. Reduction of Dam Height To Less Than Jurisdiction.

12.1.a. A person planning to reduce the height of a dam so that the remaining structure will no longer meet the definition of "dam" set forth in subsection ~~2.10~~ 2.12 of this rule must obtain a certificate of approval from the ~~director~~ secretary.

12.1.b. A complete application in accordance with the provisions of subsection 5.1 of this rule must be submitted to and approved by the ~~director~~ secretary prior to the commencement of reduction activities. The application must also contain information showing that the remaining impounding structure will not cause loss of life or appreciable property damage downstream should that structure fail.

12.1.b.1. Plan Package Requirements - The plan package submitted in order to reduce the height of a dam shall be in accordance with the applicable requirements of Section 6 of this rule and must also include the specific requirements delineated in subdivision 12.1.c. and subdivision 12.1.d. of this rule. Narratives, plans, or specifications required under Section 6 of this rule which are clearly not applicable to the proposed reduction may be omitted from the submittal; however, the ~~director~~ secretary reserves the right to specify those items which must be included in the reduction plan package.

12.1.c. The remaining structure shall have a properly designed spillway system capable of passing a Class 3 design storm without overtopping.

12.1.d. The remaining structure shall achieve a factor of safety in accordance with the provisions of subparagraph 7.4.b.1.C. or subparagraph 7.4.b.2.B. of this rule as appropriate to the type of structure.

12.1.e. The requirements of Section 8 of this rule apply when reducing the height of a dam unless clearly not applicable to the reduction operation; however, the ~~director~~ secretary reserves the right to specify which requirements are applicable.

12.1.f. The ~~director~~ secretary shall retain jurisdiction over the remaining structure until the reduction operation is completed and a letter of acceptance has been issued by the ~~director~~ secretary.

## 12.2. Enlargement of a Structure to Jurisdiction.

12.2.a. A person planning to enlarge an existing structure so that the completed structure will meet the definition of "dam" set forth in subsection ~~2.10~~ 2.12. of this rule must obtain a certificate of approval from the ~~director~~ secretary.

12.2.b. A complete application in accordance with the provisions of subsection 5.1 of this rule must be submitted to and approved by the ~~director~~ secretary prior to the commencement of enlargement activities.

12.2.b.1. Plan Package Requirements - The plan package submitted in order to enlarge a structure to jurisdiction shall be in accordance with the applicable requirements of Section 6 of this rule. Narratives, plans, or specifications required under Section 6 of this rule which are clearly not applicable to the proposed enlargement may be omitted from the submittal; however, the ~~director~~ secretary reserves the right to specify those items which must be included in the enlargement plan package.

12.2.c. The ~~director~~ secretary will require adequate drilling and testing of the existing structure and foundation to ascertain inplace conditions.

12.2.d. The requirements of Section 8 of this rule shall apply when enlarging a structure to jurisdiction unless clearly not applicable to the enlargement operation; however, the ~~director~~ secretary reserves the right to specify which requirements are applicable.

## §47-34-13. Dams Completed Before July 1, 1973.

13.1. Complete Application Required - An application for a certificate of approval shall be submitted to the ~~director~~ secretary for all dams completed before July 1, 1973 which meet the definition of "dam" set forth in subsection ~~2.10~~ 2.12. of this rule. If the engineer can demonstrate that the dam meets the design requirements specified in this rule, an application for approval of an existing dam shall be submitted. If the dam requires modification to meet the requirements, an application for modification of an existing dam shall be

submitted. If the above options are not exercised by the dam owner, an application to breach, remove, or properly abandon the dam pursuant to this rule shall be submitted.

13.2. Performance Requirements - All dams completed before July 1, 1973 shall meet the applicable design requirements of Section 7 of this rule. Those dams which do not meet the applicable design requirement of Section 7 of this rule shall be modified, breached, removed, or properly abandoned pursuant to the provisions of this rule. In developing the required plans, specifications, and documentation necessary to bring the structure into conformity with Section 7 of this rule, the design engineer may consider in his or her submitted analyses, peculiarities and local conditions for each impounding structure with recognition of the many factors involved, some of which may not be precisely known. Existing construction documentation and the historical performance of the structure including documented storms and spillway flows may be considered by the engineer as part of the evaluation of the structure. Upon approval by the ~~director~~ secretary of the plans, specifications, and documentation submitted by the engineer, the ~~director~~ secretary may issue a certificate of approval.

13.3. Plan Package Requirements - The plan package submitted for approval or modification of an existing dam shall be in accordance with applicable requirements of Section 6 of this rule, except that testing and analysis results may be substituted for design specifications. If as-built drawings are not available, the engineer may substitute drawings prepared by him or her which represent the existing conditions at the dam as determined through the testing and analysis program.

#### **§47-34-14. Sale or Transfer of a Dam.**

14.1. Notification and Documentation - Within thirty (30) days after the sale or transfer of a dam, the ~~director~~ secretary must be notified of that transaction by the person who was issued the certificate of approval for the dam.

14.1.a. The seller of a dam must provide the following documentation to the ~~director~~ secretary:

14.1.a.1. The name and address of new owner;

14.1.a.2. A copy of the signed agreement between the previous and new owner acknowledging certificate of approval responsibility and including any warranties, insurance coverage, or liability agreements between the parties;

14.1.a.3. The effective date of the ownership or responsibility transfer; and

14.1.a.4. Documentation that a copy of the certificate of approval or the most recent Dam Control Act notice to comply or order -- if a valid certificate of approval does not exist -- has been entered in the deed or land records of the county in which the dam is located.

14.1.b. The ~~director~~ secretary may reissue a corrected certificate of approval reflecting the sale or transfer of a dam upon the receipt of appropriate documentation and fees.

#### **§47-34-15. Dam Operations and Safety.**

15.1. Safe Operations - The owner of a dam shall ensure that his or her dam is operated in a safe and responsible manner so as not to endanger life or property.

