**FEDERAL REGISTER: 48 FR 44006 (September 26, 1983)**

DEPARTMENT OF THE INTERIOR
AGENCY: Office of Surface Mining Reclamation and Enforcement (OSM)

30 CFR Parts 701, 816, and 817
Surface Coal Mining and Reclamation Operations; Permanent Regulatory Program; Coal Mine Waste

ACTION: Final rule.

**SUMMARY:** The Office of Surface Mining Reclamation and Enforcement (OSM) has revised the rules on disposal of coal mine waste from surface and underground mining activities. The revised rules allow qualified registered professional engineers to design coal refuse disposal sites for site specific conditions and reduce duplication and conflicts between these rules and the requirements of the Mine Safety and Health Administration (MSHA). These revised rules also include requirements for disposal of noncoal waste at surface mining operations.

EFFECTIVE DATE: October 26, 1983.

FOR FURTHER INFORMATION CONTACT: C. Y. Chen, Division of Engineering Analysis, Office of Surface Mining, U.S. Department of the Interior, 1951 Constitution Avenue, NW., Washington, D.C. 20240, 202-343-2160.

**SUPPLEMENTARY INFORMATION:**



## I. BACKGROUND

On June 18, 1982 *(47 FR 26598)* OSM published a notice of proposed rulemaking to amend 30 CFR Parts 701, 816 and 817 relating to coal mine waste definitions and the disposal of coal mine waste from surface and underground coal mining activities. The proposed rules were issued to remove specific design criteria and to reduce duplication with the Mine Safety and Health Administration (MSHA) rules for coal mine refuse piles and water, sediment, or slurry impoundments and impounding structures. These final rules cover the performance standards for the disposal of coal mine waste in nonimpounding structures, impounding structures and other situations affecting the handling of coal mine waste. Also, one section sets the requirements for the disposal of noncoal mine waste.

The public hearing on the proposed rules scheduled for August 5, 1982, was not held since no one requested to speak at the hearing. Also, there were no requests to hold public meetings on the proposed rules.

When the rules were proposed on June 18, 1982, it was announced that the public comment period would remain open until further notice *(47 FR 26598).* A subsequent Federal Register notice (July 13, 1982, *47 FR 30266)* announced that the public comment period would close at 5:00 p.m., August 25, 1982, to coincide with the closing of the public comment period on the draft supplemental Environmental Impact Statement on the proposed rules. In response to a request of the House Committee on Interior and Insular Affairs the public comment period was reopened on September 7, 1982, and closed again on September 10, 1982.

The Surface Mining Control and Reclamation Act of 1977 (Act), *30 U.S.C. 1201* et seq., recognizes the threat posed by improper disposal of coal mine waste. Congress included in the Act several provisions concerning coal processing waste and underground development waste.

For the surface disposal of wastes in areas other than mine workings or excavations, section 515(b)(11) of the Act provides that waste piles are to be stabilized in designated areas through compaction. The final contour of waste piles must also be compatible with the natural surroundings and the site must be revegetated according to the provisions of the Act. Sections 515(b)(13) and 515(f) of the Act provide that all existing and new coal mine waste piles used as dams or embankments must be regulated in accordance with standards and criteria concurred in by the Corps of Engineers. Section 515(b)(8) requires that impoundments of water achieve stability compatible with that of structures constructed

under Public Law 83-566 *(16 U.S.C. 1006).* In addition, section 515(b)(14) of the Act requires specific treatment or burial for all debris, acid-forming materials, toxic materials, or materials constituting a fire hazard. The Secretary also derives authority to regulate dams impounding waste from the requirements of section 515(b)(10) of the Act to protect the hydrologic balance.

The authority of the Chief of Engineers in assisting the Secretary to regulate new and existing coal waste piles as dams and embankments is contained in section 515(f) of the Act. The standards and criteria used by OSM must conform to the standards and criteria used by the Corps of Engineers to ensure that flood control structures are safe and effectively perform their intended function.

There are three sections to the Act that address coal mine waste produced from underground coal mining operations. First, section 516(b)(3) regulates the return of mine and processing waste and tailings to the mine workings or excavations. Second, section 516(b)(4) covers the surface disposal of wastes in the same manner as section 515(b)(11). Third, section 516(b)(5) covers all new and existing coal mine waste piles in a manner similar to section 515(b)(13), with the same responsibilities for the Corps of Engineers.

To implement these requirements of the Act, permanent program regulations were promulgated on March 13, 1979 *(43 FR 14901).* These rules, in 30 CFR 816.81 through 816.93, covered all types of coal processing waste, coal mine waste and solid waste generated during surface coal mining activities. Identical rules were included in 30 CFR 817.81-817.93 for the surface effects of underground mining activities. A plan for the disposal of coal processing waste, whether to be placed in a waste bank, dam or embankment, was required to be submitted and approved by the regulatory authority under 30 CFR 780.25 for surface mining activities and 30 CFR 784.16 for underground mining activities.

Since the promulgation of the permanent program rules on coal mine waste in March 1979, there has been one addition to the coal waste rules. On November 20, 1980 *(45 FR 76932),* Sections 816.83(a) and 817.83(a) were revised to provide an exception from the subdrainage requirement for a coal processing waste bank if the operator could demonstrate to the regulatory authority that a subdrainage system is not required to ensure structural integrity and water quality. The change was promulgated as a result of litigation challenging the requirement, In re: Permanent Surface Mining Regulation Litigation, No. 79-1144, D.D.C. (filed 1979). Before the court ruled on the issue, OSM concluded that a subdrainage system may not be necessary in all cases as long as the operator is responsible for assuring the structural integrity of the coal waste bank.

Review of the previous rules under Executive Order 12291 revealed duplication and conflict between those rules and the Mine Safety and Health Administration (MSHA) rules for coal mine refuse piles and water, sediment, or slurry impoundments and impounding structures. On June 18, 1982 *(47 FR 26598),* changes were proposed to the OSM rules to reduce this duplication by cross-referencing MSHA's rules, where applicable, and revising the previous OSM requirements.

Under the proposed rules, the disposal of coal mine waste in nonimpounding structures was governed by Sections 816.81 through 816.85. Proposed Section 816.86 was a combination of previous Sections 816.91, 816.92 and 816.93 and covered impounding structures -- dams and embankments constructed of coal mine waste and impounding water, slurry, sediment, etc. Proposed Section 816.87 governed removal of burned or unburned coal mine waste from a disposal area and included, from previous Section 816.86, standards for extinguishing a coal mine waste fire. Proposed Section 816.88 governed the return of coal mine waste to underground workings and proposed Section 816.89 set requirements for disposal of noncoal wastes. The same changes were proposed for Part 817 covering the disposal of coal mine waste from underground coal mining activities.

The final rules generally adopt the provisions of the proposed rules in Sections 816.81-816.89 that prescribe the performance standards for the disposal of coal mine waste from surface mining activities. However, the requirements in the final rules have been reorganized to more closely parallel similar requirements for disposal of excess spoil, editorial revisions have been made to clarify the requirements, and some changes have been made in response to comments received on the proposed rule.

In order to simplify the preamble, the following discussion of the rules in Sections 816.81-816.89 also applies to Sections 817.81-817.89, unless otherwise noted. The only difference to be noted is that surface mining activity rules refer to Part 780 -- Surface Mining Permit Applications and underground mining activity rules refer to Part 784 --

Underground Mining Permit Applications. For additional discussion, see the preamble to the proposed rules published June 18, 1982 *(47 FR 26598)*.

## II. DISCUSSION OF COMMENTS AND RULES ADOPTED

### A. GENERAL COMMENTS

During the comment period, OSM received about 200 individual written comments on the proposed coal mine waste rules from 30 sources representing State agencies, private individuals, environmental groups, industry and mining associations. All of the relevant comments received during the public comment period have been considered in the development of this final rule. Major comments are summarized below. There were several general comments that did not address specific sections of the rules which will be covered before discussing specific comments on the proposed rules.

### NPDES PERMITS

One commenter pointed out the possible application of the National Pollution Discharge Elimination System (NPDES) to mine waste areas. The commenter indicated that NPDES would probably apply to an impounding structure with a discharge point and consequently, the possibility of conflict between OSM and EPA over the responsibility for the coal mine waste discharge from the structure. The commenter recommended a memorandum of understanding between OSM and EPA to reduce redundant enforcement which would reduce the conflict between agencies, reduce the operational costs, and increase the coordination between them.

If the mine waste impoundment issues a discharge from a point source, an NPDES permit is required before the waste area can be constructed. OSM recently published a final regulation adopting EPA's effluent limitations, by cross reference to 40 CFR Part 434, in an effort to eliminate any conflict between applicable OSM and EPA standards. *(47 FR 47216,* October 22, 1982). Elimination of duplication between the permitting requirements of the Act and NPDES permitting requirements is beyond the scope of this rulemaking. OSM will, however, continue to work to promote cooperation and elimination of duplication between the agencies involved.

### EXTENSION OF THE COMMENT PERIOD

One commenter recommended that when options are presented in a proposal a comment period be opened following selection of an option for review and comment on the selection.

Both options for the proposed coal mine waste rule were open for comment from June 18, 1982, through September 10, 1982. An adequate time span was allotted for review of the options for the coal waste rules. For this rule, proposed Option 2 was primarily a reiteration of proposed Option 1 with the deletion of two paragraphs for Section 816.86 concerning coal mine waste impounding structures, and both proposed options were easily understood. Thus, no additional comment period is necessary.

One commenter contended that it was difficult for citizens to be involved in the rulemaking process because the draft supplemental environmental impact statement (EIS) could only be reviewed in the Administrative Record Room in Washington, D.C.

