WEST VIRGINIA
SECRETARY OF STATE
KEN HECHLER
ADMINISTRATIVE LAW DIVISION

Form #6

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SECRETARY OF STATE

NOTICE OF FINAL FILING AND ADOPTION OF A LEGISLATIVE RULE AUTHORIZED BY THE WEST VIRGINIA LEGISLATURE.

AGENCY: Department of Energy, Oil and Gas Div TITLE NUMBER: 38

AMENDMENT TO AN EXISTING RULE: YES____, NO XX

IF YES, SERIES NUMBER OF RULE BEING AMENDED: _____

TITLE OF RULE BEING AMENDED: _____

_____

IF NO, SERIES NUMBER OF NEW RULE BEING PROPOSED: 14

TITLE OF RULE BEING PROPOSED: Dam Control

_____

THE ABOVE RULE HAS BEEN AUTHORIZED BY THE WEST VIRGINIA LEGISLATURE.

AUTHORIZATION IS CITED IN (house or senate bill number) SB 748

SECTION 64-2-22(1)(16)(b), PASSED ON March 14, 1987

THIS RULE IS FILED WITH THE SECRETARY OF STATE. THIS RULE BECOMES EFFECTIVE ON THE FOLLOWING DATE: June 12, 1987

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WEST VIRGINIA LEGISLATIVE RULE
DEPARTMENT OF ENERGY
DIVISION OF OIL AND GAS
CHAPTER 22-1, 22B-1 and 20-5D
SERIES 6

Title: Dam Control

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~~WEST VIRGINIA~~ LEGISLATIVE RULE
DEPARTMENT OF ENERGY
DIVISION OF OIL AND GAS
~~CHAPTER 22-1, 22B-1 and 20-5D~~
SERIES ~~6~~ C 14

Title: Dam Control

Section 1. General

1.1 Scope - This legislative rule establishes general and specific rules for the design, placement, construction, enlargement, alteration, repair or removal of dams pertaining to the exploration, development, production, storage and recovery of oil and gas, and related mineral resources in this state, to include application for approval, hazard potential, subsurface and geologic investigation, laboratory investigation, hydrology, runoff control, hydraulics, slope stability and protection, seepage analysis, settlement analysis, foundation analysis, liquefaction potential, quality control, maintenance and inspection.

1.2 Authority and Related Code Citation(s) - W.Va. Code §§22-1-13; 22-1-15; 22-1-16; 22B-1-2, and 20-5D-1 through 14.

1.3 Filing Date - June 12, 1987

1.4 Effective Date - June 12, 1987

1.5 Former Rule Superseded- This legislative rule supersedes West Virginia Legislative Rule "Department of Natural Resources, Chapter 20-5D, Series XVI, Dam Control Regulations" in effect on July 11, 1985, to the extent that such rule pertains to the exploration, development, production, storage and recovery of oil and gas, and related mineral resources in this state. Such rule was continued in effect pursuant to W.Va. Code §22-1-15 for the benefit of the Department of Energy to the extent that it pertained to the provisions of The West Virginia Energy Act.

Section 2. Definitions

Unless the context in which used clearly requires a different meaning, the definitions contained in W.Va. Code

§20-5D-3 shall apply to this rule in addition to those definitions set forth below:

2.1 "Appurtenances" means any ancillary part of the dam and/or reservoir system which contributes to the operation or construction of the dam.

2.2 "Channel protection" means any measures taken to prevent or control erosion, cavitation, or other destructive the lowest point of the crest of the embankment of a dam and the reservoir water surface.

2.3 "Dangerous condition" means any structural, or hydraulic condition of a dam or its appurtenances which may lead to (1) failure of the dam and possible loss of human life or substantial loss of property, or (2) harm to the public health or welfare, or (3) significant harm to the environment.

2.4 "Design storm" means predicted precipitation of given intensity, frequency, and duration based on National Weather Service data.

2.5 "Diversion ditch" means a designed channel constructed for the purpose of collecting and transmitting surface runoff resulting from a given design storm.

2.6 "Embankment" means a man-made deposit of earth or waste materials, usually exhibiting at least one sloping face.

2.7 "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.

2.8 "Engineer" means a registered professional engineer in accordance with Article 13, Chapter 30 of the Code of West Virginia, 1931, as amended (W.Va. State Registration Law for Professional Engineers.)

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

2.10 "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.

2.11 "Hazard potential" means a classification rating assigned to a structure based on engineering evaluations and judgement for predicting the danger to human life, property and environment should a failure of the structure occur.

2.12 "Highway, primary" means those roadways which are designated as interstates, U.S. numbered highways or West Virginia numbered highways.

2.13 "Highway, secondary" means those roadways which are designated by the West Virginia Department of Highways as county numbered routes.

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

2.15 "Hydrologic analysis" means a determination, using accepted engineering methods, to establish surface water runoff for a specified design storm.

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

2.17 "Impoundment" means a basin constructed for the retention of water, sediment or waste.

2.18 "Natural drainway" means any natural water course which may carry water to the tributaries and rivers of the watershed.

2.19 "P100" means the rainfall amount based on a 100 year frequency, 6-hour duration rainfall event.

2.20 "PMP" means the probable maximum precipitation.

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

2.21 "Probable maximum precipitation" means the depth-duration-area rainfall for a particular area that represents the maximizing of the most critical meteorological conditions that are considered possible of occurrence.

2.22 "Safety factor" means the ratio of the available shear strength to the developed shear stress, or ratio of the sum of the resisting forces to the sum of the loading or driving forces, as determined by accepted engineering practices.

2.23 "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.

2.24 "Serious problem" means a situation, which left uncorrected, may lead to a dangerous condition.

2.25 "Site" means the actual or planned location of a dam including, but not limited to, appurtenant works, reservoirs area, diversion ditches, sediment control facilities, and borrow areas.

2.26 "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.

Section 3. Requirements for a Certificate of Approval

3.1 Applicability -- An application and certificate of approval is required for any placement, construction, modification, enlargement, alteration, repair or removal of a dam after June 13, 1973, pertaining to the exploration, development, production, storage and recovery of oil and gas, and related mineral resources in this state. The Director of the Department of Energy, Division of Oil and Gas shall give notice to file an application for a certificate of approval to every owner of such a dam completed prior to July 1, 1973, that has not been issued a certificate of approval pursuant to W.Va. Code §§20-5D-1 through 14, as of the effective date of this rule. Any person who wishes to construct, modify, or remove such a dam or who is notified by said Director shall (a) file an application for a certificate of approval with the Department of Energy, Division of Oil and Gas and (b) obtain from said Division a certificate of approval, unless such person has applied for and been issued a certificate of approval pursuant to W.Va. Code §§20-5D-1 through 14, as of the effective date of this rule.

3.2 Application Requirements -- An application for a certificate of approval shall be prepared by or under the direct supervision of a registered professional engineer. The application shall be on forms prescribed by the Director of the Division

of Oil and Gas of the Department of Energy and shall include one set of maps and drawings on standard 24" by 36" size plan sheets with two copies of an engineering report. The engineering report shall satisfy the requirements of Section 4.

Section 4. Engineering Report Requirements

The engineering report required to accompany the application for a certificate of approval shall contain the following information in the order listed:

4.1 Project Narrative -- A general narrative and discussion of the project shall be submitted to include as required by the design concept a discussion of existing site conditions, local geology, the design life of the facility, subsidence potential, design methodology backed up with design computations and data, method of construction to include clearing and grubbing, topsoil stockpiles, construction of surface and subsurface drainage facilities, phases of construction, routine inspection and maintenance, and timetable of construction. A description of the duties, responsibilities and lines of communication between those persons responsible for the design, construction and operation of the dam shall be included.

4.2 Emergency Warning Systems -- All owners of dams posing a hazard to human life shall include an emergency notification and evacuation procedure and shall include a list of appropriate agencies to be contacted in the event a dangerous condition develops. These agencies shall include as a minimum the Division of Oil and Gas of the Department of Energy, Office of Emergency Services, and state and local law enforcement agencies.

4.3 Hazard Classification -- The hazard potential shall be determined by the applicant based on the potential loss that would result due to a failure and the classification determined as listed below:

4.3.1 Class A -- Dams located in rural or agricultural areas where failure may damage farm buildings, agricultural land, or secondary highways. Failure of the structure would cause only loss of the structure and loss of property use such as related roads, but with little additional damage to adjacent property. Any impoundment exceeding 25 feet in height or 200 acre-feet storage volume or having a watershed exceeding 500 acres shall not be a Class A structure.