15.2. Operations Plan - Owners of dams which require the operation of gates, penstocks, or other means of regulating the reservoir level or downstream flow shall develop and submit an operations plan to the ~~director~~ secretary for approval.

15.2.a. Plan Contents - The operations plan shall include, but not be limited to, normal and seasonal operational procedures for gates, penstocks, and other reservoir or downstream flow regulating devices. The name, address, and telephone number of each individual authorized to operate the dam shall also be included in the plan.

15.2.b. Plan Implementation - The operations plan shall be implemented immediately upon approval by the ~~director~~ secretary and shall be updated periodically as necessary to reflect any changes in personnel or operation procedures.

15.3. Releasing Water - The owner of a dam may release water or lower the reservoir elevation through the use of gates without prior approval of the ~~director~~ secretary provided that the release of water will not adversely affect the dam structure, property, or water quality or pose a hazard to human life.

15.3.a. Emergency Releases of Water - Under emergency conditions, the owner of a dam may release water at a rate which may violate the criteria established under subsection 15.3 of this rule provided that such emergency release will not pose an unjustifiable hazard to human life. Notification must be given of a pending emergency release of water in accordance with the provisions of subdivision 15.8.a. of this rule. In accordance with the provisions of W. Va. Code §22-14-12, this regulatory provision shall not relieve the owner of the dam of any liabilities resulting from an emergency release of water.

15.3.b. Low Flow Augmentation - The ~~director~~ secretary may require the owner of a dam to maintain a specified stream flow below the dam or to augment the stream flow for appropriate in-stream uses.

15.4. Dam Safety Inspections - Periodic inspections of dams shall be performed to monitor and assess the condition of the dam. These scheduled safety inspections of completed dams shall be in the charge of an engineer.

15.4.a. Inspections by the Dam Owner - The owner of a dam or his or her agent shall perform safety inspections monthly or more frequently. Such inspections must survey the dam and its appurtenances to check for problems or changes since the last inspection. The owner or his or her agent shall inspect the dam more frequently than once per month during adverse weather conditions. The owner shall report any observed problems to the ~~director~~ secretary.

15.4.b. Inspections by the ~~Director~~ Secretary - The ~~director~~ secretary may inspect any dam at any time in accordance with the provisions of W. Va. Code §22-14-4(i).

15.4.c. Inspections by the Owner's Engineer - An engineering inspection shall be conducted annually for three (3) years after the completion of any dam, in accordance with the provisions of paragraph 8.3.4 of this rule. Upon the conclusion of this three-year period, the dam shall be inspected by the owner's engineer at the frequency specified in subparagraph 15.4.3.a through subparagraph 15.4.3.c of this rule as appropriate to the hazard classification of the dam. The ~~director~~ secretary may require additional inspections based upon site conditions. The ~~director~~ secretary reserves the right to attend any inspection and require prior notification of the inspection from the owner of the dam.

15.4.c.1. Class 4 dams shall be inspected at least once every seven (7) years.

15.4.c.2. Class 3 dams shall be inspected at least once every five (5) years.

15.4.c.3. Class 2 dams shall be inspected at least once every three (3) years.

15.4.c.4. Class 1 dams shall be inspected at least once every two (2) years.

15.4.d. Inspection of Dams with Serious Problems - The ~~director~~ secretary may establish the frequency of inspection of dams with serious problems for both inspections by the dam owner under subdivision 15.4.a. of this rule and inspections by the owner's engineer under subdivision 15.4.c. of this rule. The inspection of a dam with serious problems shall monitor slopes, seepage, bulges, scarps, vertical displacement, excessive erosion, piping, sudden changes in monitoring devices, and other visible factors which could indicate potential failure of the embankment, spillways, or other appurtenances. The ~~director~~ secretary reserves the right to attend any inspection and require prior notification of the inspection by the owner of the dam.

#### 15.5. Dam Safety Inspection Reports.

15.5.a. Inspection Reports for Completed Dams - A written report containing the observations of each inspection that is required under subdivision 8.3.d. and subdivision 15.4.c. of this rule shall be submitted to the ~~director~~ secretary by the dam owner within thirty (30) days of the inspection. The report shall also describe maintenance work to be performed as a result of the inspection findings. Should a storm equal to or greater than a 50-year, 6-hour rainfall event occur, a similar report shall be filed to detail the resultant condition of the structure. Certification by an engineer shall be submitted to the ~~director~~ secretary with each inspection report to verify that the dam and its appurtenances are functioning as designed.

15.5.b. Inspection Reports for Dams with Serious Problems - A written report containing the observations of each inspection required under subdivision 15.4.d. of this rule shall be submitted to the ~~director~~ secretary by the dam owner within thirty (30) days of the inspection.

15.6. Monitoring Plans - Owners of Class 1 dams shall formulate and submit a monitoring plan to the ~~director~~ secretary for approval. Owners of Class 2 and 3 dams may be required by the ~~director~~ secretary to formulate and submit a monitoring plan for approval.

15.6.a. The monitoring plan developed by the dam owner must follow the format of the example plan provided by the ~~director~~ secretary and shall include, but not be limited to, the following:

- 15.6.a.1. A description of the dam, including appropriate drawings and location maps;
- 15.6.a.2. A listing of problems and deficiencies and any implemented repairs;
- 15.6.a.3. The inspection frequency under varying weather conditions;
- 15.6.a.4. A description of areas or items to be inspected;
- 15.6.a.5. Corrective actions to be taken;
- 15.6.a.6. The responsible persons' names, addresses, and telephone numbers;
- 15.6.a.7. The method of notification of the ~~director~~ secretary and county emergency services authorities; and
- 15.6.a.8. Other items required by the ~~director~~ secretary based upon site-specific conditions.