The commenter was incorrect. The draft supplemental environmental impact statement was available for review in the OSM Technical Centers and Field offices. Also the notice on the availability of the EIS provided the name of a person to contact for further information and to receive a copy of the draft environmental statement by mail. Copies of the cumulative environmental assessment which was issued prior to the draft EIS were also available upon request to interested persons.

### AVAILABILITY OF REFERENCE MATERIALS

One commenter complained that the reference material cited in the proposed rulemaking notice was available only in the Washington, D.C., area and that many of the libraries available to the public do not have the publications listed as references. Therefore, the commenter complained that it was difficult for the public to review the specific references.

Each reference was available in OSM's administrative record and the citation lists the source from which a particular publication of interest may be obtained. An individual may obtain copies of any of the listed documents from these sources. In addition, the phone number and mailing address of a responsible official was given on the first page of the notice of proposed rulemaking for the convenience of persons interested in receiving information on how to obtain copies of the references. Thus, adequate access to references was provided.

The same commenter was also concerned that no foreign publications were listed as references. In addition the commenter believes there were inadequate specific data on coal waste because there were only two documents related to coal refuse.

The commenter is mistaken. While only two documents in the coal waste reference list included the words "coal refuse" in the title, the others are engineering references that list techniques and approaches applicable to the construction of coal waste piles. Additionally, it is not necessary to conduct a worldwide search of available information or to include an exhaustive bibliography of all possible references. The commenter failed to cite any omitted references, either domestic or foreign, that should be considered in addition to those cited.

**DESIGN FLEXIBILITY**

One commenter took issue with the elimination of design standards to afford qualified professional engineers flexibility to design coal mine waste structures. In the commenter's estimation, elimination of design standards should prompt a corresponding increase in the amount of permit application information so that the regulatory authority would be able to determine the adequacy of the design.

Design flexibility to meet needs of individual mine site conditions is inherent in the use of performance standards rather than extensive use of design criteria. Under OSM's permitting rules, regulatory authorities will have sufficient information to determine the adequacy of the design. However, the revised rules retain some design criteria were deemed appropriate to ensure the stability of the disposal site and to ensure public safety. In general, under these rules permit review of a specific design certified by the design engineer followed by inspection during construction to assure adherence to the design approved by the regulatory authority will help ensure compliance with the performance standards and protection of the public health and safety.

One commenter contended that loss of information input to the permit review process reduces agency capability to develop informed judgment on the merits of the reclamation plan. This commenter failed to point out specific areas of information loss considered necessary in the permit requirements. Parts 780 and 784 contain special informational requirements for coal waste disposal. These sections include requirements for submittal of relevant design information.

Two commenters favored reduction of design standards in the Federal rules. One pointed to solutions of mining reclamation problems tailored to specific site conditions as an advantage while the other advocated retention of the State option to develop design criteria to meet specific objectives. Another commenter agreed that rather than mandating design criteria, the engineer should have the flexibility to design more efficient and cost-effective coal refuse disposal sites. The commenter also cited the advantages of on-site knowledge of the conditions at the mine site and of qualifications to ensure the structural and environmental integrity of the mine.

The final rules emphasize the use of performance standards rather than design criteria. Under this approach, the regulatory authority may develop additional design criteria or other standards that are appropriate to local conditions. This issue is further discussed in OSM's "Final Environmental Impact Statement, OSM EIS-1: Supplement."

**CORPS OF ENGINEERS CONCURRENCE**

Two commenters stated that coal mine waste rules must be developed with the active involvement of the Chief of Engineers of the Corps of Engineers. Section 515(f) of the Act requires the Chief of Engineers to concur in writing in the Secretary of Interior's standards and criteria. OSM has consulted with the Corps of Engineers in the development of these rules and has obtained the necessary concurrence. Sections 201 and 501 of the Act impose on the Secretary of the Interior the responsibility of developing regulations covering the permanent regulatory program. These rules are issued in accordance with that responsibility.

**USE OF MSHA STANDARDS**

Two organizations submitted lengthy comments questioning the reliance on the MSHA rules in OSM's proposed coal mine waste rules. The assertion of the commenters was that OSM must establish coal mine waste rules which supplement those of MSHA because the Surface Mining Act has as its objective the protection of the health and safety of the public, whereas MSHA has a limited mandate of protecting the miner on the mine site. The commenters argued that because of the separate regulatory objectives, Congress intended OSM to adopt coal mine waste rules which go beyond MSHA's.

The final rules adopted today do supplement the rules adopted by MSHA. Where applicable, however, MSHA standards which satisfy requirements under the Surface Mining Act have been adopted by cross-reference. Such cross-referenced standards are nevertheless enforceable under the Act by the surface mining regulatory authority and become requirements of the surface mining regulatory program as well as MSHA's program for coal mine health and safety.

It is undesirable to have two regulatory programs for the same subject that contain conflicting standards or which use fundamentally different terminology. The final rules help coordinate regulatory responsibilities under the Surface Mining Act with those of MSHA. Additionally, they help ensure that OSM's regulations do not supersede, amend, modify or repeal any standard under the Federal Coal Mine Health and Safety Act of 1969 (as revised in 1977).

The final rule is in accord with the requirements of the Act, clearly identifies areas of overlap between OSM and MSHA rules, and, by utilizing similar definitions and cross-referencing, eliminates conflicts between the two sets of rules. It should be noted, however, that the final rule does not fully eliminate duplicative regulatory requirements between the two programs. Rather, it recognizes areas of continued duplication and applies standards under the surface mining regulatory program which are consistent with those applied under the MSHA program for health and safety.

**B. SPECIFIC COMMENTS AND DISCUSSION OF RULES ADOPTED**

**PART 701 -- PERMANENT REGULATORY PROGRAM**

**SECTION 701.5 - DEFINITIONS.**

The final rule adopts from the proposal revisions to the previous definition of "coal processing waste" and the three new definitions: "coal mine waste," "impounding structure," and "refuse pile." For a more complete explanation of the basis of the new definitions, the reader is referred to *47 FR 26600* (June 18, 1982). OSM received several comments on the proposed definitions. These comments are discussed below.

**COAL PROCESSING WASTE**

The final rule defines the term "coal processing waste" to mean earth materials which are separated and wasted from the product coal during cleaning, concentrating, or other processing or preparation of coal. An editorial change is made in the final definition to more closely track the language in the definitions of the terms "coal preparation plant" and "surface coal mining operation" in 30 CFR 701.5 and 700.5, respectively. Three commenters agreed with the proposed definition of coal processing waste.

Another commenter suggested the beginning of the definition read as follows: "Coal processing waste includes toxic- or acid-forming earth materials which are . . ." The commenter said this change would reflect the reason for coal processing waste being disposed of separately from spoil. The commenter indicated that the proposed definition seemed vague in its intent and would add excessively burdensome and expensive operation procedures. The commenter agreed with the need to protect surface and ground water from toxic- and acid-forming coal mine waste, but, the commenter argued, material that would not adversely affect the surrounding area should not be treated any differently than spoil material.

Although OSM agrees with the commenter that there may be circumstances when coal processing waste may not be toxic or acid forming, the definition is not vague.

Congress intended that special consideration be given to disposal of coal mine waste regardless of whether it is potentially toxic or acid forming. Thus, OSM has continued to require that all coal processing waste be disposed of according to Sections 816.81-816.86. A revision has been made to the requirements for backfilling and grading and disposal of excess spoil to recognize that nontoxic- and nonacid-forming coal mine waste may be disposed of with other spoil materials.

One commenter was concerned that the definitions of "coal processing waste" and "coal mine waste" do not include materials other than wasted earthen materials, such as pieces of equipment, wire, rags, etc. The definition of "coal processing waste" is not intended to include such non-earthen materials since their disposal is covered in Section 816.89 on noncoal mine waste. Similarly, the definition of "coal mine waste" is not intended to include such non-earthen materials.

**COAL MINE WASTE**

In the final rule, "coal mine waste" means coal processing waste and underground development waste. Coal processing waste is defined in this rulemaking and underground development waste was defined in a separate rulemaking *(48 FR 32925,* July 19, 1983) as waste rock mixtures of coal, shale, clay stone, siltstone, sandstone, limestone, or related materials that are excavated, moved, and disposed of from underground workings in connection with underground mining activities, including the development of drifts, shafts and adits. Thus, coal mine waste includes the two materials most likely to contain coal and coal waste products.

A commenter argued that the proposed definition of "coal mine waste" did not include waste generated by surface mining operations, only included waste created during underground development of a mine, and thus overlooked many other sources of waste generated from mining operations.

The commenter further suggested that reliance on the definition of "underground development waste" gives the erroneous impression that coal mine waste is composed of only earthen materials and is confined to that which is generated from only underground mines.

The revised definition includes two types of material: coal processing waste and underground development waste. This new definition more closely parallels the treatment of those materials by MSHA.

Earthen material excavated during surface mining activities other than material wasted during coal processing is classified as spoil. Disposal of such material is regulated under the backfilling and grading rules, 30 CFR 816.101-816.107 and 817.101-817.107; and under the rules for disposal of excess spoil, 30 CFR 816.71-816.75 and 817.71-817-75. Congress did not intend spoil material to be regulated as "coal mine waste" and OSM has, therefore, not included spoil in the final "coal mine waste" definition. The final definition has been revised slightly from the proposal to eliminate the perceived ambiguity that only coal processing waste from underground mining is included. The final definition of coal mine waste includes coal processing waste from either surface or underground mining activities.