4.3.2 Class B -- Dams located in predominately rural agricultural areas where failure may damage isolated homes, primary highways or minor railroads or cause interruption of relatively important public utilities. Failure of the structure may cause great damage to proterty and project operations.

4.3.3 Class C -- Dams located where failure may cause loss of human life, serious damage to homes, industrial and commercial buildings, important public utilities, primary highways, or main railroads. This classification must be used if failure would cause possible loss of human life.

4.4 Initial Site Investigation

4.4.1 Site Selection

4.4.1.1 Hazard Classification Evaluation

4.4.1.1.1 A complete upstream and downstream hazard evaluation shall be conducted based on Section 4.3. No dam shall be constructed so that upstream dwellings will be flooded during maximum pool conditions unless otherwise approved by the Director of the Division of Oil and Gas of the Department of Energy based on specific site conditions.

4.4.1.1.2 A downstream breach routing of the dam must be performed to justify a hazard classification of A or B if dwellings are located downstream.

4.4.1.2 Site Survey -- A site survey must be conducted to establish baselines and elevations of the dam embankments, reservoir and borrow areas, and appurtenant structures. The survey must locate all test pits, borings, mine openings, landslides, etc.

4.4.1.3 Borrow Areas -- Suitable borrow areas shall be evaluated for appropriate construction materials and required volume.

4.4.2 Geotechnical Investigation

4.4.2.1 A geotechnical investigation shall be performed. The quantity, location and depth of borings, test pits or trenches shall be adequate for 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. Soil profiles may be required for critical locations in the structure, spillways and other pertinent locations which affect the safety of the structure. A geological study shall also be conducted to evaluate 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 to include thickness of seam, depth and type of rock above the seam, and previous or expected subsidence problems shall be considered where subsidence may affect the safety of the structure.

4.4.2.2 Laboratory Investigation -- Laboratory tests shall be conducted on foundation and embankment materials to include complete soil classification: grain size, sieve, and hydrometer analysis, Atterburg limits, density, water content, compaction tests, shear strength, consolidation and permeability where applicable. Compaction curves shall be developed for all fill materials as appropriate.

4.4.3 Hydrologic Investigation

4.4.3.1 A survey shall be conducted to determine soil types, land use, land slope, watershed area, runoff curve number, and any other factors needed to establish watershed characteristics.

4.4.3.2 Stream flow analysis shall be conducted to determine stream flow quantity and quality as it affects the dam and its appurtenances.

4.4.3.3 All necessary parameters to determine stream channel hydraulics shall be measured.

4.5 Hydrology and Hydraulics

4.5.1 Design Data Required -- A summary of all hydrologic and hydraulic data determined in the initial site investigation and used in the analysis (Section 4.4) shall be included in table or figure form.

4.5.2 Design Requirements

4.5.2.1 Design Storm -- All dams shall be designed to meet the following minimum hydrologic criteria based on hazard classification:

4.5.2.1.1 Class A dams shall be designed for a minimum of P100+0.12(PMP-P100) inches of rainfall in six (6) hours plus three (3) feet of freeboard. If the storage X effective height is less than 3,000 (acre-feet X feet) then Soil Conservation Pond Standard 378 may be substituted.

4.5.2.1.2 Class B dams shall be designed for a minimum of P100+0.40 (PMP-P100) inches of rainfall in six (6) hours plus three (3) feet of freeboard.

4.5.2.1.3 Class C dams shall be designed for the probable maximum precipitation, or for 80 percent of the probable maximum precipitation plus three (3) feet of freeboard provided the watershed is less than ten (10) square miles in area.

4.5.2.2 Storage and Discharge

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

4.5.2.2.2 Class B dams shall be designed with either an open channel spillway only, or a combination of principal and emergency spillways. The dam must be capable of passing that portion of the design storm that cannot be safely stored in the impoundment. Ninety (90) percent of the stored portion of the design storm shall 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.

4.5.2.2.3 Class C dams may be designed in one of three ways:

4.5.2.2.3.1 A dam designed without discharge structures shall be capable of storing a minimum of two (2) probable maximum, 6 hour duration storms. 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) probable maximum storm or less.

4.5.2.2.3.2 A dam designed with a decant or principal spillway only shall be capable of storing one (1) probable maximum, 6 hour duration storm. Ninety (90) percent of the stored portion of the storm shall 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.

4.5.2.2.3.3 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 probable maximum storm that cannot be safely stored in the impoundment. Ninety (90) percent of the stored portion of the storm shall 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.

4.5.2.3 Surface Drainage

A diversion system shall be designed to protect the entire front slope of the dam from excessive erosion. All diversion systems shall exit safely beyond the toe of an embankment in a natural drainway capable of carrying the design flow without excessive erosion. The design storm for diversion systems shall be the 100 year, 6 hour duration storm event.

4.5.2.4 Spillways

4.5.2.4.1 All spillways shall exit in adequate distance beyond the toe of the embankment in a natural drainway to prevent erosion of the toe.

4.5.2.4.2 Conduit spillway inlets must be protected by a designed trash rack and riser type spillways must be designed to prevent detrimental vortexing. An adequate foundation and bedding shall be designed for all conduits and risers. Anti-seep mechanisms shall be designed for all conduits. Conduits spillways shall be of sufficient strength to withstand the maximum load of fill above them and of suitable material to resist deterioration for the design life of the structure. Conduit spillways must also be designed to resist uplift pressures. The outlet of all conduits, where blockage by animals can occur, must be protected by an animal guard.

4.5.2.4.3 All new freshwater dams must be designed with a gated drain pipe for draining the impoundment.

4.5.2.5 Landslide Potential

When locating all hydraulic structures the potential for landslides or slope failures as determined in the initial site investigation shall be evaluated according to Sections 4.6.4.3 and 4.6.5.

4.5.3 Hydrologic Analysis

The hydrologic analysis shall be performed for the spillway and/or surface drainage system. This should include inflow hydrographs, stage storage curves, stage discharge curves and routings. The spillways shall safely discharge that portion of the design storm that is not stored in the reservoir. If a computer analysis is used, only the results of the analysis shall be included.

4.5.4 Hydraulic Analysis

Using accepted engineering practices, a hydraulic analysis must be performed for the spillways and surface drainage system. Typical cross-section design techniques can be used where constant slopes are encountered. All hydraulic structures shall be designed to safely control the velocity to prevent excessive erosion. Accepted engineering practices shall be used to design rip-rap, non-flexible channel linings, bedding and energy dissipators.

4.6 Geotechnical Evaluation

4.6.1 Design Data -- A summary of all geotechnical data determined in the initial site investigation (Section 4.4.2) and used in the analysis shall be included in table or figure form.

4.6.2 Seepage Analyses -- An analysis of seepage and its detrimental effects on structural integrity and on the environment shall be made. The analysis shall include consideration of potential piping in the embankment, foundation, and abutments. Seepage control will be required to insure stability of the embankment and adjacent areas. Drainage systems shall be designed and constructed of an approved material and protected by a properly designed filter zone using accepted geotechnical engineering design practices.

4.6.3 Foundation Stability

When locating dams, the potential for landslides as determined in the initial site investigation shall be evaluated according to Sections 4.6.4.3 and 4.6.5. Potential subsidence and settlement and their consequences must be considered using accepted engineering technology. Special attention should be given to differential settlement which could lead to cracking of the dam. Spillway pipes on compressible foundations must be protected from damage due to settlement. The foundation must have or must be treated to have adequate bearing capacity to support the embankment and any appurtenant works.

4.6.4 Stability Requirements

4.6.4.1 Embankment stability

Slope stability analyses will be required for construction and long term steady state conditions to achieve the following minimum factors of safety:

	Safety Factor
Normal and Maximum Pool Conditions	1.5
End of Construction	1.3
Rapid Drawdown	1.2
Seismic	1.2

4.6.4.2 Appurtenance Structural Stability

Embankments constructed as part of an appurtenant structure must achieve a static factor of safety of 1.5 where failure will lead to a dangerous condition in the dam.

4.6.4.3 Landslides

If landslides noted in the dam site or reservoir areas will 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 landslides shall be corrected to a minimum static factor of safety of 1.5.

4.6.4.4 Special Considerations -- Gravity Structures

4.6.4.4.1 Overturning -- The reaction of all forces must act within the middle one third of the base. Variation to

this requirement may be given if detailed computations prove that overturning will not occur.