15.6.b. Monitoring plans shall be updated annually. More frequent updating of the plans may be required by the ~~director~~ secretary based upon rapidly changing personnel or site conditions. The monitoring plan shall be implemented immediately by the dam owner upon the approval of the plan by the ~~director~~ secretary.

15.7. Emergency Action Plans - Owners of Class 1 dams shall formulate and submit an emergency action plan to the ~~director~~ secretary for approval. Owners of Class 2 and 3 dams may be required by the ~~director~~ secretary to formulate and submit an emergency action plan for approval.

15.7.a. The emergency action plan developed by the dam owner must follow the format of the example plan provided by the ~~director~~ secretary.

15.7.b. The dam owner shall coordinate with county emergency service authorities in the development of the emergency action plan. The dam owner must provide copies of the inundation maps required under paragraph 3.5.c.2. of this rule to those authorities.

15.7.c. The dam owner shall provide county emergency services authorities with a copy of the monitoring plan, and all updates of that plan, approved by the ~~director~~ secretary pursuant to subsection 15.6 of this rule.

#### 15.8. Emergency Procedures.

15.8.a. Emergency Condition - If the owner of a dam determines that an emergency exists, he or she shall immediately notify any person who may be endangered if the dam should fail and then notify the appropriate county emergency services authorities and the ~~director~~ secretary. After providing notification of the emergency condition, the owner shall immediately take any remedial action, such as an emergency release of water, that is necessary to protect life and property. The ~~director~~ secretary may waive the requirement for a certificate of approval, as required under Section 4 of this rule, where it is necessary to accomplish repairs under emergency conditions.

15.8.b. Dangerous Condition - Should a dangerous condition develop, the ~~director~~ secretary shall be informed immediately. The owner of the dam shall immediately take any remedial action necessary to protect life and property. Emergency procedures developed in accordance with the provisions of subsection 15.6 and subsection 15.7 of this rule shall be implemented to protect life and property downstream. The site shall be inspected and monitored at least once every eight (8) hours until the emergency situation is alleviated. Continuous monitoring may be required by the ~~director~~ secretary when there is an imminent danger to the health, safety, or welfare of the public.

15.8.c. Evaluation of Dangerous Conditions - If a dangerous condition develops, an engineering evaluation shall be initiated as soon as possible to formulate a plan for permanent correction of the dangerous condition. The evaluation and corrective action plan shall be submitted to and approved by the ~~director~~ secretary prior to implementation.

15.9. Dam Owner Not Relieved of Responsibility - The ~~director's~~ secretary's approval of a monitoring plan, or updates to such a plan, pursuant to subsection 15.6 of this rule or his or her approval of an emergency action plan pursuant to subsection 15.7 of this rule shall not relieve the dam owner of his or her legal duties, obligations, or liabilities under W. Va. Code §§22-14-10 and 22-14-12.

#### §47-34-16. Dam Maintenance.

16.1. General Maintenance Requirements.

16.1.a. Required Maintenance - Each dam shall be maintained in accordance with the plans and specifications approved under the applicable certificate of approval. The ~~director~~ secretary may require maintenance to be performed on a dam, whether or not a certificate of approval has been issued for that dam.

16.1.b. Maintenance Plan - Owners of dams shall formulate and submit a written maintenance plan to the ~~director~~ secretary for approval. The maintenance plan shall include, but not be limited to, schedules for maintaining embankments, concrete structures, vegetative or rock covers, gates, gate mechanisms, penstocks, or other reservoir-regulating devices, spillways, and appurtenances. The maintenance plan shall be implemented immediately by the dam owner upon the approval of the plan by the ~~director~~ secretary. The maintenance plan shall be updated periodically as necessary to reflect changing site conditions.

16.2. Specific Maintenance Requirements.

16.2.a. All spillways and appurtenances shall be maintained to operate in accordance with the plans and specifications approved under the applicable certificate of approval.

16.2.b. All failures resulting from landslides or slope failures shall be corrected immediately if the failures significantly affect the safety or design capacity of the dam or its appurtenances. All failures shall be reported to the ~~director~~ secretary.

16.2.c. All pipes shall be repaired or replaced when damaged, or distorted, or if they otherwise fail to function properly in accordance with the plans and specifications approved under the applicable certificate of approval.

16.2.d. Leakage through joints, fissures, and cracks through or under the spillway channel shall be immediately investigated and repaired.

16.2.e. Any new gate which has been installed in a new dam or in the repair or modification of an existing dam, or any gate which has been opened within five (5) years prior to inspection by the ~~director~~ secretary, shall be opened to at least thirty-three percent (33%) of its maximum capacity at least once annually. Gates not meeting the above requirements may remain closed until operated for the purposes of the owner or to alleviate an emergency condition and shall thereafter be opened at least once annually. All gate mechanisms shall be lubricated annually regardless of the operational status of the gate.

16.3. Routine Maintenance.

16.3.a. Routine maintenance of spillways shall be performed. Such maintenance shall include the removal of sediment, brush, trees, obstructions, and rocks in stilling basins and the re-establishment of the structure to its original hydraulic design.

16.3.b. Routine inspections shall be made of all hydraulic structures in order to maintain proper operation. Special inspections shall be conducted whenever a significant flow through the structures has occurred.

16.3.c. If erosion on the embankment face or abutments occurs, the area shall be regraded and be provided with adequate drainage control or revegetation to prevent future occurrences.

16.3.d. All concrete structures and channel linings shall be maintained in accordance with the plans and specifications approved under the applicable certificate of approval. All cracks located in concrete channels shall be sealed immediately with a sealant approved by the ~~director~~ secretary.

16.3.e. Access roads shall be maintained in order to provide access for emergency inspections, vehicles, and equipment.