**REFUSE PILE**

The term "refuse pile" means a surface deposit of coal mine waste that does not impound water, slurry, or other liquid or semi-liquid material. Under this final definition, a refuse pile may contain coal processing waste and/or underground development waste. A spoil disposal facility would not be a refuse pile. The distinction is needed between coal mine waste and spoil since each material is treated differently in different sections of the rules. (Coal mine waste -- Sections 816.81-816.86, and Spoil -- Sections 816.102-816.105 and Sections 816.71-816.76).

One commenter proposed additional language in the definition of "refuse pile" to say that refuse piles do not include "temporary spoil piles of removed overburden material." The commenter understood that the proposed definition excluded overburden materials; but, by specifically excluding overburden in the definition, the commenter asserted OSM's intended exclusion would become definitive.

Language specifically excluding spoil from the definition of refuse pile would be redundant. The coal mine waste rules are intended to deal with a material which presents particular problems of combustibility and toxicity when disposed of in

a fill or pile. Overburden materials when removed do not generally present such problems and are regulated under the backfilling and grading rules and the excess spoil rules.

One commenter mistakenly thought OSM had classified underground development waste as excess spoil. OSM did propose the definition for underground development waste within the same rulemaking as excess spoil, but the proposed and final rules do not classify it as excess spoil.

One commenter wanted to know when a refuse pile is not an impoundment and vice versa. Furthermore, the commenter asked whether refuse piles hold only dry wastes and what is meant by "dry."

In distinguishing between refuse piles and impoundments or impounding structures, the final rules do not characterize the deposits as "wet" or "dry." These terms are relative; almost every substance has some moisture content. Instead, the final rules distinguish the deposits as either containing existing or not containing material in a liquid or semi-liquid state. This is determinable from the physical characteristics of the material.

**IMPOUNDING STRUCTURE**

A definition for "impounding structure" is added to the final rules to differentiate between the structure itself and the total impoundment which is also defined in Section 701.5. "Impoundment" refers to the entire facility including the impounding structure and the retaining area. "Impounding structure" refers to the structure of earth or other materials used to impound water, sediment, slurry or other liquid or semi-liquid material. MSHA rules use the term "impounding structure" rather than dams or embankments (30 CFR 77.216 et seq. ). In order to reduce confusion of terminology and increase compatibility of regulations, OSM has adopted this definition. It should be noted that the rules governing impoundments in 30 CFR 816.49 and 817.49 apply to the entire impoundment which contains the impounding structure. Thus the final rules regarding coal mine waste impounding structures augment and do not replace the rules governing impoundments.

A commenter suggested that the definition of "impounding structure" was too broad, especially with the phrase "or other materials", and should be limited. It could include piles of waste or structure built of earthen materials not normally considered as impoundments, such as any refuse pile associated with a coal preparation plant.

The definition is not too broad. Impoundments include dams and embankments designed to hold liquid or semi-liquid materials, including coal mine waste slurry or sediment in a semi-liquid state. To clarify the definition of "impounding structure," it has been revised to refer explicitly to dams, embankments, or other structures that impound water, slurry or other liquid or semi-liquid material. Final Section 816.84 applies to all impounding structures constructed of coal mine waste or intended to impound coal mine waste in a liquid or semi-liquid state. If an impounding structure is not constructed of coal mine waste and is not intended to impound a slurry waste, it would not fall under final Section 816.84.

**PART 816 -- PERMANENT PROGRAM PERFORMANCE STANDARDS -- SURFACE MINING ACTIVITIES**

**SECTIONS 816.81-816.89 -- FINAL RULE FOR COAL MINE WASTE**

Final Section 816.81 contains the general requirements that apply to all methods of coal mine waste disposal -- refuse piles and impounding structures. General provisions to be attained in the design, construction and maintenance of coal mine waste disposal facilities are included. The general requirements are supplemented by Sections 816.83 and 816.84. Dry refuse pile design, construction and maintenance are covered in Section 816.83 which applies to nonimpounding structures. Impounding structures either constructed of or for retaining liquid or semi-liquid coal mine waste are covered in Section 816.84. Final Section 816.87 deals with coal mine waste fires and final Section 816.89 governs the disposal of noncoal mine waste.

To assist the reader in understanding all the changes in the final rules, the following derivation table shows the relationship of the final rules to the previous rules and the proposed rules. The same changes apply for Part 817 -- Underground mining activities.

DERIVATION TABLE -- COAL MINE WASTE

| Final Section | Previous Rule | Proposed Rule |
|---|---|---|
| Section 816.81: | | |
| (a) | 816.81(a) | 816.81(a) and 816.71(a)(1). |
| (a)(1) | 816.81(b)(1) & 8126.81(a)(1) – 816.71(a)(1) | 816.81(a)(3)(i) & 816.71(a)(1)(i). |
| (a)(2) | 816.81(b)(3) & 816.81(a)(1) – 816.71(f) | 816.81(a)(3)(iii) & 816.71(a)(3). |
| (a)(3) | 816.81(a)(1) – 816.71(a)(3) | 816.71(a)(1)(iii). |
| (a)(4) | 816.81(b)(2) | 816.81(a)(3)(ii). |
| (a)(5) | 816.81(a)(2) | 816.81(a)(3)(iv). |
| (b) | 816.81(b) | 816.81(b). |
| (c)(1) | 816.81(a)(1) – 816.71(b) | 816.85(c), 816.86(e) & 816.71(a)(2). |
| (c)(2) | 816.81(a)(1) – 816.71(f) & (m) & 816.93(a)(2-3) | 816.85(e), 816.86 (g - h) & 816.71(a)(1)(ii) & (a)(2). |
| (d) | 816.81(a)(1) – 816.71(m) | 816.85(e), 816.86(h) & 816.71(a)(2). |
| (e) | 816.82(b) | 816.82(b). |
| (f) | 816.88 | 816.88. |
| Section 816.83: | | |
| Intro | | 816.85(a). |
| (a)(1) | 816.83(a)(1) | 816.83 (a)(1) & (b) & 816.71(a)(7) & (b)(1). |
| (a)(2) | 816.83 (b) & (d) & 816.92(b) | 816.83(b) & 816.71(a)(6). |
| (a)(3) | 816.81(a)(1) & 816. 85(a) | 816.71(b)(1). |
| (b) | 816.83(c) | 816.83(b) & 816.71(a)(6). |
| (c)(1) | 816.81(a)(1), 816.85(a) & 816.92(a) | 816.85(d) & 816.71(a)(5). |
| (c)(2) | 816.81(a)(1) & 816.85(a) | 816.71 (a)(8) & (b)(5-6). |
| (c)(3) | 816.81(a)(1) & 816.85(a) | 816.71(b)(5). |
| (c)(4) | 816.85(d) | 816.85(g). |
| (d) | 816.82(a) | 816.82(a) & 816.71(a)(4). |
| (d)(1) | 816.82(a)(1) | 816.82(a)(1) & 816.71(a)(4). |
| (d)(2) | 816.82(a)(2-3) | 816.82(a)(3) & 816.71(a)(4). |
| (d)(3) | | 816.71(a)(4). |
| (d)(4) | 816.82(a)(4) | 816.82(a)(3) & 816.71(a)(4). |
| Section 816.84: | | |
| Intro | | 816.86(a). |
| (a) | 816.91(b) | 816.86(a). |
| (b)(1) | 816.93(a) | 816.86(e). |
| (b)(2) | 816.49(b) – 816.46 (q)(1) & (q)(4) & 780.25(c) | 816.49(b)(1). |
| (c) | 816.93(b) | 816.86(i). |
| (d) | 816.92(b) | 816.86(d). |
| (e) | 816.93(c) | 816.86(j). |
| Section 816.87: | | |
| (a) | 816.86 | 816.87(a). |
| (b) | 816.87 | 816.87(b). |
| Section 816.89: | | |
| (a) | 816.89(a) | 816.89(a). |
| (b) | 816.89(b) | 816.89(b). |
| (c) | 816.89(c) | 816.89(c). |

SECTION 816.81(a)

Under final Section 816.81(a) all coal mine waste must be placed in new or existing disposal areas that are within the permit area and approved by the regulatory authority.

The previous reference to hauling and conveyance of coal mine waste has been deleted because the Act does not require any particular means of material handling or method of transportation to the disposal area and because transportation is not one of the more important factors in determining the stability of the waste disposal site. Both the transportation method and placement techniques used at a particular site are more appropriately selected during the design of an individual disposal facility. Specifically the words "hauled or conveyed and" have been removed while leaving the broad description "placed" to cover any method of transportation the mine operator may choose. One commenter agreed with the deletion in the proposed rule of the reference to hauling and conveyance from previous Section 816.81(a).

The background section of the preamble to the proposed rules *(47 FR 26600)* was cited by one commenter as containing the phrase "waste banks must meet the requirements of the rules for excess spoil fills and the requirements for waste banks." The commenter believed that refuse disposal sites should not meet the same criteria as excess spoil fills because of different material properties, different areas of disposal, and different revegetative requirements.

The phrase quoted by the commenter was included in a discussion of the previous rules and is one of the reasons the rules were revised. In these final rules, only those portions of the excess spoil rules pertinent to refuse pile and impounding structure construction are used to guide the disposal of coal mine waste. However, it should be noted that the revegetation requirements of Sections 816.111-816.116 must be met by both types of facilities and that many of the engineering considerations applicable to disposal of excess spoil are also applicable to the disposal of coal mine waste.

One commenter contended that by the removal of the requirement that the coal waste be hauled or conveyed and placed in a controlled manner in the disposal site, OSM is rejecting a position which it specifically embraced in the promulgation of the former rule. The commenter asserted that removal of the requirements would run counter to Congressional intention, citing legislative history, H. Rep. No. 95-218, 95th Cong. 1st Sess., 101, 103 and 125 (1977).