4.6.4.4.2 Sliding -- The dam must have a factor of safety against sliding of at least 4.0 for normal loading conditions and 1.5 for maximum loading conditions.

4.6.4.4.3 Bearing -- The factor of safety against bearing failure shall be at least 1.5 for maximum stress at the toe.

4.6.5 Stability Analyses

All slope stability analyses shall be performed using accepted engineering techniques. Exceptions to this requirement will be made only where there is sufficient evidence to indicate that slope failures will not occur.

4.6.6 Liquefaction

The potential for liquefaction must be considered. Safeguards against the development of this condition shall be required.

4.7 Instrumentation

Considerations for installation of instrumentation such as piezometer, settlement markers, slope indicators, and similar monitoring devices shall be included in the plan to monitor present conditions, construction conditions, and to verify design assumptions. A plan for installation, monitoring and maintaining these devices shall also be provided.

4.8 Specifications -- Specifications for site development shall be provided to include as a minimum: clearing and grubbing; soil stockpiles; subdrain construction; slopes; grades; details of surface drainage facilities; spreading and compaction requirements to include lift thicknesses, moisture content and degree of compaction with appropriate compaction curves; material and/or gradation requirements for sub-drainage structures; pipes; concrete; anti-seep mechanisms; channel and slope protection (riprap, etc); installation and reading of monitoring devices; inspection and maintenance; revegetation; blasting safety; construction erosion and sediment control; and cutoff trenches.

4.9 Maps and Drawings

4.9.1 Maps and plans shall be provided showing the site in relation to major highways, county seats, and major drainage. County highway maps may be used for this purpose.

4.9.2 A map showing the limits of the watershed with respect to the site shall be provided. The minimum mapping requirement shall be a 7 1/2 minute USGS map with the site plotted on it.

4.9.3 A plan view of the site shall be provided showing detailed contour intervals (5' maximum) including all disturbed and reservoir areas. Location of springs, seeps, underground mines, mine drainage and/or openings, the subdrain system, project stationing, cross-sections, borings and test pits, instrumentation, reference points and other pertinent data shall be included in the plan view.

4.9.4 Cross-sections of the dam transversely and longitudinally shall be provided showing original ground, sub-drain locations, elevations, benches, spillways, and other pertinent features of the site. A cross-section shall be provided for stability computations showing the site at critical areas with subsurface data plotted.

4.9.5 Cross-section and profiles of major drainage facilities shall be provided. Additional cross-sections shall be taken in all critical areas such as curves and weak areas.

4.9.6 Construction drawings shall be provided for subdrains, spillways, anti-seep mechanisms, and other pertinent structures.

4.10 Removal/Elimination

Removal of a dam shall consist of the total elimination of its impounding capabilities in a safe and approved manner by one of the following methods:

4.10.1 Removal of the Embankment

The embankment shall be completely removed to approximate original contour. A plan and timetable for removal shall be submitted.

4.10.2 Elimination of Impoundment

The reservoir area shall be completely filled with suitable material in such a manner that will create a fill with a minimum long term static factor of safety of 1.5 unless otherwise approved by the Director. A plan and timetable for the modification shall be submitted.

4.10.3 Breaching

4.10.3.1 The embankment shall be breached with a design channel having the capacity to carry the peak runoff from the design storm corresponding to the dam's hazard classification. Channel protection shall be provided at least to a flow depth equal to the 100 year, 6 hour duration storm.

4.10.3.2 Plans for removal shall be submitted which include a schedule for implementation.

Section 5. Performance Standards

5.1 Site Preparation

5.1.1 Sediment Control

Approved sediment control facilities shall be installed prior to clearing and grubbing.

5.1.2 Clearing and Grubbing

Clearing and grubbing must be performed in foundation, borrow and soil stockpile areas. Clearing is required in the maximum permanent pool area unless otherwise approved.

5.1.3 Foundation Preparation

Preparation shall include installation of keyways and subdrains, removal of soft areas and similar site preparation operations dictated by the approved plan and site conditions. The foundation shall be inspected by the Director prior to placement of embankment materials.

5.2 Construction

5.2.1 Placement of Materials

5.2.1.1 All fill must be placed in accordance with the approved plans and specifications for the particular site.

5.2.1.2 Compaction testing shall be done as dictated by design requirements and reported according to Sections 7.1 and 7.2.

5.2.1.3 Drainage blankets, etc., shall be constructed in accordance with the approved plan. Filter material shall be tested for compliance with design gradations and results submitted according to Sections 7.1 and 7.2. Drainage materials shall be placed in such a way as to prevent segregation and contamination. Concurrent covering of drainage facilities shall be done to prevent contamination or damage.

5.2.1.4 Grading

5.2.1.4.1 The working surface and outslopes of the fill shall be concurrently graded through all phases of embankment construction.

5.2.1.4.2 The top of the fill shall be crowned to provide positive drainage during construction.

5.2.1.4.3 In all cases final grading shall be conducted in such a manner as to follow approved plans and to provide a surface for vegetation.

5.2.1.4.4 Erosion control measures shall be implemented during construction to prevent excessive erosion.

5.2.2 Spillways and Appurtenances

5.2.2.1 Spillways and appurtenances shall be constructed according to the approved plans and specifications. Any changes and/or modifications must be approved by the Director of the Division of Oil and Gas of the Department of Energy prior to implementation.

5.2.2.2 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.

5.2.2.3 All rip-rap material shall be of hard, durable rock which is not acid-forming or toxic. Rip-rap shall be placed to prevent size segregation.

5.2.2.4 When bedding is used under rip-rap, the rock material shall be placed in a manner so as not to damage or contaminate the bedding.

5.2.2.5 When protective channel linings are required, the linings shall be installed as soon as the channel is constructed to grade according to the approved plans.

5.2.2.6 When concrete is used in construction of spillways and appurtenances, standard forming or placement techniques shall be used where necessary. The concrete shall be placed and cured in accordance with accepted engineering standards. Standard engineering tests shall be performed to insure that the concrete meets the design specifications and shall be reported in accordance with Sections 7.1 and 7.2.

5.2.2.7 All pipes, risers, and appurtenances shall be installed according to the approved plans. Sufficient compaction testing shall be performed and reported according to Sections 7.1 and 7.2 to insure that fill material around pipes and appurtenances has been placed according to the approved plan. Sufficient fill shall be placed over pipes to prevent damage by heavy equipment.

5.3 Operation and Maintenance

5.3.1 All spillways and appurtenances shall be maintained to operate according to the design plans and specifications.

5.3.2 Routine maintenance of spillways shall be performed. Maintenance shall include removal of sediment, brush, trees, rocks, rocks in stilling basins, and re-establishment of the structure to its original hydraulic design.

5.3.3 All failures resulting from landslides or slope failures must be corrected immediately if they significantly affect the safety or design capacity of the dam or its appurtenances. Failures must be reported to the Director of the Division of Oil and Gas of the Department of Energy.

5.3.4 Routine inspections shall be made of all hydraulic structures to insure proper operation. Special inspections shall be conducted whenever a significant flow through the structures has occurred.

5.3.5 All pipes must be repaired or replaced when damaged, distorted, or otherwise fail to function properly according to the approved design.

5.3.6 Leakage through joints, fissures, cracks through or under the spillway channel shall be immediately investigated and repaired.

5.3.7 If erosion on the embankment face or abutments occurs, the area must be regraded and be provided with adequate drainage control and/or revegetation to prevent future occurrences.

5.3.8 All gates must be serviced and operated at least annually to insure proper functioning.

5.3.9 All concrete structures and channel listings must be maintained according to design and specifications.

5.3.10 Access roads must be maintained to insure access for emergency inspections.

5.3.11 The embankment shall be kept clear of trees and shrubs.

5.3.12 The embankment shall be kept clear of burrowing animals.

5.3.13 All monitoring devices shall be routinely inspected and repaired or replaced as necessary to insure proper functioning of the devices.

Section 6. Inspection and Quality Control

6.1 Inspection During Construction

6.1.1 Plans, specifications and all previous inspection reports shall be available at the construction site office for reference by construction personnel and the Director of the Division of Oil and Gas of the Department of Energy.

6.1.2 A visual inspection for construction progress, determination of unstable conditions, conformance with plans, and quality control shall be held at least once every seven days, or more frequently as specified by the design engineer. The inspection shall be done by a registered engineer or a person under the

direct supervision of the registered engineer. Inspections shall be held after heavy rainfall events to determine problems and remedial measures. Piezometers shall be monitored every seven days unless otherwise stated in the approved plan. This schedule may be changed by the Director of the Division of Oil and Gas of the Department of Energy depending on specific site conditions.