16.3.f. The embankment or concrete structure of a dam shall be kept clear of trees and shrubs. The downstream toe and abutments of the dam shall be cleared to natural ground for a lateral distance of at least twenty-five (25) feet. All dams with vegetative covers shall be mowed at least once annually. Grazing by farm animals shall be controlled to prevent animal trails or other damage to the vegetative cover.

16.3.g. The embankment shall be kept clear of burrowing animals.

16.3.h. All monitoring devices shall be routinely inspected and repaired or replaced as necessary so that the devices function properly.

#### **§47-34-17. Dam Repairs.**

17.1. General Repair Requirements - The ~~director~~ secretary may require repairs to be performed on a dam, whether or not the dam has a certificate of approval. Major repairs shall require a certificate of approval, issuance of which may or may not constitute final approval of the dam, as determined by the ~~director~~ secretary.

17.1.a. Routine Repairs (No Certificate Required) - Repairs conducted in accordance with the provisions of subsection 16.3 of this rule shall not normally require an application for a certificate of approval; however, the ~~director~~ secretary may require such an application based upon site-specific conditions.

17.1.b. Major Repairs (Certificate Required) - Any repairs to a dam other than routine repairs listed in subsection 16.3 of this rule shall require an application for a certificate of approval in accordance with the provisions of this rule.

#### **17.2. Specific Repair Requirements.**

17.2.a. Removal of Trees and Tree Roots - All trees shall be removed from the embankment and abutment areas, unless otherwise approved by the ~~director~~ secretary based upon site-specific conditions. Small trees with a base diameter of four (4) inches or less may be removed without removing the root system unless specific problems with the root system are evident. Larger trees may require special care in removal. The ~~director~~ secretary may require the removal of root systems of large trees if the potential for seepage along the root system exists. If removal of root systems requires extensive excavation of the embankment, the removal shall be considered a major repair requiring a complete application for a certificate of approval.

#### **§47-34-18. Application and Annual Registration Fees.**

18.1. Application Fees - Each application submitted to place, construct, enlarge, alter, repair, remove or abandon a dam shall include an application fee. No fee, however, shall be assessed for dams designed and constructed by the soil conservation service for soil conservation districts. The following application fees apply:

18.1.a. The application fee for placement, construction, alteration, enlargement, repair, or approval of a dam is three hundred dollars.

18.1.b. The application fee for breaching, or abandonment of a dam is two hundred dollars.

18.1.c. The application fee for removal of a dam is one hundred dollars.

18.2. Annual Registration Fees - Owners of existing dams holding certificates of approval shall be assessed an annual registration fee. In accordance with provisions of the Dam Control and Safety Act, West Virginia Code §22-14-7, existing certificates of approval will be extended for one year upon receipt of the annual registration fee, an inspection report in accordance with subsection 15.5 of this rule, a monitoring and emergency action plan in accordance with subsection 15.6 and subsection 15.7 of these regulations, and a maintenance plan in accordance with subdivision 16.1.b. of these regulations; Provided that where an approved, up-to-date: inspection report; monitoring and emergency action plan; and maintenance plan are on file in the Dam Safety Section, and where no outstanding violation(s) exist, then the certificate of approval will be extended without resubmission of the foregoing documents upon receipt of the annual registration fee. No fee shall be assessed, however, for dams designed and constructed by the soil conservation service for soil conservation districts. The following annual registration fees apply:

18.2.a. Class 4 dams shall be assessed twenty-five dollars.

18.2.b. Class 3 dams shall be assessed fifty dollars.

18.2.c. Class 2 dams shall be assessed seventy-five dollars

18.2.d. Class 1 dams shall be assessed one hundred dollars.

18.3. Any certificate of approval issued pursuant to W. Va. Code §22-14-7 and this rule is void without notification to the person holding the certificate of approval when the annual registration fee is more than one hundred eighty (180) days past due. Resubmission of an application in accordance with section 5 of this rule is required where a certificate has become void due to failure to pay the appropriate annual registration fee within one hundred eighty (180) days of the date due.

#### **§47-34-19. Civil Administrative Penalties.**

##### 19.1. Enforcement Actions.

19.1.a. General - An authorized representative of the ~~director~~ secretary may commence an enforcement action for any observed violation.

19.1.b. Enforcement Action Procedures - An enforcement action shall be in writing, shall be signed by the ~~director~~ secretary or other authorized representative of the ~~director~~ secretary, and shall set forth with reasonable specificity:

19.1.b.1. The nature of the enforcement action with a reference to the section of the statute, rule, regulation, notice, order or certificate of approval term that was allegedly violated;

19.1.b.2. The time and date of the observance of the violation;

19.1.b.3. A reasonable description of the dam where the violation was observed, where within the operation or maintenance of the dam the observation was observed, and the condition or hazard determined by the ~~director~~ secretary;

19.1.b.4. The name, ownership and location of the dam and any identification number associated with it; and

19.1.b.5. In those instances where a notice or order has not been previously issued, the remedial action necessary to alleviate the violation and time limits for accomplishing the remedial action.

19.2. Penalty Assessment Procedures.

19.2.a. Review of Enforcement Action and Penalty Calculation - The ~~director~~ secretary shall review each enforcement action issued for civil administrative penalty assessment to determine:

19.2.a.1. The appropriateness of a civil administrative penalty;

19.2.a.2. The initial amount of penalty, if any, based upon the rates and methods given in subsection 19.5 of this rule;

19.2.a.3. The appropriateness of assessing a daily civil administrative penalty for continuing violations;

19.2.a.4. The total initial civil administrative penalty assessed; and

19.2.a.5. The appropriateness of assessing a separate civil administrative penalty against an individual person.

19.2.b. Notice of Civil Administrative Penalty - The ~~director~~ secretary shall provide the violator with a copy of the enforcement action and:

19.2.b.1. A notice of civil administrative penalty which shall include procedures for requesting an informal hearing and a notification of applicable time constraints; or

19.2.b.2. A notice of dismissal.