In the preamble to the former rule, OSM specifically noted the problem with uncontrolled end- or side-dumping of waste onto disposal sites and chose not to allow it; instead OSM required that the waste be hauled and conveyed and placed in a controlled manner *(44 FR at 15209-10).* OSM has received this issue and believes it was wrong in not allowing controlled gravity placement of material.

The final rule is revised to require that the coal mine waste be placed in a controlled manner in a disposal area. The proposed rule only required the placement of the waste. The addition of the phrase "controlled manner" in Section 816.81(a) is supported by the legislative history cited by the commenter, H. Rep. No. 95-218, at p. 125.

The legislative history does not indicate, however, that the means of transportation of material to the disposal site must be regulated or that the material must be hauled or conveyed to the disposal site. As stated in the discussion to the proposed rule *(47 FR at 26600),* any material handling technique consistent with the facility design could be acceptable. These rules retain the features necessary to maintain stability of the site and to minimize the potential for combustion after the material is placed in the disposal site.

One commenter took issue with the proposed exclusion of a sentence from previous Section 816.81(a) that coal waste be disposed of within the permit area. The reason given for opposing the removal was that the explanation in the proposed rule suggested that the former rule was more precise. The commenter also felt the proposed removal leaves unclear a basic requirement of the Act.

The sentence was proposed to be removed because it was deemed unnecessary. Disposal of coal mine waste must be within the permit area. However, the commenter's suggestion has been accepted and the final rule has been revised to eliminate any possible ambiguity by requiring disposal "within a permit area."

One commenter took issues with the deletion of the reference to previous Sections 816.71 and 816.72 in proposed Section 816.81(a). The commenter was concerned that the change would delete the incorporation of the design standards of the excess spoil rules which the commenter considered essential requirements for coal mine waste refuse pile construction. The commenter also urged that the reference to Section 816.71 not be deleted from the final rule for refuse pile construction, since that section sets basic engineering standards for refuse pile construction.

OSM agrees that many of the requirements for construction of excess spoil fills contained in revised final Sections 816.71 and 816.72, are basic engineering standards which are also applicable to construction of coal mine waste disposal structures. Because construction of coal mine waste disposal structures requires some different or additional requirements and because the revised refuse pile standards in Section 816.83 reference the MSHA rules of Sections 77.214 and 77.215, the final rule does not reference Sections 816.71 and 816.72 in their entirety, but adds the applicable excess spoil requirements directly in Sections 816.81 and 816.83. Inclusion of these requirements directly, rather than by reference, should aid in understanding the final rules adopted. With the reference to the MSHA rules and use of specific provisions from the excess spoil rules that are also applicable generally to coal mine waste disposal and specifically to refuse pile construction, these rules meet the requirements of the Act.

To assist the reader in understanding the relationship between the requirements for refuse piles and those for excess spoil fills, the following table has been prepared to indicate where applicable provisions have been included in Sections 816.81 and 816.83 from Sections 816.71 and 816.72. The provisions in Section 816.81 are applicable both to refuse piles and impounding structures. The same comparison applies to Part 817 -- Underground mining activities.

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COMPARISON TABLE -- EXCESS SPOIL RULES AND COAL MINE WASTE RULES

| Excess spoil fills | Coal waste disposal and refuse pile rules |
|---|---|
| Section 816.71: | |
| (a) and (a)(1-3) | 816.81 (a) and (a)(1-3). |
| (b) | 816.81(c). |
| (c) | N/A. |
| (d)(1) | 816.81(d). |
| (d)(2) | N/A. |
| (e)(1) | 816.83(c)(1). |
| (e)(2) | N/A. |
| (e)(3) | 816.83(c)(2). |
| (e)(4) | 816.83(c)(3). |
| (e)(5) | 816.83(c)(4). |
| (f)(1) | 816.83(a)(1). |
| (f)(2) | 816.83(a)(2). |
| (f)(3) | 816.83(a)(3). |
| (g) | 816.83(b). |
| (h) | 816.83(d). |
| (i) | N/A. |
| (j) | 816.81(f). |
| Section 816.72: | |
| (a) | 816.83(a)(2). |
| (b) | N/A. |

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Certain of the excess spoil requirements have not been included in the final coal mine waste rules. Section 816.71(c) of the excess spoil rules requires that the fill be located on the most moderately sloping and naturally stable areas available. This requirement is adopted for excess spoil disposal from section 515(b)(22)(E) of the Act. The Act does not include a similar requirement for disposal of coal mine waste.

Under most circumstances the provisions of revised Section 816.71(c) would also be appropriate for application with respect to construction of refuse piles. However, since the most moderately sloping areas in many areas of the country are also stream valley bottom or similar areas with more sensitive hydrologic features, it is not necessarily desirable to require the location of refuse piles in these areas. The objective of the requirement for location of excess spoil fills is to help ensure the stability of the final fill. When designing coal mine waste disposal facilities, protection of the hydrologic balance often can be as important a consideration in evaluating the appropriate location for the facility as locating the fill on the most moderately sloping area available. Stability of refuse piles will nevertheless be ensured through the requirements regarding minimum static factors of safety, placement of waste, design certification, construction inspections and other applicable provisions. For these reasons a parallel requirement to revised Section 816.71(c) has not been included in the rules for coal mine waste.

Section 816.71(d)(20) of the revised excess spoil rules requires the construction of rock toe buttresses or keyway cuts to help ensure the stability of the fill where the toe of the fill rests on the downslope. This requirement is adopted for excess spoil disposal from section 515(b)(22)(F) of the Act. The Act does not include a similar requirement for disposal of coal mine waste.

The construction of a keyway cut or a rock toe buttress may help to ensure the stability of the fill and minimize the potential for mass movement of the spoil material. However, keyway cuts, if not used properly, may also adversely affect foundation conditions. Under the final rule, refuse piles must be constructed to a minimum factor of safety of 1.5 and meet other requirements applicable to ensuring the stability of the waste disposal facility. The use of keyway cuts or rock toe buttresses under the final refuse pile rule has been left to the discretion of the design engineer. Since these structures are not always necessary design features and the Act does not require their use in refuse piles, no equivalent provision to Section 816.71(d)(2) has been included in the refuse pile rules.

Section 816.71(e)(2) of the revised excess spoil rules requires that spoil be placed in 4-foot lifts, unless otherwise approved by the regulatory authority. This section is not consistent with the requirements of MSHA's rules at 30 CFR 77.215(h), which require that refuse piles be constructed in 2-foot lifts, unless otherwise approved. Since MSHA's rules supersede any less stringent provision in OSM's rules, the requirements of 30 CFR 77.215(h) have been relied upon in this final rule to govern refuse construction. Thus, Section 816.71(e)(2) has not been made applicable to refuse piles.

Section 816.71(i) governs when coal mine waste may be disposed of in excess spoil fills. It is not necessary to include an equivalent provision in the coal mine waste rules.

One commenter noted that under previous Section 816.71(k), coal waste could not be used in head-of-hollow or valley excess spoil fills and that the definitions of those terms in Section 701.5 excluded coal waste. The commenter asserted that prudent engineering dictates that due to the inherent instability of the waste material it should not be used in steep slope areas.

OSM disagrees. The prohibition against use of coal mine waste in head-of-hollow and valley fills has been eliminated in the final rules pertaining to excess spoil disposal. The physical, chemical and engineering properties of coal mine waste can be adequately defined by proper testing techniques. This makes it feasible to analyze, design and properly apply the necessary construction controls to place coal mine waste in excess spoil fills so as to meet all performance standards of the Act and rules including the minimum long-term static safety factor of 1.5.

The rules adopted require the operator to use qualified registered professional engineers for analysis and design and that the construction be certified by a qualified registered professional engineer. In addition, the rules require site-by-site approval by the regulatory authority. They further specify that when coal mine waste materials are placed in excess spoil fills, such disposal must not only comply with the coal mine waste disposal requirements in Sections

816.81 and 816.83, but also must meet additional standards contained in final Section 816.71(i). The reader is referred to the revised final excess spoil rule for additional discussion on these requirements.

In steep slope areas, where head-of-hollow and valley fill excess spoil facilities are normally constructed, coal mine waste has in the past been disposed of in the same or similar fill configurations. By allowing the combination of such materials in fills under proper design and construction techniques, this rule should reduce unnecessary duplication of fills and reduce the number of valley fills while maintaining environmental and safety standards. Coal mine waste can be disposed of in such facilities without any increase in adverse impacts.

Section 816.72(b) governs the use of rock-core chimney drains in head-of-hollow excess spoil fills. OSM did not propose to make this provision applicable to refuse piles, nor did the prior rule specifically provide for the use of rock-core chimney drains in refuse piles. If at some time in the future it is determined that use of rock core chimney drains is appropriate for refuse pile construction, OSM will consider proposing a rule change at that time.

Proposed Section 816.81(a)(2) provided that all coal mine waste shall be placed in structures that are designed, constructed, inspected and maintained in accordance with Sections 816.82 through 816.86. This proposed section did not include any substantive requirement and is unnecessary in the final rule. Therefore, it has not been adopted, and no change is intended by this omission.

SECTION 816.81(a)(1)

Final Section 816.81(a)(1) requires that coal mine waste be placed in a manner to minimize adverse effects of leachate and surface runoff on surface and ground water and includes requirements proposed at Section 816.81(a)(3)(i) with minor revisions.

Two commenters recommended that the phrase "not adversely affect ground or surface water quality or quantity" in Section 816.81(a)(3)(i) should be changed to "minimize adverse effects to ground or surface water quality and quantity." This, according to the commenters, would be consistent with language found in similar rules throughout Parts 816 and 817.