6.2 Inspection of Completed Dams -- Until proper performance of the structure is evidenced, the dam and appurtenances shall be inspected annually by an engineer(s) experienced in this respect. Should a storm of record occur (i.e. greater than or equal to a 100 year, 6 hour duration storm), a similar inspection shall be held. The inspection shall consider seepage, bulges, scarps, vertical displacement, excessive erosion, piping, maintenance deficiencies or other visual factors which could indicate potential failure of the embankment, spillways or appurtenances. Once proper performance of the structure is evidenced, the dam should be inspected at least once every two years by an engineer experienced in this respect. The inspection should include all items considered during the annual inspection.

6.3 Inspections of Dams with Serious Problems -- Inspections shall be held by an engineer at least once per month, or more often as required by the Director of the Division of Oil and Gas of the Department of Energy based on site conditions. The inspection shall consider steepness of 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 and other appurtenances.

Section 7. Reporting Requirements

7.1 Monthly Progress Reports During Construction -- A written report containing results of inspection of construction progress shall be submitted by the owner every month. the report shall include but not be limited to a summary of instrumentation data, testing data, freeboard, crest elevation, water surface elevation, and specific construction problems. Upon completion of construction, notice shall be given to the Director of the Division of Oil and Gas of the Department of Energy.

7.2 Post Construction Inspection Reports -- A report shall be submitted by the owner reporting the findings of the inspection required in Section 6.2. Certification by an engineer

shall be submitted with the inspection report that: (1) the dam and its appurtenances were constructed in general accordance with approved plans and specifications and (2) the dam and appurtenances are functioning as designed.

7.3 Monthly Inspection Reports for Dams Under Construction with Serious Problems -- A written report containing observations of the inspection required in Section 6.3 shall be submitted at least once per month.

7.4 Emergency Procedures

7.4.1 Should a dangerous condition develop which is dangerous to human life, property, or the environment, the Director of the Division of Oil and Gas of the Department of Energy shall be informed immediately. The owner shall immediately take any remedial action necessary to protect life and property. Emergency procedures developed in accordance with Section 4.2 shall be implemented to protect life and property downstream. The site shall be inspected and monitored at least once every eight hours until the emergency situation is alleviated. Continuous monitoring may be required by the Director of Oil and Gas of the Department of Energy when there is an imminent danger to the health or safety of the public.

7.4.2 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. This evaluation and plan shall be submitted to and approved by the Division of Oil and Gas of the Department of Energy prior to implementation.

PREAMBLE TO THE PROPOSED RULES
OF THE DEPARTMENT OF ENERGY, DIVISION OF OIL AND GAS

I. Legal authority

II. Background

III. Proposed rules

A. Series 1 - Oil and Gas Wells and Other Wells
B. Series 2 - Certification of Gas Wells
C. Series 3 - Underground Injection Control
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IV. Solicitation of Comments

I. LEGAL AUTHORITY

The regulations described in this notice are proposed under the authority of Chapters 22 and 22B of The West Virginia Energy Act.

II. BACKGROUND

On April 12, 1985, the West Virginia Legislature passed The West Virginia Energy Act making it effective 90 days from passage (July 11, 1985). The Act is codified at W.Va. Code §§22-1-1 through 22-13-3; 22A-1-1 through 22A-6-6; and 22B-1-1 through 22B-4-13 (1985 Repl. Vol.). In passing The West Virginia Energy Act, the Legislature found that there was need for the consolidation of regulatory power under a single department of state government to, among other things, achieve "more efficient administration, avoid unnecessary delays in permitting and other matters, provide better and more expeditious enforcement and

application of environmental and safety laws" with a view towards making the state's mineral development industry "more competitive with that in other energy producing states." W.Va. Code §22-1-2 (1985 Repl. Vol.).

In that Act, the Legislature found the public policy of the State to be:

> (a) To foster, encourage and promote the exploration for and the development, production, utilization and conservation of coal, oil and gas and other mineral resources of the state through the fullest practical means, and at the same time promote economic development in the state, protect the environment and enhance safety and health in these vital industries;
>
> (b) To provide a comprehensive program for the exploration, conservation, development protection, enjoyment, recovery and use of coal, oil and gas, and other mineral resources in this state;
>
> (c) To aid in such a comprehensive program by creating a single department, designated the department of energy, to have the regulatory powers with respect to this industry and to have the general duties and responsibilities heretofore existing in the department of natural resources and department of mines, and that the department will perform such duties and functions in conjunction with the respective boards and commissions which are herein continued in effect;
>
> (d) To expedite and facilitate the issuance of permits for mines, surface mining operations, oil and gas wells and other well work; to avoid conflicting permitting requirements and regulations in this state or with federal agencies; and to provide uniform policies with respect to this industry;
>
> (e) To provide for a single agency of this state to implement requirements and programs of federal law affecting the exploration, development, production, recovery and

> utilization of coal, oil and gas, and other mineral resources in this state;
>
> (f) To provide for an agency of this state which can be consulted with by other agencies of this state prior to the adoption or implementation of rules, regulations, standards, programs or requirements affecting the exploration, development, production, recovery and utilization of coal, oil and gas, and other mineral resources in this state.

W.Va. Code §22-1-2 (1985 Repl. Vol.).

The West Virginia Energy Act vested exclusive jurisdiction in the Department of Energy over the issuance of regulations or any and all permits and other governmental authorizations required, or to be required, in all matters pertaining to the exploration, development, production, storage and recovery of coal, oil and gas and other mineral resources including all safety, conservation, land, water, waste disposal, reclamation and environmental regulations, permits and authorizations related to such activities as are called for pursuant to the following statutes:

W.Va. Code 20-5 (Water Resources)

W.Va. Code 20-5A (Water Pollution Control Act)

W.Va. Code 20-5D (Dam Control Act)

W.Va. Code 20-5F (Solid Waste Management Act)

The Department of Energy was specially designated to be the lead regulatory agency for West Virginia for purposes of federal legislation relating to such activities. In addition, the Department of Energy was empowered with the responsibility for

implementing certain provisions of the State Hazardous Waste Management Act, W.Va. Code 20-5E-1 through 23 (1985 Repl. Vol.).

Beyond these general requirements, Chapter 22B of The West Virginia Energy Act establishes a broad range of regulatory requirements impacting on the oil and gas industry and related matters. Many of the provisions in Chapter 22B were previously within the jurisdiction of the former Department of Mines. Other provisions were previously within the jurisdiction of the Department of Natural Resources. The regulations of other agencies are superseded, in part, as of July 11, 1985 (the effective date of the Energy Act) to the extent that those regulations conflict with the regulatory authority of the Department of Energy.

Under The West Virginia Energy Act, the Director of the Division of Oil and Gas is given the general power to propose or promulgate rules and regulations; however, the Director is obligated to submit his final action to the Commissioner of the Department of Energy for approval prior to the filing of any such regulations with the Legislative Rule-Making Review Committee.

There are several bases for the jurisdiction vested in the Department of Energy by The West Virginia Energy Act to implement the five designated environmental statutes identified above and found in Chapter 20 of the West Virginia Code. The Department's jurisdiction in this area is primarily established by W.Va. Code §22-1-16 (1985 Repl. Vol.).

> Except as otherwise expressly provided in this chapter or in chapters twenty-two-a or twenty-two-b of this code, jurisdiction over the issuance of regulations, or any and all permits and other governmental authorizations required or to be required in all matters

> pertaining to the exploration, development, production, storage and recovery of coal, oil and gas, and other mineral resources in this state, including all safety, conservation, land, water, waste disposal, reclamation and environmental regulations, permits and authorizations called for pursuant to articles five, five-a, five-d, and five-f, chapter twenty of this code, and the enforcement and implementation thereof is vested exclusively in the department of energy. The department of energy is hereby designated as the lead regulatory agency for this state for all purposes of federal legislation relating to such activities.

W.Va. Code §22-1-16. (1985 Repl. Vol.)

Additionally, the Department of Energy was empowered with the responsibility for implementing certain provisions of W.Va. Code §20-5E relating to the State Hazardous Waste Management Act. W.Va. Code §20-5E-7(h) provides, in relevant part, that:

> (h) To the extent that this article relates to activities with respect to oil and gas wells, liquid injection wells and waste disposal wells now regulated by articles four, four-b and seven, chapter twenty-two of this code, the administrator of the office of oil and gas and the shallow gas well review board has the jurisdiction with respect to the regulation of such activities and shall promulgate such rules and regulations as may be necessary to comply with the requirements of this article.