19.3. Hearings and Appeals.

19.3.a. Right to Informal Hearing - The violator has twenty (20) calendar days from his or her receipt of the notice of civil administrative penalty within which to request, in writing, an informal hearing before the assessment officer. If a hearing is requested, the assessment officer will hold the hearing within 60 days to deduce the actual facts and circumstances regarding the violation and, based thereon, will make a final recommendation of civil administrative penalty assessment to the ~~director~~ secretary. If no hearing is requested, the notice of civil administrative penalty becomes a final order after the expiration of the twenty-day period and the civil administrative penalty becomes due and payable.

19.3.b. Notice and Scheduling of Informal Hearing - If the violator requests an informal hearing within the twenty-day period, the assessment officer shall schedule a hearing in accordance with the following procedures:

19.3.b.1. The time and place the informal hearing is to be held is to be communicated to any authorized representative of the ~~director~~ secretary who filed an enforcement action bringing about the informal hearing, to the violator and to any person who has expressed an interest in writing concerning the enforcement action;

19.3.b.2. The communication shall be provided at least fifteen (15) calendar days prior to the time of the hearing; and

19.3.b.3. The assessment officer may continue the informal hearing only for good cause shown.

19.3.c. Informal Hearing Procedures - An informal hearing, as provided by this rule, is intended to be an informal discussion of the facts which gave rise to the issuance of an enforcement action and shall be conducted in the following manner:

19.3.c.1. The West Virginia Rules of Civil Procedure and West Virginia Rules of Evidence shall not apply;

19.3.c.2. A record of the informal hearing is not required but may be made by any party to the hearing at the party's expense; and

19.3.c.3. At formal review proceedings which may ensue, no evidence as to any statement made by one party at the informal hearing may be introduced as evidence by another party, nor may any statement be used to impeach a witness, unless the statement is or was available as competent evidence independent of its introduction during the informal hearing.

19.3.d. Written Decision - Within thirty (30) calendar days following the informal hearing, the ~~director~~ secretary shall issue and furnish to the violator a written decision affirming, increasing, decreasing, or dismissing the initial civil administrative penalty assessment and giving the reasons for the decision.

19.3.e. Request for Formal Hearing - Within thirty (30) calendar days after notification of the ~~director's~~ secretary's informal hearing decision, the violator may request a formal hearing of the assessment in accordance with the provisions of W. Va. Code §29A-5-1, 2, and 3. If no formal hearing is requested, the ~~director's~~ secretary's decision becomes a final order after the expiration of the thirty day period and the civil administrative penalty becomes due and payable.

19.3.f. Request for Judicial Review - Within thirty (30) calendar days after notification of the ~~director's~~ secretary's formal hearing decision, the violator may request a judicial review of the assessment in accordance with the provisions of W. Va. Code §29A-5-4. If no judicial review is requested, the ~~director's~~ secretary's decision becomes a final order after the expiration of the thirty day period and the civil administrative penalty becomes due and payable.

#### 19.4. Separate Civil Administrative Penalties.

19.4.a. The ~~director~~ secretary may assess a separate civil administrative penalty against any corporate director, officer, agent, or employee of a violator, or any other person, who authorizes, orders, or carries out a violation of the statute, rule, regulation, order, or certificate of approval term or who fails or refuses to follow an order from the ~~director~~ secretary.

19.4.b. In determining the amount of a civil administrative penalty to be assessed against a person, consideration shall be given to the criteria specified in subsection 19.5 of this rule.

19.4.c. The ~~director~~ secretary shall serve on each person to be assessed an administrative penalty a notice of separate civil administrative penalty assessment. For purposes of this subsection of this rule, service is considered sufficient if it satisfies Rule 4 of the West Virginia Rules of Civil Procedure for service of a summons and complaint. A notice of separate civil administrative penalty assessment shall include:

19.4.c.1. A reference to the section of the statute, rule, regulation, order, or certificate of approval term allegedly violated;

19.4.c.2. A concise statement of the facts alleged to constitute the violation;

19.4.c.3. A statement of the amount of the separate civil administrative penalty to be imposed;

19.4.c.4. A copy of the underlying enforcement action; and

19.4.c.5. A statement of a person's right to an informal hearing.

19.4.d. A person shall have twenty (20) calendar days from receipt of the notice of separate civil administrative penalty assessment in which to request, in writing, an informal hearing before the assessment officer. If no hearing is requested, the notice of separate civil administrative penalty becomes a final order after expiration of the thirty-day period and the separate civil administrative penalty becomes due and payable.

19.4.e. The informal hearing, if requested, will be scheduled and conducted pursuant to this section.

#### 19.5. Civil Administrative Penalty Calculation Procedures.

19.5.a. Calculation - The ~~director~~ secretary shall calculate a civil administrative penalty by taking into account the seriousness of the alleged violation, good faith efforts on the part of the violator (as provided for in paragraph 19.5.3 of this section) and any history of violations by the violator.

19.5.b. History of Violations (HOV) - The ~~director~~ secretary shall take into account the violator's history of violations by determining if any enforcement actions concerning Certificate terms, requirements of the Act, regulations requirements, notices to comply or any orders have been taken against the violator during twenty-four (24) months prior to the violation. Those enforcement actions which were withdrawn, dismissed, or vacated shall not be included in the determination. Any outstanding violation within the time period shall constitute a history of violations.

19.5.c. Good Faith Effort - A good faith effort shall be considered as completion of nearly all requirements of the Certificate, Act, Regulations, notice to comply or order in question. Good faith may still be determined when minor aspects of the requirements which do not affect the safety of the dam have not been completed by the violator.

19.5.d. Maximum Assessed Penalty - Assessment of civil administrative penalties shall not exceed two hundred dollars per day per violation. The total assessed penalty for any violation shall not exceed of four hundred dollars.