The comment has been accepted. The suggested change conforms with the guidance presented in the hydrologic balance protection provisions of Section 816.41. In this section, minimization of impact on ground and surface water quality and quantity is emphasized. Effluent from coal mine waste should be prevented or controlled so that the receiving system will still contain water that meets applicable Federal and State water quality standards and protects the hydrologic balance. In accordance with the hydrologic balance rules, the operator would use mining and reclamation techniques that minimize water pollution and changes in flow.

One commenter suggested that a clause be added to Section 816.81(a) to tie it to the National Pollution Discharge Elimination System Permit (NPDES).

OSM agrees that the NPDES permit requirements are applicable to point source discharges from coal waste facilities. This requirement is incorporated in Sections 816.41 and 816.42 and applies to all discharges from coal waste facilities. Therefore, although the commenter is correct, no change is needed in the final coal waste rules to accommodate the commenter's concern. Although these regulations require compliance with NPDES requirements, compliance with such standards will not alone ensure compliance with the hydrologic protection requirements of Section 816.81(a).

SECTION 816.81(a)(2)

Final Section 816.81(a)(2) requires that coal mine waste be placed in a manner to ensure mass stability and prevent mass movement during and after construction. The final rule includes aspects of proposed Sections 816.81(a)(3)(iii) and 816.85(e). Proposed Section 816.81(a)(3)(iii) would have required that the structure be stable. The final rule

revises this standard, in accordance with proposed Section 816.85(e) (and the rule for excess spoil, Section 816.71(a)(2)), to make it clear that the facility must not only be stable upon completion, but also during construction.

SECTION 816.81(a)(3)

Final Section 816.81(a)(3) requires that coal mine waste be placed in a manner to ensure that the final disposal facility is suitable for reclamation and revegetation compatible with the natural surroundings and the approved postmining land use. This section has been added to the final rule in response to a commenter who requested reconsideration of the proposal to delete certain requirements included in previous Sections 816.71 and 816.72 and made applicable to coal mine waste be reference. The commenter pointed out that Section 515(b)(11) of the Act requires compatibility of the coal mine waste with the natural surroundings. The language of final Section 816.81(a)(3) parallels requirements included in the final excess spoil rule and will ensure that the final postmining surface of the disposal facility is reclaimed to a condition compatible with the natural surroundings.

SECTION 816.81(a)(4)

Final Section 816.81(a)(4) provides that coal mine waste shall be placed in a manner so as not to create a public hazard. This paragraph is the same as proposed Section 816.81(a)(3)(ii).

One commenter suggested that "public hazard" be broadened to "public health or safety hazards" consonant with the findings of Section 101(c) of the Act. The commenter argued that the Act requires consideration of both health and safety considerations, as well as protection of property and the quality of life in adjacent communities.

OSM agrees that coal mine waste should be disposed of in a manner that does not create hazards to the public health or safety. The provision in the final rule applies the public hazard consideration to coal mine waste within, as well as outside the permit area. Protection against creating a public hazard is sufficiently broad to refer to both health and safety. No change was made in the rule as a result of the comment.

SECTION 816.81(a)(5)

Final Section 816.81(a)(5) requires that coal mine waste be placed in a manner to prevent combustion. This paragraph is the same as previous Section 816.81(a)(2). One commenter agreed with the proposed wording change from "to prevent combustion" in the previous rule to "minimize the potential for combustion" as being more realistic. Another commenter opposed the change on the grounds that the goal of preventing combustion was set by Congress and the OSM cannot substitute its judgment in setting standards for environmental protection. The commenter also pointed out that the legislative history, H.R. Rep. 95-218 at 125, states that the goal of sections 515(b)(11) and 516(b)(5) of the Act is "to prevent combustion." Therefore, the commenter felt the rule cannot be changed in proposed Section 816.81(a)(3)(iv) to minimizing the potential for combustion.

OSM agrees with the objective of preventing combustion in coal mine waste. The final rule which requires that coal mine waste disposal facilities by designed to prevent combustion has been changed to explicitly recognize this objective. As a practical matter there is little difference between the previous and proposed standards. The language "minimize the potential" for combustion would merely have recognized the impossibility of achieving an absolute.

SECTION 816.81(b)

Final Section 816.81(b) permits placement, within the permit area, of coal mine waste from sources outside the permit area with the approval of the regulatory authority. This final language follows Section 816.81(b) of the proposed rule and the reader is referred to the preamble of the proposed rule for additional discussion on the paragraph *(47 FR 26601)*.

A commenter urged that coal mine waste from outside the permit area be approved by the regulatory authority only after a determination that such waste will not jeopardize the stability of the fill within the permit area. The

commenter also urged that the phrase from the former rule mentioning waste from other mines and abandoned waste fills not be deleted since it suggests the type of waste an operator may have approved for disposal.

No specific provision is necessary in the final rule with regard to a stability determination. Regardless of the source of the coal mine waste, the requirements for stability must be satisfied. Further, the definition, in Section 701.5, of "coal mine waste" is sufficiently specific with regard to the types of material covered by this paragraph. In addition, disposal of all waste must be approved by the regulatory authority in the reclamation plan, 30 CFR 780.18(b)(7) (toxic materials) and 780.25(d) (waste banks). The latter rule requires compliance with the coal mine waste rules which set stability as a performance standard that must be achieved.

The same commenter also urged that the hydrologic, geotechnical, physical and chemical analyses required in previous Section 816.81(b), upon which the regulatory authority had to base its decision to allow disposal of coal mine waste from outside the permit area, not be deleted. In the commenter's view such analyses are necessary for the regulatory authority to make an informed judgment.

In order for such waste to be disposed of within the permit area, the regulatory authority's approval is required under Section 816.81(b). The existing permitting standards require sufficient information to allow the regulatory authority to make the necessary determinations. Among those requirements which may be applicable are Section 780.18(b)(7) which pertains to toxic materials, Section 780.21 which pertains to protection of water, and Section 780.25(d) for waste pile stability and hazards. Thus, sufficient analyses and information will be furnished to the regulatory authority under the permit application requirements. They need not be included in the performance standards.

SECTION 816.81(c)

Final Section 816.81(c) contains requirements pertaining to the certification of the design of the facility by a registered professional engineer.

Final Section 816.81(c)(1) requires that the disposal facility be designed using current, prudent engineering practices and that it meet any design criteria established by the regulatory authority. A qualified registered professional engineer, experienced in the design of similar earth and waste structures, must certify the design of the disposal facility. This requirement parallels the requirement of proposed Section 816.85(c) and Section 816.86(e), which referenced a similar provision in Section 816.49. No comments were received on this aspect of the proposal. However, the language of the final rule has been revised to more closely follow the language of similar provisions in the rules on excess spoil disposal. No major change in the section is intended by the modification from the proposal.

Final Section 816.81(c)(2) sets a static safety factor of 1.5 as the necessary degree of stability and requires the foundation and abutments of the disposal facility to be stable under all conditions of construction. This provision parallels proposed Sections 816.85(e) and 816.86 (g) and (h) and includes a similar provision from Section 816.71(b)(2).

Two commenters requested inclusion of a requirement that refuse piles meet a minimum static safety factor of 1.5 as well as requiring impounding structures to meet a 1.5 safety factor. The commenters pointed out that under MSHA rules, refuse piles with slopes of less than 2h:1v which are built in 2-foot lifts would not necessarily be required to meet a minimum factor of safety. One of the commenters suggested that a demonstration of stability at a slope of 3h:1v be required. Several other commenters urged that all waste banks be constructed with a 1.5 safety factor as an indication of proper design. A commenter said that there are times when such fills may not be stable depending on the amount of fines and moisture in the material. Another commenter said no fill design should be approved unless it is demonstrated to be stable with a factor of safety of at least 1.5. The comments suggesting that all waste disposal facilities meet a factor of safety of 1.5 have been accepted and added to the final rule as a design requirement in new Section 816.81(c)(2). This is one provision that augments MSHA's standards.

SECTION 816.81(d)

Final Section 816.81(d) requires that sufficient foundation investigations and laboratory testing of foundation material be performed in order to determine the design requirements for foundation stability. The analyses of the foundation conditions must take into consideration the effect of underground mine workings, if any, upon the stability of the disposal facility. The final rule is adopted from proposed Sections 816.85(e) and 816.86(h).

One commenter proposed adding a new section containing the same provisions as proposed Section 816.71(a)(2) of the excess spoil rules. In effect, this would apply requirements for testing and designing of foundation and abutments to coal mine waste facilities as well as to the excess spoil fills.

This comment was accepted and the provision included in the final rule in Section 816.81(d).

A commenter pointed out that the testing requirement for refuse piles in proposed Section 816.85(e) was confined to foundation materials. In the commenter's view, the materials used in the embankment, not just in the foundation of it, should also be analyzed.

Because of the importance of a refuse pile's foundation stability, specific provisions have been included relating to foundation evaluation. Inclusion of a section on foundation evaluation, however, is not intended to preclude necessary testing of the materials used in the embankment the stability of which must also be assured. The appropriate type and extent of embankment material testing can be determined by the qualified engineer under final Section 816.85(c). Inclusion of a section specifically related to embankment material testing is not considered necessary in the final rule.

SECTION 816.81(e)

Under final Section 816.81(e), should any examination or inspection disclose a potential hazard, the regulatory authority must be promptly notified of the finding, and of the emergency procedures formulated for public protection and remedial action to be taken. If procedures adequate to protect the public cannot be implemented by the operator, the regulatory authority must be notified immediately. The regulator authority must then notify the appropriate agencies that other emergency measures are required to protect the public. Final Section 816.81(e) adopts proposed Section 816.82(b) with editorial revision, and it is made applicable to all coal mine waste disposal facilities.