W.Va. Code §20-5E-7(h)(1985 Repl. Vol.).

Finally, other provisions of the West Virginia Energy Act clearly provide that specific activities are within the scope of jurisdiction of the Department of Energy.

The Department believes that each of the three previously mentioned bases of jurisdiction has a definite scope which authorizes regulation (through rules, permits, or other governmental authorizations), certain activities carried on in this

State. In order to better facilitate the understanding of the regulated community and the public, a more complete discussion of the scope of the Department's jurisdiction is set forth below.

"Exploration, Development, Production, Storage and Recovery" - In defining the scope of the jurisdiction of the Department of Energy, an interpretation of the phrase "exploration, development, production, storage and recovery of . . . oil and gas, and other mineral resources in this State" is essential. There appear to be two distinct sources for the phrase "exploration, development, production storage and recovery."

The terms "exploration, development, production" appear to have been taken from the State Hazardous Waste Management Act, W.Va. Code §20-5E-1 through 23 (1985 Repl. Vol.). That Act exempts from the coverage of its provisions, pending satisfactory completion of certain conditions precedent, "drilling fluids, produced waters and other wastes associated with the exploration, development or production of crude oil or natural gas or geothermal energy." W.Va. Code §20-5E-6(a)(2)(A) (iv) (1985 Repl. Vol.) (emphasis added). An analysis of the comparable federal provisions found in sections 3001(b)(2)(A) and 8002(m) of the Resource Conservation and Recovery Act, 42 U.S.C.S. §6901 et seq. (1982 & 1985 Cumm. Supp.) ["RCRA"] (after which the State provisions were obviously modeled) indicates, in addition to excluding drilling fluids and produced waters from regulation, that a specific universe of wastes was contemplated within the terms "other wastes associated with the exploration,

development or production of crude oil or natural gas or geothermal energy."

> The term 'other wastes associated' is specifically included to designate waste materials intrinsically derived from the primary field operations associated with the exploration, development or production of crude oil, natural gas, or geothermal energy. It should cover such substances as: Hydrocarbon bearing soil in and around the related facilities; drill cuttings; materials (such as hydrocarbons, water, sand and emulsion) produced from a well in conjunction with crude oil, natural gas, or geothermal energy; and the accumulated material (such as hydrocarbon, water, sand and emulsion) from production separators, fluid testing vessels, storage vessels and production impoundments.
>
> The phrase 'intrinsically derived from the primary field operations . . . ' is intended to differentiate exploration, development and production operations from transportation (from the point of custody transfer or of production separation and dehydration) and manufacturing operations.

H. Conf. Rep. No. 96-1444, 96th Cong., reprinted in 1980 U.S. Code Cong. & Ad. News 5019, 5031.

EPA has recently offered one possible interpretation of the scope of the terms "exploration, development or production of crude oil or natural gas or geothermal energy" in its draft sampling strategy for completion for the study required by section 8002(m) of RCRA. Office of Water Regulations and Standards-Industrial Technology Division, U.S.E.P.A., Oil and Gas Exploration, Development and Production - Sampling Strategy - Draft (May 5, 1986) [hereinafter "Draft Sampling Strategy"].

> According to legislative history for the 1980 RCRA amendments, Congress intended to exempt only those waste streams associated with exploration, development, and production activities for oil and gas, and for

geothermal resources. Wastes generated from the transportation of oil, gas, or geothermal fluids, from natural gas processing, or from oil refining would not be considered to be within the scope of the exemption. Based on the legislative history, EPA interprets the exemption to include only those waste streams generated from exploration, development, and production of oil and geothermal resources.

Some of the waste streams include:

- drilling fluids
- well treatment fluids
- completion fluids
- workover fluids
- produced water
- produced sand
- tank bottom sludges

However for the oil and gas extraction industry, the exemption is not interpreted to include those wastes produced from pipelines (for example, from hydrostatic testing or from pipeline operations). Nor does the exemption include waste streams from gas processing facilities (for example, spent iron sponge).

Draft Sampling Strategy at 12.

EPA then went on to further elaborate on the scope of the terms "exploration and development" and "production."

Exploration and development activities for the extraction of oil and gas include work necessary to locate, drill, stimulate, and complete wells.

* * *

Production activities include all post-completion work necessary to bring hydrocarbon reserves or geothermal fluids from the producing formation(s) to the point of transmission. These activities include basic oil/water/sediment separation, separation of gas liquids from natural gas, gas dehydration, pumping, collection, storage, and other production practices.

Draft Sampling Stragegy at 13, 15.

The Division will interpret the terms "exploration, development, production" as conferring on it the jurisdiction to regulate the following sources related to activities carried forth pursuant to W.Va. Code §§20-5; 20-5A; 20-5D; and 20-5F:

1. The exploration, development and production of oil up to the point of custody transfer at the metering unit;

2. The exploration, development and production of gas up to the point of entry into the transmission line.

Additionally, the Energy Act also includes the terms "storage and recovery" in defining the agency's jurisdiction over these programs. This language clearly recognizes the Department of Energy's expressed authority to regulate the storage of gas in underground storage reservoirs and the subsequent operation of recovering the stored gas from the reservoir.

West Virginia Hazardous Waste Management Act - As previously noted, W.Va. Code §20-5E-7(h) vests regulatory jurisdiction over hazardous waste activities relating to oil and gas wells, liquid injection wells and waste disposal wells regulated, at that time, by the Administrator of the Office of Oil and Gas and the Shallow Gas-Well Review Board. Because The West Virginia Energy Act replaced the Administrator of the Office of Oil and Gas with the Director of the Division of Oil and Gas, the Director now has the regulatory authority formerly given to the Administrator by that provision. The Division interprets this language as conferring jurisdiction on it in the following areas:

1. Should it be necessary at some point in the future for "drilling fluids, produced waters and other wastes associated with the exploration, development or production of crude oil or natural gas or geothermal energy" to be regulated as a hazardous waste following action by U.S.EPA, and both houses of Congress, and declaration by the Governor [pursuant to W.Va. Code §20-5E-6(a)(2)(A)], it will be the responsibility of the Division to determine how such wastes will be identified or listed as hazardous waste and how such wastes will be managed;

2. To the extent that it is appropriate to regulate under the state Hazardous Waste Management Act any waste associated with the storage and recovery of gas, that regulation will be undertaken by the Division; and

3. Class I and Class IV wells under the State Underground Injection Control Program (Series 3 of these proposed rules) would be appropriately regulated by the Department of Energy, if such wells are related to the disposal of hazardous waste associated with the wastes described in paragraphs 1. and 2. above.

Other Specific Statutory Provisions Vesting Jurisdiction in the Department of Energy - Remaining terms of The West Virginia Energy Act also make it clear that the following activities, among others, are within the scope of jurisdiction of the Division:

1. Transportation of Oils, W.Va. Code §22B-3;

2. Underground Gas Storage Reservoirs, W.Va. Code §22B-4.

III. PROPOSED RULES

A. Series 1 - Oil and Gas Wells and Other Wells

This series is based upon regulations of the former Department of Mines relating to this topic. The previous regulations have been edited to the extent necessary to reflect the enactment of The West Virginia Energy Act which, among other things, repealed W.Va. Code §22-4 and enacted new articles. Thus, cross-reference have been updated, as well as authority sections. Textual revisions have been made, where appropriate, to create consistency and clarity in the use of language, particularly where technical criteria are defined. Regulations governing hearing and appeal procedures, formerly found in Series 1 of the Department of Mines regulation, have been deleted from this proposed Series 1 and are now contained in the proposed Series 9 rules, Hearing and Appeal Procedures.

In addition to these technical and editing changes, the proposed Series 1 differs from the previous rule in two principal areas.

Section 5, among other things, details requirements related to the designation of operator agents for service of process and notice to the Director of ownership and transfer of title by well owners. The proposed rule provides for designation of agents of operators for purposes of service of process, and requires notice of each change of well ownership and designation of an agent by the transferee operator. The rule encourages designation of a successor agent as an integral part of any well

transfer transaction by providing that the bond furnished by the transferor will not be released until designation of a successor agent for service has been made by the new owner.

Section 10 pertains to the furnishing of bonds with a corporate surety, cash or alternative collateral security required pursuant to The West Virginia Energy Act. The section now addresses the sufficiency of bonds furnished prior to July 11, 1985, in certain cases, and making provisions for additional surety or security with applications where single well or blanket bonds in effect do not meet current requirements and new work is proposed.