19.5.e. Penalty Without Good Faith Effort by Violator - The civil administrative penalty shall be determined through the use of Table A of this rule.

19.5.f. Penalty With Good Faith Efforts by Violator - The civil administrative penalty shall be determined through the use of Table B of this rule.

**TABLE A**

Seriousness of Violation  
(dollars/day/violation)

	<u>No Hazard</u>		<u>Serious Problem</u>		<u>Dangerous Condition</u>	
	<u>No HOV</u>	<u>With HOV</u>	<u>No HOV</u>	<u>With HOV</u>	<u>No HOV</u>	<u>With HOV</u>
Certificate	10	25	30	50	100	200
Dam Control Act	25	50	60	75	125	200
Regulations	50	75	85	100	150	200
Notice to Comply	75	100	125	150	175	200
Order	100	125	150	175	185	200

**TABLE B**

With Good Faith Efforts to Comply  
(dollars/day/violation)

	<u>No Hazard</u>		<u>Serious Problem</u>		<u>Dangerous Condition</u>	
	<u>No HOV</u>	<u>With HOV</u>	<u>No HOV</u>	<u>With HOV</u>	<u>No HOV</u>	<u>With HOV</u>
Certificate	0	20	20	45	90	195
Dam Control Act	15	45	50	70	115	195
Regulations	40	70	75	95	140	195
Notice to Comply	65	95	115	145	170	195
Order	90	120	140	170	180	195

Note: HOV = History of Violations

**§47-34-20. List of Deficient Dams.**

20.1. List of Deficient Dams. -- A state List of Deficient Dams shall be developed by the secretary utilizing a priority rating system. The list shall contain those projects that are eligible for DSRRF loan assistance.

**§47-31-21. Fund Establishment and Administration.**

21.1. Establishment of the Fund. -- The secretary shall establish a fund to be known as the "Dam Safety Rehabilitation Revolving Fund." The Fund shall be kept separate and apart from all other funds or programs of the secretary.

21.2. Sources of Moneys for the Fund. -- The Fund shall be comprised of money allocated to the state by the federal government expressly for the purposes of establishing and maintaining a state Dam Safety Rehabilitation Revolving Fund. The fund shall also include all receipts from loans made by the fund, any moneys appropriated by the Legislature, all income from the investment of moneys held in the fund, and all other moneys designated for deposit to the fund from any source, public or private. The fund shall operate as a special revenue fund and all deposits and payments into the fund do not expire to the General Revenue Fund, but shall remain in the account and be available for expenditure in succeeding fiscal years.

21.3. Use of Moneys in the Fund. -- Moneys in the Fund shall be used solely to make loans to persons who own an interest in a deficient dam to finance the engineering, design, alteration, improvement, repair, breaching or removal of the deficient dam necessary to correct or remove the deficiencies and other activities as authorized by a federal grant or a legislative appropriation: Further, the fund may be utilized to defray administrative costs incurred by the department.

21.4. Investment of Moneys in the Fund. -- The secretary shall invest the moneys in the Fund that are not needed for immediate disbursement or use in obligations or securities that are lawful investments for public funds of the state.

21.5. Disbursement of Moneys from the Fund. -- Moneys shall be disbursed from the Fund only upon a written authorization from the secretary.

21.6. Loans from the Fund. -- Moneys in the Fund shall be loaned to dam owners who own an interest in a deficient dam to finance the engineering, design, alteration, improvement, repair, breaching or removal of the deficient dam necessary to correct or remove the deficiencies and other activities. Each loan shall be in an amount that covers those costs of a project for which funds are sought by the applicant from the secretary and which are not provided by other available sources.

21.7. Evidence of and Security for Loans. -- Each loan shall be evidenced by notes or other debt instruments issued by the applicant and shall be secured with the proceeds of the loan and any other collateral as may be required by the secretary.

21.8. Applications for Loans. -- A person, or a combination of persons, that has the authority under applicable law to undertake a project and that has been approved as an eligible recipient by the secretary may apply for a loan. An eligible recipient desiring a loan shall make a separate application to the secretary, on approved forms, for each project for which a loan is desired. Following approval by the secretary and when moneys are available for loans, the secretary shall provide the person with a commitment letter /loan agreement setting forth the specific terms of the loan. The commitment letter/ loan agreement, following execution by the person, constitutes a binding commitment for moneys from the Fund.

21.9. Determination of Eligible Recipient Status. -- Persons projected to be able to qualify for DSRRF loan assistance will be identified in the List of Deficient Dams. Only those projects on the state List of Deficient Dams for the current fiscal year shall be considered in the determination of eligible recipient status in accordance with the priority determined in the List of Deficient Dams.

21.10. The secretary shall also consider eligibility for loans to include, but not be limited to, the following considerations:

21.10.a. Owners of deficient dams that have demonstrated their ability to pay is less than the estimated cost of modification or removal of the dam are eligible. The secretary shall evaluate the borrower's financial stability, needs and ability to repay based upon an appropriate examination of financial information, including, but not limited to, income and credit histories, income tax returns, financial statements and collateral offered to secure the loan.

21.10.b. Any costs directly related to rehabilitating safety deficiencies of a dam shall be eligible to be funded through the Fund.

21.10.c. Fees for analysis, feasibility work, alternative evaluation, and engineering design, are only eligible retroactively after construction has been initiated, or at the point that analysis has shown a dam to be in compliance unless otherwise approved by the secretary.

21.10.d. Dam owners may use multiple programs or sources to fund the rehabilitation costs for a deficient dam, up to 100 percent of rehabilitation costs. Dam owners cannot exceed 100 percent funding from multiple programs or sources and must provide the secretary with any multiple source accounting to verify that the loan amount plus the additional sources of funding do not exceed 100 percent.

21.10.e. Rehabilitation costs for any deficient dam are eligible, except for dams owned by the federal government.