One commenter thought the requirements of the proposal were unclear in that they referred to an emergency plan, yet did not require the development of such a plan. The commenter suggested that the emergency plan should be prepared before a potential hazard develops.

The use of the language "emergency plan" in the proposed rule was intended to refer to the plan that is formulated to respond to any observation that a hazard may exist. Because the great majority of coal mine waste disposal facilities do not pose any significant threat to the public, the final rule does not include a general requirement that the operator develop an elaborate emergency plan in every case. Since prompt or immediate notification is required, the regulatory authorities will be in a position to implement necessary emergency procedures and ensure that appropriate actions are taken as needed. Additional requirements for development of emergency response plans are included in MSHA's rules which must also be met.

A commenter noted that proposed Section 816.82(b) imposed the responsibility on the operator of promptly notifying the regulatory authority of potential hazards, but that there was no requirement that the regulatory authority provide names and addresses of persons to contact, especially during non-business hours. The commenter also noted that operators, all too often, are unaware of the existence of "appropriate" agencies and operators should be supplied with phone numbers, etc., for these agencies.

The final rule has not been changed based upon this comment. OSM experience indicates that in nearly every case operators are sufficiently familiar with the local regulatory authority personnel to be able to provide the necessary notifications without further elaboration in the final rule. Under the circumstances that exist within a particular locale

or State, a regulatory authority may deem it appropriate to provide operators with names and addresses of persons that may be contacted during nonbusiness hours. However, no change in the final rule is considered necessary to accommodate such circumstances.

One commenter cited the failure of a slurry impoundment and the need for emergency diversion construction that would have temporary environmental impacts as a situation in which the agency personnel may have to make hard decisions in which short-term losses are balanced against long-term gains. The commenter used this theoretical situation to show the need for regulatory authority personnel to be trained in handling coal field emergencies and the need for the contact person at the regulatory authority to have the authority to make emergency decisions.

OSM agrees that there may be situations where, during emergencies, decisions may have to be made to balance short-term and long-term problems and solutions. OSM supports and encourages the training of regulatory authority personnel in handling coal field emergencies.

SECTION 816.81(f)

Previous Section 816.88 provided for coal processing waste to be returned to underground mine workings in accordance with a disposal program approved by the regulatory authority and MSHA under Section 784.25 of this chapter.

As proposed, final Section 816.81(f) revises the previous rule to clarify that "coal mine waste" may be returned to underground mine workings under a waste disposal program designed according to Section 784.25 of this chapter and jointly approved by the regulatory authority and MSHA. The proposed terminology change of "coal processing waste" to "coal mine waste" would allow both coal processing waste and underground development waste to be returned to underground mine workings.

Because the definition of coal mine waste under the final rule includes underground mine development waste, the additional reference to Section 784.19 in previous Section 817.88 is redundant of the requirement in Section 784.25 and is not needed. It has therefore been deleted as was proposed in Section 816.88.

A commenter pointed out that MSHA rules do not provide for approval of plans to return coal mine waste to underground workings. The final rule has not been changed from the proposal. All underground mining activities require approval and/or coordination with MSHA. The final rule ensures such coordination and is in accordance with sections 516(a) and 515(b)(12) of the Act.

The U.S. Environmental Protection Agency asked OSM to note in this rule that disposal of coal mine waste in underground mine workings must be in compliance with any applicable requirements of the Underground Injection Control Program promulgated under Part C of the Safe Drinking Water Act (Pub. L. 93-523, as amended, *42 U.S.C. 300f* et seq. ) The list of Class V wells in 40 CFR 146.05(e) includes sand backfill and other backfill wells used to inject a mixture of water and sand, mill tailings or other solids into mined out portions of subsurface mines whether what is injected is a radioactive waste or not. This provision may apply to the underground disposal method described in Section 816.81(f). At this time, the only requirements that apply to Class V wells are (1) the inventory reporting requirement in 40 CFR 122.37(c)(1); and (2) the general prohibition against contamination of underground sources of drinking water in 40 CFR 144.12.

**SECTION 816.83 - COAL MINE WASTE: REFUSE PILES**

Final Section 816.83 contains standards that apply to coal refuse piles which supplement the general standards of Section 816.81. It also requires that refuse piles also meet MSHA requirements at 30 CFR 77.214 and 77.215. Referencing of these MSHA standards makes them enforceable as part of OSM's permanent program regulations.

Section 816.83, by reference to 30 CFR 77.214, includes the four requirements of that section. Among these are the requirements that the refuse pile be located a safe distance from all underground facilities and surface installations and that the refuse pile not be located over abandoned mine openings or streamlines. Also 30 CFR 77.214 requires

clay or inert material to be placed between new refuse piles and old refuse piles or exposed coal beds. Roadways to refuse piles must be fenced or otherwise guarded to restrict the entrance of unauthorized persons.

Among the ten referenced requirements of Section 77.215 is the requirement for layering and compaction of the waste to minimize flow of air through the pile. Under Section 77.215(b), new refuse is prohibited from being placed on an existing burning pile except as a fire control or extinguishing measure. Under Section 77.215(c), sealants, such as clay, must be used to seal the surface of piles to inhibit further spontaneous ignition. Under Section 77.215(d), such seals must be protected from erosion by drainage facilities to protect their integrity. Under Section 77.215(e), impeding or impounding surface water flow is prohibited. Under Section 77.215(g), addition of extraneous combustible materials to the piles, such as waste wood, paper, trash or lubricants, is not allowed.

Construction of the refuse pile in compacted lifts of 2-feet maximum thickness is required under Section 77.215(h) and the external slopes cannot exceed 27 degrees. However, MSHA's District Manager may approve thicker layers and steeper slopes when maintenance of a 1.5 minimum safety factor is supported by engineering data.

Under Section 77.215(i), foundations for new refuse piles and additions to existing refuse piles must be cleared of all vegetation and undesirable material that would adversely affect stability. Under Section 77.215(j), all fires in refuse piles must be extinguished and the method used must be in accordance with a plan approved by the MSHA District Manager.

Three commenters supported using the MSHA refuse pile construction standards under Sections 77.214 and 77.215 (a)-(h) in the OSM rules. The commenters felt the move to include MSHA rules was a more realistic approach, used rules that have withstood the test of time and eliminated duplication. Other commenters objected to the use of MSHA rules and argued that OSM rules should be stronger and more broadly aimed than the MSHA rules.

A commenter stated that it was an erroneous assumption that MSHA rules protect the environment or the public health and safety. The commenter asserted that MSHA's mandate only extends to protection of miner's health and safety at the mine site.

Although these final rules reference MSHA requirements for construction of coal refuse piles they also include a number of additional requirements in Section 816.81, which were discussed earlier, and in Section 816.83, which are discussed below. The rules recognize that the goals of the Surface Mining Act are achieved in part by rules already promulgated by MSHA. The standards included in MSHA's rules, which were promulgated primarily to protect miners, also help to protect the environment and public health and safety. Thus, OSM may reference MSHA's standards in its rules governing these same topics while at the same time reducing unnecessary conflict and duplication between regulatory schemes.

A commenter pointed out that MSHA's rule in Section 77.214 does not prohibit refuse piles from being located over streams as was stated in the preamble discussion on proposed Section 816.85(a).

MSHA rules require that a refuse pile not be located over abandoned openings and streamlines. The statement in the proposed rulemaking notice was in error.

One commenter protested that the inclusion of a reference to Section 77.215(h) in Section 816.85(a) would allow the construction of refuse piles in lifts greater than 2 feet thick. In the commenter's view, such an allowance is wrong from an engineering standpoint because, even with a 2-feet thick lift requirement, adequate compaction is difficult to achieve. Another commenter supported controlled placement of dry waste in 2-foot thick compacted lifts. A third commenter noted that although, as stated in the proposed rule *(47 FR 26613)*, some refuse left in nonstructural, uncompacted lifts of greater than 5 feet have existed without burning, OSM did not indicate that spontaneous ignition has occurred within 10 days in refuse left in piles of less than 5-foot lifts.

OSM has retained reference to MSHA rules to govern lift thickness. While placement of coal mine waste in 2-foot thick lifts may be appropriate in most instances, there are also situations where such a restriction will not be necessary to achieve sound waste disposal. Additionally, as noted by one commenter, lift thickness alone is not necessarily the

most important feature in preventing combustion. The final rule ensures the stability and sound disposal of the coal mine waste regardless of whether or not an exception is granted from the 2-foot lift requirement. Under any case, the final compacted fill must satisfy a safety factor of 1.5 and the disposal facility must be designed to prevent combustion.

A commenter objected to the statement in the preamble to proposed Section 816.83 that "any material handling technique is acceptable as long as the material is placed in 2 foot lifts and compacted." The commenter continued by stating that if material 2 feet in diameter was being placed, little compaction would be obtained and that compaction has little meaning unless it is related to some standard such as Proctor or Modified Proctor measurement.

If the waste material is 2 feet or larger in diameter, under 30 CFR 77.215(h) the MSHA District Manager may approve lifts thicker than 2 feet and with slopes exceeding 27 degrees provided that engineering data substantiates that a minimum safety factor of 1.5 will be attained. Additionally, it is not necessary to specify a numerical compaction standard. The primary purpose of compaction is to ensure stability of the facility. Compaction also has the benefit of minimizing air movement through the fill. However, coal mine waste disposal facilities left in uncompacted lifts 5 feet thick have existed for many years without stability or burning problems (U.S. Mining Enforcement and Safety Administration, 1975, p. 8.69). The specific numerical requirement for compaction is thus more appropriately determined based upon the particular design, site conditions and waste characteristics. The final rule provides this flexibility while ensuring stability and compaction as necessary. Thus, the final rule does not include a specific compaction standard other than the MSHA requirement.