In Section 15.1.1 the Division proposes to allow the annual report of oil and gas production to be filed on a report form or in any other form authorized by the Director. This change should facilitate the use of electronic data transfer where the operator has that capability.

Section 16.5.2 is proposed to be changed by deleting the absolute prohibition against the discharge of salt water into fresh water. This change is necessitated by the development of discharge permits which regulate this discharge in a way that assures compliance with technology based and water quality based criteria.

Finally, the Division proposes to add a new section that would allow the Director to address site specific circumstances by deviating from generally applicable requirements in certain cases.

B. Series 2 - Certification of Gas Wells

The Natural Gas Policy Act of 1978, 15 U.S.C.S. §3301 et seq. (1982), was signed into law on November 9, 1978. Pursuant to the provisions of that statute and the regulations promulgated by the Federal Energy Regulatory Commission, various states are permitted to make findings as to certain classes of natural gas wells located within the state. As successor to the former Office of Oil and Gas of the Department of Mines, the Division of Oil and Gas has been authorized to act as the jurisdictional agency for the State to implement the requirements of the Natural Gas Policy Act of 1978.

Series 2 governs and applies to proceedings under W.Va. Code §22B-1-2(c)(11) (1985 Repl. Vol.) concerning gas wells and implementation of the Natural Gas Policy Act of 1978 and pertinent federal regulations.

The proposed Series 2 is based upon a regulation of the former Department of Mines. Series 2 has been edited to the extent necessary to reflect the enactment of The West Virginia Energy Act. This editing of former Part II (now proposed Series 2) required renumbering of sections. In this connection, the former Regulation 36 has been combined with the former Regulations 14 and 24 of Part I and included in Series 4 of these proposed rules.

C. Series 3 - Underground Injection Control

Title XIV of the Public Health Service Act, known commonly as the Safe Drinking Water Act, 42 U.S.C.S. §300f et seq. (1982), requires, among other things, that the EPA

Administrator issue regulations establishing minimum requirements for the regulation of the injection of fluids in order to protect underground sources of drinking water. The Safe Drinking Water Act provides further that states may develop programs known as State Underground Injection Control ["UIC"] Programs based on federally established regulations. If a state program is judged to be "as stringent as" the federal program, a state may obtain primacy for that program and become responsible for its subsequent implementation and enforcement.

In West Virginia, prior to 1985, the State Water Resources Board served as the sole authority for the promulgation of rules and regulations for the control of the State UIC program. West Virginia received delegation of the federal UIC program, effective January 9, 1984. 48 Fed. Reg. 55127 (Dec. 9, 1983). The current version of the Water Resources Board's UIC regulations were filed as emergency regulations on January 6, 1986. Those regulations list as authority for their promulgation, W.Va. Code §20-5A-3(b)(2), which refers generally to the power and authority of that Board to adopt regulations for the prevention, control, and abatement of pollution and to facilitate the State's participation in the National Pollutant Discharge Elimination System under the federal Clean Water Act. Authority for the Department of Natural Resources to issue permits for underground injection wells can be found in W.Va. Code §20-5A-5(b)(7), which provides, in pertinent part, that:

> (b) It shall be unlawful for any person, unless he holds a permit therefor from the department, which is in full force and effect, to:

* * *

> (7) Operate any disposal well for the injection or reinjection underground of any industrial wastes, including, but not limited to, liquids or gases, or convert any well into such a disposal well or plug or abandon any such disposal well.

W.Va. Code §20-5A-5(b)(7) (1985 Repl. Vol.).

The sole authority of the State Water Resources Board to promulgate regulations and of the Department of Natural Resources to issue permits concerning the underground injection into wells of wastes associated with the exploration, development, production, storage and recovery of oil and gas and related minerals was superceded by the passage of The West Virginia Energy Act. The Energy Act has, as one of its declared purposes:

> (e) To provide for a single agency of this state to implement requirements of programs of federal law affecting the exploration, development, production, recovery and utilization of coal, oil and gas, and other mineral resources in this state. . . .

W.Va. Code §22-1-2(e) (1985 Repl. Vol.).

The Department of Energy is to play a lead role in the new regulatory scheme. This is clearly contemplated by W.Va. Code §22-1-6, which provides, in pertinent part, as follows:

> Except as otherwise expressly provided in this chapter or in chapters twenty-two-a or twenty-two-b of this code, jurisdiction over the issuance of regulations, or any and all permits and other governmental authorizations required or to be required in all matters pertaining to the exploration, development, production, storage and recovery of coal, oil and gas, and other mineral resources in this state including all safety, conservation, land, water, waste disposal, reclamation and environmental regulations, permits and authorizations of such activities called for pursuant to articles five, five-a, five-d,

> and five-f, chapter 20 of this code, and the enforcement and implementation thereof is vested exclusively in the Department of Energy. The Department of Energy is hereby designated as the lead regulatory agency for this state for all purposes of federal legislation relating to such activities.

W.Va. Code §22-1-16 (1985 Repl. Vol.) (emphasis added).

The assumption of the State UIC program by the Department of Energy's Division of Oil and Gas is specifically supported by several statutory provisions found in Chapter 22B of the Energy Act. The Director of the Division of Oil and Gas is required to adopt rules and regulations to assure that the regulations, permits and authorizations issued by the Director are adequate to satisfy the purposes of the Energy Act, particularly with respect to the consolidation of the various state and federal programs which place permitting requirements on the exploration, development, production, storage and recovery of the state's oil and gas. W.Va. Code §22B-1-2(c)(16) (1985 Repl. Vol.).

Additionally, the Director is required to perform such acts as may be necessary or appropriate to secure to the state the benefits of federal legislation establishing programs relating to the exploration, development, production, storage, and recovery of the state's oil and gas, which programs are assumable by the state. W.Va. Code §22B-1-2(c)(17) (1985 Repl. Vol.).

Finally, as it relates to any person conducting activities which are subject to the jurisdiction of the Division of Oil and Gas, the Director is empowered to issue water pollution control permits for the operation of any disposal well for the

injection or reinjection underground of any pollutant, including, but not limited to, liquids or gases, or convert any well into such a disposal well or plug or abandon any such disposal well. W.Va. Code §22B-1-7(b)(6) (1985 Repl. Vol.).

Specific provisions on the drilling of wells for the introduction of liquids to recover oil or for the introduction of liquids for the disposal of pollutants or effluent therefrom and for converting any existing well for such purposes are found in W.Va. Code §22B-1-14 (1985 Repl. Vol.). This section requires the issuance of a permit to drill or convert such wells contingent upon compliance with all of the bonding provisions found in W.Va. Code §22B-1-12 (1985 Repl. Vol.). The well operator additionally must provide a plat prepared by a registered engineer or licensed land surveyor indicating certain statutorily required information. When a well is proposed to be drilled or converted for the purpose, as provided for in W.Va. Code §22B-1-14, and the wells are located above a seam of coal, certain other limitations apply. These limitations are set forth in W.Va. Code §22B-1-16 (1985 Repl. Vol.).

Additional authority for the regulation by the Department of Energy of underground injection wells which inject hazardous waste from oil and gas activities may be found in the State Hazardous Waste Management Act, W.Va. Code §20-5E-1 et seq. (1985 Repl. Vol.). W.Va. Code §20-5E-7(h) provides, in pertinent part, as follows:

> (h) To the extent that this article relates to activities with respect to oil and gas wells, liquid injection wells and waste disposal wells now regulated by articles

> four, four-b and seven [§§22-4-1 et seq.; repealed; 22-4B-1 et seq.; repealed; 22-7-1 et. seq.; repealed], chapter twenty-two of this code, the administrator of the office of oil and gas and the shallow gas-well review board has the jurisdiction with respect to the regulation of such activities and shall promulgate such rules and regulations as may be necessary to comply with the requirements of this article.

The Department of Energy interprets this language as vesting jurisdiction in itself to regulate those wells which inject hazardous waste from facilities relating to the "exploration, development, production, storage and recovery of coal, oil and gas and other mineral resources." A more detailed explanation of this phrase, which defines the scope of the Department of Energy's regulatory jurisdiction in W.Va. Code §22-1-16 (1985 Repl. Vol.), is found in Part II of this Premable.