21.10.f. Any costs for State agency required fish passage are eligible only if they are part of an overall rehabilitation project.

21.10.g. Costs for lake enhancement projects such as lake dredging, sediment removal projects, or boat ramps, which do not enhance the safety of a deficient dam are not eligible to be funded through the Fund.

21.11. Loan Agreements. -- Prior to providing a loan to an eligible recipient, the secretary shall execute and enter into a loan agreement with the applicant which shall be binding under the laws of the state and which shall contain such provisions as may be required by the secretary including:

21.11.a. The cost of the project, the amount of the loan, and the terms of repayment of the loan and the security therefor, which may include a deed of trust or other appropriate security instrument creating a lien on such project provided that the annual repayment of principal and payment of interest begins not later than one (1) year after project completion and that the final payment date shall not exceed a duration set by the secretary from said completion date;

21.11.b. The specific purposes for which the proceeds of the loan shall be expended, the procedures as to the disbursement of loan proceeds including an estimated monthly draw schedule, and the duties and obligations imposed upon the applicant in regard to the acquisition or construction of the project;

21.11.c. The agreement of the applicant to repay the obligations of such applicant under the loan agreement. Revenue may be pledged for the repayment of the loan together with all interest, fees, and charges

thereon and all other financial obligations of the applicant under the loan agreement;

21.11.d. If notes or other interim obligations are being issued by the applicant, the agreement of the applicant to take such other repayment actions as are required of the applicant under the loan agreement;

21.11.e. The agreement of the applicant to accept the secretary's enforcement remedies under section 14 of the Act in the event of any default under the loan; and

21.11.f. The agreement of the applicant to comply with all applicable federal and state statutes and regulations and all applicable local ordinances pertinent to the financing, acquisition, construction, operation, maintenance, and use of the project.

21.12. Payment of Principal and Interest on Loans. -- Payments of the principal and any interest on a loan shall be made by the applicant in accordance with the provisions of the loan agreement.

21.13. Computation of Interest on Loans. -- Each loan shall bear interest from the date of the delivery of the notes of the applicant evidencing the loan to the applicant (or such other date as is determined by the secretary) at a rate or rates per annum, either fixed or variable, as determined by the secretary.

21.14. Fees and Charges. -- In addition to payments of principal and interest on a loan, each applicant shall agree in the loan agreement to pay fees and charges equal to the applicant's share of the administrative expenses of the secretary relating to the loan program described in Section 21 of this rule.

21.15. Loans. Conditioned Upon Availability of Moneys in the Fund. -- The obligation of the secretary to make any loan shall be conditioned upon the availability of moneys in the Fund in such amounts and on such terms and conditions as, in the sole judgment of the secretary, will enable it to make the loans.

21.16. Disbursement of Loan Moneys.

21.16.a. On a monthly basis, the secretary shall disburse to each recipient the amount certified to the secretary as costs incurred for the project. Said certification shall be made in the approved form. The funds will be dispensed from the state upon presentation of executed payment request form.

21.16.b. Each recipient shall comply with all terms and conditions of the loan agreement or notes or other debt instruments evidencing the loan.

#### **§47-34-22. Program Requirements.**

22.1. General Requirements.

22.1.a. The applicant should request a pre-application meeting with the secretary to discuss the requirements of the program. A pre-application package, in a form prescribed by the secretary, shall be completed and submitted to the director prior to this meeting.

22.1.b. The review and approval by the director of the pre-application package project plans, design drawings and specifications, or other documents is for administrative purposes only and does not relieve the applicant or his agents and employees from properly planning, designing, constructing, operating, and maintaining the project as required under applicable federal and state statutes and regulations.

22.1.c. The applicant shall demonstrate to the director that he has the financial, institutional, legal, and managerial capabilities to ensure adequate construction, operation, and maintenance of the dam. As a

part of this demonstration, the applicant shall complete and submit to the director financial capability worksheets supplied by the secretary.

22.1.d. If the project will involve two (2) or more legal entities, the applicant shall submit an agreement among the parties to the director in a form prescribed by the secretary.

22.1.e. Owner's Responsibilities. Once a loan has been granted under this rule, the owner of a dam shall:

22.1.e.1. Cooperate with the secretary by:

22.1.e.1.A. Facilitating access to the dam and its appurtenances;

22.1.e.1.B. Furnish the secretary with all plans, specifications, operation and maintenance data, instrumentation data, and other information pertinent to the dam and its appurtenances, or the loan;

22.1.e.1.C. Provide the secretary with an operation and maintenance plan;

22.1.e.1.D. Maintain the structure and its appurtenant works in the state of repair and operating condition required by the exercise of prudence; due regard for life or property; the application of sound and accepted engineering principles; and provisions of this Rule;

22.1.e.1.E. Develop a monitoring and emergency action plan for the approval of the secretary and implement the plan upon approval;

22.1.e.1.F. Provide the secretary with written, regularly scheduled reports describing progress toward modification or removal of the dam; and

22.1.e.1.G. Demonstrate the ability to appropriately operate and maintain the dam after rehabilitation is complete.

BEFORE THE DEPARTMENT OF ENVIRONMENTAL PROTECTION  
DIVISION OF WATER AND WASTE MANAGEMENT

IN THE MATTER OF:

PROPOSED RULE 47CSR34

Dam Safety

**TRANSCRIPT OF PROCEEDINGS** had or testimony of adduced pursuant to the West Virginia Rules of Civil Procedure in the above-entitled action, on the 11<sup>th</sup> day of July, 2007, commencing at 7:05 p.m. and concluding at 7:12 p.m., at the office of the West Virginia Department of Environmental Protection, 601 57<sup>th</sup> Street, S.E., Charleston, Kanawha County, West Virginia, pursuant to notice to all interested parties.