A commenter argued that difficulties may arise in complying with the explicit construction requirements for coal mine waste disposal where combinations of waste and spoil are disposed of in the same area.

OSM recognizes that where coal mine waste is disposed of in a backfill or excess spoil disposal area, more restrictive requirements may apply to the entire disposal area. No change, however, has been made in these final rules based upon this comment. The final rule will help ensure that coal mine waste is properly disposed of regardless of where the final disposal location may be.

SECTION 816.83(a)

Final Section 816.83(a) provides that if the disposal area contains springs, natural or manmade water courses, or wet weather seeps, the design shall include diversions and underdrains as necessary to control erosion, prevent water infiltration into the disposal facility, and ensure stability. Underdrains must comply with the requirements of Section 816.71(f)(3). Runoff from areas above the refuse pile and runoff from the surface of the refuse pile must be diverted into stabilized diversion channels designed to meet the requirements of Section 816.43 and to safely pass the runoff from a 100-year, 6-hour precipitation event. Uncontrolled surface drainage may not be diverted over the outslope of the refuse pile.

The water control measures of the final rule have been adopted from proposed Section 816.83, except that the proposal which would have merely required control of surface runoff has not been adopted in favor of retaining the diversion channel requirement. Editorial revisions have been made to increase understanding and to more closely parallel similar provisions applicable to the disposal of excess spoil.

In response to one EPA comment, OSM has added language clarifying that the runoff diverted from undisturbed areas need not be commingled with runoff from the surface of the refuse pile.

One commenter maintained that not all coal seams and coal mine waste are acidic or toxic as implied in proposed Section 816.83(a) and that in certain instances, water from refuse piles is in good or satisfactory condition. Therefore, the commenter suggested the requirements be revised to provide that the subdrainage system be covered so as to protect against the entrance or leachate from "any coal mine waste which is shown to be acidic or toxic."

OSM has not accepted the change proposed by the commenter because caution is necessary when dealing with coal mine waste. Also the objective of the subdrainage system is primarily to help ensure stability and is not related

solely to the control of potentially acidic or toxic drainage.

One commenter concurred with the proposed change in the diversion design storm from a 100-year, 24-hour event to a 100-year, 6-hour event. Two other commenters disagreed with the change. One of the commenters believed that the proposed change would allow smaller diversions which would lead to certain failure of the channel. The other commenter contended that there is no justification to lower the storm event for design of diversion channels in Section 816.23(b) to a 100-year, 6-hour event and that MSHA has no particular expertise in design of surface diversion structures that would justify reliance on the 6-hour event. The commenter believed the previous rule standard of the 100-year, 24-hour event would produce more long-term protection because the former standard is more likely to avoid ditch scouring and overtopping, thereby, reducing the chance of infiltration into the refuse pile.

These commenters provided no data to support their conclusions. The change from the 100-year, 24-hour event, to the 100-year, 6-hour event has been made to be consistent with MSHA requirements and the standards for excess spoil, valley, and head-of-hollow fills. Reliance upon the 100-year, 6-hour event is a safety standard that has proven successful. (See MSHA's 1979 Design Guidelines for Coal Refuse Piles and Water Sediment or Slurry Impoundments and Impounding Structures.)

OSM recognizes that the 24-hour duration storm usually results in a runoff volume and peak somewhat higher than the 6-hour storm for the same area (see *44 FR 15207).* However, it also has been reported that in some watersheds, the 100-year, 6-hour event can result in a higher peak flow. For a given storm frequency, the time of concentration and watershed shape can be more influential in determining the peak flow than the storm duration. In most cases the differences in any increased volume of peak flows will be minor from a practical design and construction standpoint. Any computed increase in peak flow volume would most likely not result in any significant change in flow depth or flow velocities and, correspondingly, any alteration in channel design. For instance, in a rock riprap-lined channel, velocity increase from resulting increase in peak flows would not likely alter the specified rock size used in the design. Therefore, the change in precipitation event for design of diversions on refuse piles will not result in any significant change in the level of protection afforded.

A commenter misinterpreted the reference by OSM to the MSHA recommendation of the 100-year, 6-hour storm event for the design capacity of diversion ditches in proposed Section 816.83(b). The commenter said OSM was incorrectly claiming that MSHA advocated that OSM adopt the standard. MSHA did not advocate the adoption of their standard. MSHA made a public recommendation which it published in a set of design guidelines. OSM proposed using the MSHA standard for consistency and because it establishes an adequate level of protection.

One commenter felt proposed Section 816.83(b) presented a dilemma in that many refuse piles are constructed with the top edge sloping towards a hillside in order to minimize erosion. In doing so, however, it could result in the pile being considered an impoundment by OSM's definition.

If the final slope of the top of a refuse pile resulted in the creation of an impoundment, then the commenter is correct in concluding that the requirements for impounding structures in Section 816.84 and for impoundments in Section 816.49 would have to be met. A properly designed surface drainage system from a refuse pile should remove the drainage water from the top of the fill and not result in the creation of an impoundment. OSM foresees no conflict with this design technique and the definition of impoundments. Final Section 816.83(c)(3) prohibits permanent impoundments on completed refuse piles.

One commenter argued against the removal of the requirement in previous Section 816.83(b) to divert all surface runoff from the area above the refuse pile and from the refuse pile surface around the fill. The commenter suggests that the new rule will allow methods for controlling surface drainage which threaten the stability of the fill. Furthermore, the commenter argued that diverting surface water around the fill is in the operator's interest since infiltration into it brings water into contact with deleterious substances in the fill which would necessitate treatment of the discharge.

Another commenter believed it is essential that OSM provide for mandatory diversion of all surface drainage around refuse piles.

The final rule has included provisions similar to those in the previous rule requiring diversion of runoff from areas above the refuse pile. While such diversion may not always be necessary to ensure the stability of the fill, the requirement will also help minimize water contact with any potentially acid-forming or toxic-forming materials that may be in the coal mine waste. Two commenters recommended that the flood plain capacity be included in the diversion capacity when the water stage elevation and velocity from a 100-year, 6-hour precipitation event will not interfere with embankment stability and public health and the environment is not endangered. One of these commenters also proposed including the capacity of existing channels and banks in the design of diversion channels.

OSM agrees. However, no change is deemed necessary in the final rule. Revised Section 816.43 will provide that for purposes of meeting the required design storm, the combination of channel, bank and flood-plain configuration can be considered in the diversion design.

One commenter recommended changing the word "diversion channel" to "conveyance structure" in proposed Section 816.83(b) and that the word "channel" be deleted. These changes would accommodate the use of other types of drainage systems such as lined ditches, conduits and other designs as discussed by OSM in the preamble to the proposed rule. OSM disagrees. For consistency with other rules, the words "diversion channels" have been retained in the final rule. This language is not, however, intended to limit the use of lined ditches or other designs, provided the standards of Section 816.43 are met.

SECTION 816.83(b)

Final Section 816.83(b) provides for surface area stabilization through revegetation of disturbed areas. Diversions may be riprapped or lined with alternative materials rather than being vegetated. The use of alternative materials as diversion liners follows the requirements of Section 816.43 and increases the design engineer's capacity to meet particular site needs. Because some confusion resulted from the question on whether diversions were part of the disturbed area and, therefore, must be vegetated, this section has been reworded to clarify this point. The final rule incorporates the provisions of proposed Section 816.83(c).

A commenter pointed out the inconsistency in proposed Section 816.83(c) with respect to diversion ditches being part of a disturbed area for which there is a vegetation requirement, but for which there is an alternative to revegetation. Another commenter stated that diversion channels must be stabilized and that an alternative to riprapping and vegetation must be controlled by the regulatory authority.

OSM has accepted these comments and changed the final rule to avoid misinterpretations. The change clarifies that diversion channels may be riprapped or otherwise protected rather than revegetated. The method of lining the ditches must be part of the diversion design submitted as part of the permit application. Approval of the permit application by the regulatory authority and issuance of the permit constitutes approval of the diversion liner.

A commenter proposed adding to the provisions of the rule that temporary refuse piles use some other procedures approved by the regulatory authority to minimize surface erosion. The commenter pointed out that revegetation and adding a topsoil layer to a temporary pile is not very feasible. The commenter advocated that some type of alternative slope protection procedures should be allowed, particularly if the coal mine waste is to be disposed of in the pit prior to reclamation.

The final rule provides that slope protection must be provided to minimize erosion. This slope protection can consist of a variety of techniques and need not include topsoiling and revegetation during construction or of temporary piles, although a temporary cover may be appropriate in some circumstances. The refuse pile need not be fully revegetated in accordance with Sections 816.111-816.116 and 817.111-817.116 until completion of construction. Thus, the commenter's suggestion is allowed under the final rule and no further change is required.

Proposed Section 816.83(d) would have included a provision requiring the control and minimization of water pollution through reference to the hydrologic balance protection provision of Section 816.41. Since Section 816.41

will apply by its own terms to all parts of the permit area, including refuse piles, it is not necessary to include reference to it in Section 816.83. Proposed Section 816.83(d) has, therefore, not been adopted in the final rule. No substantive change is intended by this deletion.