It is clear from a review of the previously cited statutory authority that the Division has authority to regulate the great majority of underground injection wells that are presently classified under the existing Series IX regulations of the State Water Resources Board to the extent that those wells, are related to the "exploration, development, production, storage and recovery" of oil and gas and other mineral resources in this State. Under the system of classification used by the Water Resources Board, injection wells are categorized into five classes of wells. These detailed classifications are presently found in Section 4, Series IX of the Board's regulations. An examination of the descriptions of the underground injection wells covered by the State program at the present time indicates

that the great majority of wells in those categories effect the exploration, development, production, storage and recovery of oil and gas and other mineral resources in West Virginia. Under this classification system, it is clear that all Class II and Class III wells fall into this category. Additionally, certain injection wells described in Class I also fall within this description, most specifically those injection wells described in subsections 4.5.b, 4.5.d, 4.5.f, 4.5.g, 4.5.h, and 4.5.j. Finally, those wells in Classes I and IV which inject hazardous waste from mineral resource facilities and those wells in Class V related to mineral resource facilities would also fall under the jurisdiction of the Department of Energy. In short, those wells remaining within the clear jurisdiction of the Department of Natural Resources (DNR) and the Water Resources Board (WRB) would only be a very narrow portion of Class I, IV and V wells unrelated to the exploration, development, production, storage and recovery of oil and gas and other mineral resources in the State. Even those wells that would remain within the jurisdiction of DNR and WRB would be required to obtain permits from DOE under other authority.

The United States Environmental Protection Agency has promulgated regulations on state underground injection control program requirements in 40 C.F.R. Part 145, which relate to the assumption of primacy by states of the underground injection control program. Under the provisions of these regulations, the Agency does not require that authority for state programs reside in a single agency. However, 40 C.F.R. §145.23(b) provides that

if more than one agency is responsible for the administration of the UIC program, each agency must have statewide jurisdiction over a class of activities. The responsibilities of each agency must be delineated, their procedures for coordination set forth, and an agency may be designated as a "lead agency" to facilitate communications between EPA and the various state agencies having program responsibilities. Any state seeking to administer the UIC program must submit a Memorandum of Agreement to EPA for approval. 40 C.F.R. §145.25. The West Virginia Energy Act designates the Department of Energy to be the "lead agency" in the formation and implementation of the State Underground Injection Control Program. Accordingly, these proposed regulations constitute the first step in the assumption of that role. The proposed regulations reflect the adoption of a regulatory scheme for the control of underground injection wells designed to maintain primacy. The concept of incorporation by reference has been used throughout the regulations as a mechanism to assure a more efficient and simple program, from the viewpoint of the regulated community, the Division of Oil and Gas and the public at large. Where provisions are different from, or in addition to, the federal program have been deemed desirable, those provisions have been included in the proposed rule.

The proposed UIC regulations generally incorporate by reference federal language or set forth separately language of the existing UIC regulations of the Water Resources Board where no comparable federal language exists. In two instances, however, language is being proposed by the Director which has no

counterpart in either the federal or Water Resources Board UIC regulations.

First, proposed section 17.4.6 provides that only one permit shall be issued for the construction and operation of any underground injection well covered by the Department of Energy's regulations. Operation of the well shall be conditioned only upon a subsequent mechanical integrity test. This provision was included in the proposed regulations to make it clear that issuance of the UIC permit constitutes approval to commence operation of the well, subject only to acceptable results as a mechanical integrity test.

Second, proposed section 17.4.7 provides that injection pressures at levels up to 90% of the fracture pressure of the injection zone will be allowed in the operation of the well. Injection at pressures in excess of 90% may be approved at the Director's discretion on a case-by-case demonstration by the applicant.

D. Series 4 - State National Pollutant Discharge Elimination System (NPDES)

This series governs the State National Pollutant Discharge Elimination System (NPDES) Program for all facilities and activities affecting the exploration, development, production, storage and recovery of oil and gas, and related mineral resources for point source discharges to surface waters of the State. It is recognized that the Director of the Division of Oil and Gas also has authority to issue other types of water pollution control permits pursuant to W.Va. Code §22B-1-7. These

Series 4 regulations, however, deal with NPDES requirements necessary for the delegation of that program from EPA to the Division of Oil and Gas as outlined in 40 C.F.R. Part 123.

Similar NPDES regulations of the State Water Resources Board were continued in effect by The West Virginia Energy Act until the Division promulgated superseding regulations. These proposed regulations are part of the transition from the Division of Water Resources of the Department of Natural Resources to the Division of Oil and Gas of the Department of Energy for purposes of permit issuance.

The NPDES program implements provisions of the federal Clean Water Act. In order to administer and enforce that program in lieu of EPA, it is necessary that the Division of Oil and Gas promulgate regulations which must be approved by EPA to delegate the program to West Virginia for these point sources.

The proposed regulations essentially incorporate by reference all of the EPA regulations which are necessary to achieve delegation of the NPDES program for the oil and gas industry. Some provisions, which are fully set out in the text of the proposed regulations, differ from the federal regulations or are in addition to those federal regulations, where state law requires deviations. Also, some additional provisions have been included which increase the flexibility of the Director in administering the permit program to take account of fact-specific cases or to deal with areas of regulatory control or permit conditions which have no counterpart EPA regulations, but which

serve to improve the State program. Set forth below are significant features of the proposed regulations.

1. Continuation of expiring permits - The provisions of Section 3.2.4 are modeled on the Water Resources Board rules and W.Va. Code §20-5A-7 which statutorily limits the amount of time a permit can be extended.

2. Confidentiality - EPA has extensive confidentiality regulations in 40 C.F.R. Part 2; however, the Division's proposed rules in Section 3.3 are simple, brief and tied to our State Freedom of Information Act which protects trade secrets. EPA does not at present require adoption of its 40 C.F.R. Part 2 rules for program delegation. The Division's proposed confidentiality rule is similar to that of the Water Resources Board.

3. Separate storm sewers - The existing storm water provisions of the Water Resources Board have been used in these proposed rules in Section 4.3. U.S. EPA's rules are currently in litigation and may well change. The Division will review this requirement in the future when U.S. EPA's rule becomes more certain.

4. Inspection and entry - These provisions in Section 5.3 are more limited than EPA's to conform the rules to state law, W.Va. Code §20-5A-3(d). See 40 C.F.R. §122.41(i).

5. Analytical variability - Sections 5.5 and 6.6.1 recognize the obligation of the permittee to certify as accurate test results which inherently contain analytical variability.

The proposed rule sets forth a mechanism to take this into account in the Division's regulatory program.

6. Real time water quality control - Section 6.2.1 recognizes the control technique of flow management to meet water quality criteria and sets out rules by which toxicity testing and limits may be imposed. The Division's provision includes additional requirements establishing when toxicity testing may be imposed and when water-quality based limits should be imposed. These new provisions are consistent with U.S. EPA's policy on water-quality based permit limits for toxicity pollutants (47 Fed. Reg. 9016-19, Mar. 9, 1984) which recognizes the need for a threshold test on toxicity monitoring and points out that the primary focus of toxicity monitoring should be the protection of the receiving stream.

7. Schedules of compliance - The proposed rules in Section 6.5.1 specifically refer to W.Va. Code §20-5A-7 which deals with when phased abatement may be allowed under state law. This authority is in addition to the provisions incorporated by reference in 40 C.F.R. 122.47.

8. Issuance and effective date of permit - Section 8.11 is in conformity with EPA rules establishing the effective date of a permit but would also allow an earlier effective date if the permittee so requests (less than 30 days).

9. Emergency permit modifications and temporary permits - Section 8.21 provides for an emergency or temporary permit (up to 6 months) and would allow them to be issued for experimental practices. These new provisions would enhance

the Director's regulatory flexibility and allow limited duration permits for special needs.

E. Series 5 - Special Water Pollution Control

This series consists of a number of miscellaneous regulations which relate to the control of water pollution. Initially, the subject matter for each section was derived from counterpart regulations of the State Water Resources Board.

Section 3 of the proposed regulations contains requirements for reporting certain spills and accidental discharges to waters of the State from facilities operated in connection with the exploration, development, production, storage and recovery of oil and gas and related mineral resources in this State. This section requires reporting in three different instances:

(1) Where reporting is required under Section 311 of the federal Clean Water Act;

(2) Where effluent limitations established in any oil and gas general permits are exceeded as a result of an upset or bypass;

(3) Where a pit fails and the result is a discharge to a surface water of the state.

The report is initially made by telephone. A written verification of the report is to be submitted if requested by the Director of the Division of Oil and Gas.

Section 4 sets forth the procedure for determining wasteload allocations for discharges of sewage and other wastes from facilities operated in connection with the exploration,

development, production, storage and recovery of oil and gas and related mineral resources.