BEFORE: DIANA HAID, Public Information Office

**ORIGINAL**

**NANCY MCNEALY**  
CERTIFIED COURT REPORTER  
Post Office Box 13415  
Charleston, West Virginia 25360-0415  
(304) 988-2873 FAX (304) 988-1419



I N D E X

Reporter's Certificate.....Page 6

1           MS. HAID:           Good evening. My name is  
2 Diana Haid, and I work with the Public Information Office.  
3 Welcome to the DEP and the public hearing to discuss the  
4 2008 Proposed Legislative Rule No. 47CSR34, Dam Safety.

5                         Please make sure that you have signed in  
6 and indicated if you're going to make a comment. Comments  
7 shall be limited to the proposed revisions to the rule.  
8 Copies of the rules are available from the Secretary of  
9 State's Office or from the DEP webpage at  
10 [www.WVDEP.org/2008 Rules](http://www.WVDEP.org/2008_Rules).

11                         We are here this evening to listen to  
12 comments and questions and include them in the official  
13 record. Written comments must be submitted to the West  
14 Virginia Department of Environmental Protection Public  
15 Information Office at 601 57th Street, S.E., Charleston,  
16 West Virginia, 25304. Comments may also be e-mailed to  
17 [Comments@WVDEP.org](mailto:Comments@WVDEP.org).

18                         The meeting is being recorded, and the  
19 comment period will end at the conclusion of this hearing.  
20 I would like to have Brian or Mike either one to come and  
21 give a summary of the rule, Brian Long from the Division of  
22 Water and Waste Management.

23           MR. LONG:           The proposed legislative rule  
24 establishes requirements to govern the disbursement and use

1 of monies held in the state and safety rehabilitation  
2 revolving fund and shall be used solely to make loans to  
3 persons who own an interest in a deficient dam to finance  
4 the engineering, design, alteration, improvement, repair,  
5 breaching or removal of the deficient dam necessary to  
6 correct or remove the deficiencies and other activities as  
7 authorized by a federal grant or a legislative  
8 appropriation and to defray costs incurred by the  
9 department in administering the fund.

10 MS. HAID: Thank you, Brian. And now since  
11 there are no more comments, this would conclude our  
12 official comment period and we will file the rule with our  
13 responses with the Secretary of State's office. Thank you  
14 very much for coming.

(WHEREUPON, the hearing was closed.)

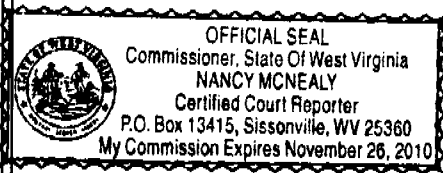
WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION  
DIVISION OF WATER AND WASTE MANAGEMENT

STATE OF WEST VIRGINIA,  
COUNTY OF KANAWHA, to wit:

I, **NANCY MCNEALY**, Certified Verbatim Reporter and Commissioner of West Virginia, do hereby certify that the foregoing is, to the best of my skill and ability, a true and accurate transcript of all the proceedings as set forth in the caption hereof.

Given under my hand this 12th day of July, 2007.

My commission expires November 26, 2010.



*Nancy McNealy*  
Certified Verbatim Reporter



**From:** "Dwight Emrich" <casadde@citynet.net>  
**To:** <comments@wvdep.org>  
**Date:** 7/11/2007 5:57:00 PM  
**Subject:** Fw: 47CSR34Dam Safety & 33CSR20 Hazardous Waste Management

Sent: Wednesday, July 11, 2007 5:26 PM  
Subject: 47CSR34Dam Safety & 33CSR20 Hazardous Waste Management

Division of Water and Waste Management  
47CSR34 Dam Safety  
PUBLIC COMMENT

The third highest dam in the world is an earthen dam in the coalfields WV, USA.. Every natural and human community below this massive toxic fluid impoundment is endangered with a potential life ending situation that was created by the coal mining industry. There is no safety in the present situation.

Please rehabilitate the energy producing capacity of our dead wasted stripped coal mined areas by retooling for a future. May I suggest building a hydro electric pump storage facility that will harness the potential energy inherent in the current earthen dam situation.

Save the Meadow River! Move the Rainelle coal fired plant into the wake of Mountain Top Removal mined areas with new technology built into the plant for pollution control.

33CSR20 HAZARDOUS WASTE MANAGEMENT SYSTEM.

Please keep toxic waste producing industries away from our pristine oxygen producing living forests and our homes.

Build proper dams in the Mountaintop Removal wasted lands and keep the toxic materials there, on the bare rock and away from us.

Please rehabilitate the strip mined wastelands for parking lots, and industry, for solar power, wind turbines, etc. so that our living forests and life habitats (natural and human) can be preserved so that we can have future generations.

Sincerely, Dwight D. Emrich

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No virus found in this incoming message.

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Version: 7.5.476 / Virus Database: 269.10.4/896 - Release Date: 7/11/2007 4:09 PM

## RESPONSE TO COMMENTS—47CSR34

The following is a response to the comments provided during the public comment period on the Department of Environmental Protection's rule, 47CSR34 "Dam Safety Rules." Written comments were accepted until July 11, 2007. A public hearing was held on July 11, 2007. One written comment was received and is addressed below.

### **I. COMMENTER: Mr. Dwight Emrich**

#### **COMMENT A.** *The existence of third highest earthen dam in the world in West Virginia.*

*The commenter states that the third highest dam in the world is an earthen dam in the coalfields of West Virginia created by the mining industry. The massive toxic impoundment is a potential life ending situation according to the commenter. The commenter recommends utilizing the potential energy of the dam through construction of a pump storage hydroelectric facility at the dam.*

**RESPONSE A.** The proposed Rule establishes requirements to govern the disbursement and use of moneys in a state Dam Safety Rehabilitation Revolving Fund restricted to non-coal dams. The comment received regards coal related dams which are not covered by the proposed Rule.