Section 5 applies to sewage treatment plants with capacities of 40,000 gallons per day or less which are operated in connection with the exploration, development, production, storage and recovery of oil and gas and related mineral resources.

Section 6 establishes filing fees for permits issued pursuant to W.Va. Code §22B-1-7, including the registration of wells pursuant to the oil and gas general permit for drilling fluids issued by the Division. The $50.00 fee applies to initial submittals of site specific permit applications only.

F. Series 6 - Dam Control

The Energy Act empowers the Division of Oil and Gas to establish regulatory requirements with respect to the Dam Control Act, W.Va. Code §§20-5D-1 through 14 (1985 Repl. Vol.), to the extent that those requirements pertain to the exploration, development, production, storage and recovery of oil and gas and related mineral resources in this State. Accordingly, Series 6 is made expressly applicable to these activities and the regulations of the Department of Natural Resources related to dam control are superceded to the extent that they apply to these sources.

The substantive regulatory requirements which are being proposed are identical to the substantive regulations of the Department of Natural Resources relating to dam control. Certain

changes have been made to streamline the regulations and to conform the regulatory authority to that of the Division of Oil and Gas.

E. Series 7 - Solid Waste Management

The Energy Act also vests exclusive jurisdiction in the Department of Energy with respect to the regulation of the exploration, development, production, storage and recovery of oil and gas and related mineral resources in the State pursuant to the Solid Waste Management Act, W.Va. Code §§20-5F-1 through 8 (1985 Repl. Vol.).

In proposed Series 7, the applicability of the regulation is limited to those activities involving exploration, development, production, storage and recovery of oil and gas and related mineral resources in the State. To the extent that the regulations of the Department of Natural Resources relate to these activities, their rules are superceded.

The Division of Oil and Gas has proposed the establishment of a permit by rule, to the extent that a solid waste facility complies with the regulatory and permitting requirements of Series 1 of these proposed regulations wherein the Division already takes into account the disposal of solid waste. In those cases in which a facility would not be subject to the permitting requirements of Series 1, the proposed regulations call for a specific permit to be issued by the Division upon application and in accordance with such reasonable terms and conditions as may be prescribed by the Director of the Division. In issuing the

permit, the Division would also be bound to assure compliance with the requirements of the State Solid Waste Management Act.

F. Series 8 - Hazardous Waste Management

Under the terms of the Energy Act, the Department of Energy is authorized to exercise all power and duties vested in the Administrator of the Office of Oil and Gas and the Shallow Gas Well Review Board pursuant to W.Va. Code §20-5E-7(h). That section reads, in pertinent part, as follows:

> (h) To the extent that this article relates to activities with respect to oil and gas wells, liquid injection wells and waste disposal wells now regulated by [W.Va. Code §§22B-1-1 et seq.; 22-7-1 et seq. and 22B-4-1 et seq.] the [Department of Energy] has the jurisdiction with respect to the regulation of such activities and shall promulgate such rules and regulations as may be necessary to comply with the requirements of this article . . . .

The Division of Oil and Gas interprets this provision as placing on it the obligation to regulate all hazardous waste activities involving the injection of such wastes into wells to the extent that such wastes are associated with the exploration, development, production, storage and recovery of oil and gas and related mineral resources of this State. A more detailed explanation of the scope of the Department of Energy's regulatory jurisdiction can be found in Part II of this Preamble. Accordingly, Series 8 includes a permit by rule which authorizes a hazardous waste permit for facilities which receive hazardous waste exclusively from oil and gas operations where those

facilities have underground injection control permits issued by the Division and otherwise comply with the regulatory permitting requirements of Series 1 of these proposed rules. Facilities receiving hazardous waste from activities other than oil and gas operations must obtain such additional authorizations from DNR and other agencies as may be required by law.

In addition, the Division of Oil and Gas interprets the State Hazardous Waste Management Act to place on it the responsibility to regulate those waste materials that are associated with the exploration, development or production of crude oil or natural gas or geothermal energy which are currently exempt from regulation as hazardous waste pursuant to W.Va. Code 20-5E-6(a)(2)(A) (1985 Repl. Vol.). Accordingly, the Division proposes to adopt a regulation exempting such wastes from regulation as hazardous waste. These wastes will be subject only to other applicable provisions of federal or state law in lieu of their regulation as hazardous waste until such time as the United States Environmental Protection Agency completes it study of these wastes mandated pursuant to Section 8002 of RCRA and promulgates regulations with respect to such wastes and that the regulation of such waste has been authorized by an act of Congress in accordance with §3001(b)(2) of RCRA. At the time the Governor issues a proclamation finding that at least 6 months have elapsed since the satisfaction of these requirements as required by State law, the Division will undertake whatever regulatory action would be necessary to discharge its responsibilities under the State Hazardous Waste Management Act.

G. Series 9 - Hearing and Appeal Procedures

The provisions of Series 9 govern and apply to all hearings before the Division of Oil and Gas under the provisions of W.Va. Code §22B-1 and the Natural Gas Policy Act of 1978. Series 9 is a procedural rule which consolidates the hearing and appeal procedures contained in various provisions of the rules of the former Department of Mines.

H. Series 10 - Requests for Information

Series 10 of the proposed regulations is a procedural regulation setting forth the Division's policy on disclosure of information pursuant to the State Freedom of Information Act (W.Va. Code §29B-1-1 et seq. (1980 & 1985 Cum. Supp.).

IV. Solicitation of Comments

The Division of Oil and Gas invites public participation in this rulemaking and requests comments on the proposed rules discussed in this notice. The Agency asks that comments be as specific as possible and that suggested revisions or corrections be supported by data. Comments should identify the section number of the proposed rules to which they are directed.

H. B. 2598

(By Delegate Knight)

(Introduced February 4, 1987; referred to the Committee on the Judiciary)

A BILL to amend article two, chapter sixty-four of the code of West Virginia, one thousand nine hundred thirty-one, as amended, by adding thereto a new section designated section twenty-two (one) (sixteen), relating to authorizing the director of the division of oil and gas of the department of energy to promulgate legislative rules governing dam control.

Be it enacted by the Legislature of West Virginia:

That article two, chapter sixty-two of the code of West Virginia, one thousand nine hundred thirty-one, as amended, be amended by adding thereto a new section, designated section twenty-two (one) (sixteen), to read as follows:

ARTICLE 2. EXECUTIVE AGENCY AUTHORIZATION TO PROMULGATE LEGISLATIVE RULES.

§64-2-22(1)(16). Department of energy; director of the division of oil and gas.

The legislative rules filed in the state register on the eleventh day of August, one thousand nine hundred eighty-six,

2598

modified by the director of the division of oil and gas of the department of energy to meet the objections of the legislative rule-making review committee and refiled in the state register on the fifteenth day of December, one thousand nine hundred eighty-six, relating to the director of the division of oil and gas of the department of energy (dam control) are authorized.

NOTE: The purpose of this bill is to authorize the Director of the Division of Oil and Gas of the Department of Energy to promulgate legislative rules governing dam control.

This section is new; therefore, strike-throughs and underscoring have been omitted.

Senate Bill No. 366

(By Senator Tucker)

[Introduced February 5, 1987; referred to the Committee on EIM; then to the Committee on the Judiciary.]

A BILL to amend article two, chapter sixty-four of the code of West Virginia, one thousand nine hundred thirty-one, as amended, by adding thereto a new section designated section twenty-two (one) (sixteen), relating to authorizing the director of the division of oil and gas of the department of energy to promulgate legislative rules governing dam control.

Be it enacted by the Legislature of West Virginia:

That article two, chapter sixty-two of the code of West Virginia, one thousand nine hundred thirty-one, as amended, be amended by adding thereto a new section, designated section twenty-two (one) (sixteen), to read as follows:

ARTICLE 2. EXECUTIVE AGENCY AUTHORIZATION TO PROMULGATE LEGISLATIVE RULES.

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The legislative rules filed in the state register on the eleventh day of August, one thousand nine hundred eighty-six,

modified by the director of the division of oil and gas of the department of energy to meet the objections of the legislative rule-making review committee and refiled in the state register on the fifteenth day of December, one thousand nine hundred eighty-six, relating to the director of the division of oil and gas of the department of energy (dam control) are authorized.

NOTE: The purpose of this bill is to authorize the Director of the Division of Oil and Gas of the Department of Energy to promulgate legislative rules governing dam control.

This section is new; therefore, strike-throughs and underscoring have been omitted.