Two commenters urged that reference to existing Sections 816.52 and 816.55 on hydrologic balance should not be deleted from Section 816.83(d) because they apply to all operations. The commenter noted that OSM cannot ignore the requirement of Section 816.42(a), that all surface drainage from disturbed areas must pass through sediment ponds until water quality standards are met unless an exemption is granted under Section 816.42(a)(3). A State regulatory authority felt OSM was exempting the coal mine waste discharge from the specific provisions of Sections 816.42 and 816.46 and objected to this provision.

OSM agrees that proposed Section 816.83(d) was misleading by referring to one section on protection of the hydrologic balance and not to other applicable sections. Each of these sections is applicable to refuse piles by their own terms and therefore need not be listed in this section as well. Deletion of reference to only one of the applicable sections should help eliminate this confusion.

One commenter felt that coal mine waste materials should not be placed in locations which could cause significant degradation of the hydrologic regime.

OSM agrees. This concern is recognized in Section 816.41, in which material placement practices are listed among aspects of hydrologic protection requiring consideration. Also, the reference to MSHA Sections 77.214 and 77.215 includes other practices to achieve this objective.

SECTION 816.83(c)

Final Section 816.83(c) provides standards for the placement of coal mine waste materials in refuse piles. It includes requirements from proposed Section 816.85.

Several commenters questioned the deletion of the 90-percent compaction requirement in previous Section 816.85(c) from the proposed rule. One commenter took issue with the change because, in the commenter's estimation, the 90-percent dry density standard helps to achieve not only stability, but the prevention of spontaneous combustion, as well as goals indicated by Congress in the legislative history of the Act. The commenter felt that consideration of difficulty in testing should not be weighed against the public safety. Another commenter indicated that the 90-percent compaction figure should be retained and he believed the reason for the change in the requirement is that the coal companies are not able to actually achieve this level of compaction. One commenter agreed with dropping the 90-percent compaction requirement, but called for a statement of proof that the compaction conforms with the degree of compaction assumed in the design analysis of the structure.

The comments suggesting retention of the 90-percent dry density compaction standard have not been accepted. Heterogeneity of coal mine waste material resulting from variations in coal mining techniques, coal cleaning, processes, and coal lithology renders meaningless the application of standard compaction measures designed primarily for comparatively homogeneous construction materials. Change in character of the coal, coal inclusions, roof rock, and bottom strata from coal bed to coal, in a single coal bed, and even within individual mine production sections, causes a wide range of physical and chemical properties of the mined product. Hardness, angularity, particle size, compressive strength, shear strength, and moisture content variations within the waste dictate the prescription of general objectives in consolidation practices rather than the setting of a precise standard which would not consider the characteristics of the material being disposed of.

While the potential variations in materials' properties and testing difficulties render a nationally established numerical compaction standard nearly meaningless, these factors can be considered on a case-by-case basis and necessary features incorporated in the site-specific design to ensure stability and minimize the potential for combustion or the creation of acid-mine drainage. Where a specific compaction level is an important aspect of a design, the inspection and certification requirements of Section 816.83(d) will ensure that appropriate tests and/or

observations are conducted including compaction measurements to support the engineer's certification that the facility is being constructed as designed and in accord with the approved plan.

SECTION 816.83(c)(1)

Final Section 816.83(c)(1) requires the removal of all vegetative and organic materials from the disposal area prior to placement of coal mine waste. Topsoil must be removed, segregated and stored or redisturbuted in accordance with Section 816.22. If approved by the regulatory authority, organic material may be used as mulch or may be included in the topsoil to control erosion, promote growth of vegetation or increase the moisture retention of the soil. Final Section 816.83(c)(1) adopts the requirements of proposed Section 816.85(d).

A commenter questioned the requirement to remove all vegetation and organic materials for refuse pile sites. The commenter suggested leaving the removal determination to the regulatory authority on a site-by-site basis because in some instances the structural integrity need not be affected if not all were removed. The same commenter questioned the requirement to remove all topsoil in proposed Section 816.85(d), explaining that in some areas this may be a minor operation, but asked what should be done in areas with thick topsoils 20 feet deep or more.

Removal of topsoil and organic material is generally consistent with good engineering practices. The requirement is also in accord with the provisions of Sections 515 (b)(5), (b)(13), and (b)(22), and 515(f) of the Act. The necessity and extent of topsoil removal is set forth in final Section 816.22. Additionally, when disposing of coal mine waste, removal of organic material from the disposal area will help lower the amount of combustible material in the fill, help avoid the creation of voids within the fill that could lead to spontaneous combustion or production of acid or toxic mine drainage, and help ensure the long-term stability of the refuse pile. For these reasons, the commenter's suggestion must be rejected. It should be noted that operators must comply with Section 816.83(c)(1), even when it may impose obligations in addition to those in Section 77.215(i) which also pertain to the clearance of vegetation.

SECTION 816.83(c)(2)

Final Section 816.83(c)(2) requires that the final configuration of the refuse pile be suitable for the approved postmining land use. Terraces may be constructed on the outslope of the refuse pile if required for stability, control of erosion, conservation of soil moisture, or facilitation of the approved postmining land use. The grade of the outslope between terrace benches must not be steeper than 2h:1v (50 percent).

No provisions was included in the proposed rule relating to the use of terraces. However, several commenters requested that the provisions of Sections 816.71 and 816.72 for the disposal of excess spoil with were also appropriate as standards for refuse piles not be deleted from the requirements of the final rule. Section 816.83(c)(2) has been included in the final rule in response to these comments. It clarifies the requirements pertaining to the final configuration of the refuse pile and the conditions under which terraces may be used. The reader is referred to the preamble to the excess spoil disposal rule for additional discussion on the use of terraces.

SECTION 816.83(c)(3)

Final Section 816.83(c)(3) prohibits permanent impoundments on the completed refuse pile. Small depressions may be allowed by the regulatory authority if they are needed to retain moisture, minimize erosion, create and enhance wildlife habitat, or assist revegetation; and if they are not incompatible with the stability of the refuse pile.

No provision was included in the proposed rule related to the use of impoundments or depressions on the final refuse pile. However, based upon a commenter's request that applicable portions of Section 816.71 continue to apply to refuse piles, final Section 816.83(c)(3) has been included in the final rule. The reader is referred to the preamble to the excess spoil disposal rule for additional discussion on the use of small depressions.

SECTION 816.83(c)(4)

Final Section 816.83(c)(4) requires the final refuse pile to be covered with a minimum of 4 feet of the best available non-toxic and non-combustible material, in a manner that does not impede drainage from the underdrains. The regulatory authority may allow less than 4 feet of cover material if physical and chemical analyses show favorable conditions for revegetation. The final rule continues the requirements of the previous rule, but differs from the proposed rule ( Section 816.85(g)), which required that the final surface be covered with materials capable of sustaining adequate vegetation and provide environmental protection according to Sections 816.111-816.117.

Two commenters contended that the proposed deletion of the 4 feet of cover requirement did not take into consideration the vegetation being sustained over the long term. Revegetation must be successful over the long term and diverse enough to meet the requirements of Section 515(b)(19) of the Act, according to the commenter. Moreover, covering coal mine waste provides material for vegetation, but also provides a cap to prevent percolation into the coal mine waste and migration of toxic materials out of it. The commenter asserted that both scientific literature and the former rule support the 4 feet of cover requirement.

One commenter concurred with the proposed cover and revegetation requirements while another commenter agreed with replacing the specific 4-foot cover requirement with the more general statement, "as required to assure reclamation." However, continued the commenter, this places a much higher standard of proof upon the operator to demonstrate the appropriate depth of cover.

The final rule in Section 816.83(c)(4) continues to apply the requirement that a coal refuse pile be covered by 4 feet of the best available material. Less than 4 feet of cover may be allowed by the regulatory authority if there is a demonstration that the pile will meet the revegetation and environmental protection provisions in revised final Sections 816.111 through 816.116. This requirement will ensure that the environmental protection required by sections 515 (b)(11) and (b)(19) of the Act is provided in every case.

The final rule is not intended to require the operator to create borrow areas to obtain cover materials, unless such borrow areas are necessary to prevent combustion or ensure that the revegetation requirements are met. However, OSM agrees with the commenters that suggested that additional care must be taken when closing a coal mine waste disposal facility than for other backfilled areas. Historically, coal mine waste areas that were not properly reclaimed were difficult to revegetate and often had a potential for acid or toxic mine drainage. As a general rule, it is in accord with good engineering practice to use the best available material as a cover, rather than burying that material within the refuse pile.

On the other hand, OSM recognizes that in certain circumstances 4 feet of cover may not be necessary to meet the environmental protection requirements of the Act. The final rule thus continues the previous rule which sets a cover requirement as a general standard, but allows the regulatory authority to consider site-by-site variations.

SECTION 816.83(d)

Final Section 816.83(d) establishes requirements for inspection of refuse piles. It requires that a qualified registered professional engineer or other qualified professional specialist inspect the fill during construction and the engineer certify that the fill has been constructed and maintained as designed and in accordance with the approved plan. Appearances of instability and other hazardous conditions must be reported. These inspection requirements were proposed in Section 816.82.

Minor revisions have been made to the final inspection requirements to parallel similar inspection requirements for excess spoil disposal facilities. Among the revisions are the addition of a provision in the opening paragraph that the qualified engineer or specialist be experienced in the construction of similar earth and waste structures; revision of the requirement for inspections during placement of the waste material (the final rule requires regular inspections to be made during placement of fill, but does not provide that placement of fill must be considered a critical construction period); addition of provisions requiring photographs of underdrains prior to coverage with coal mine waste; and

other minor and editorial revisions. The reader is referred to the preamble to the revised final excess spoil rules for additional discussion relative to these changes *(48 FR 32910,* July 19, 1983).

A commenter took issue with the statement in the preamble to the proposed rule that the MSHA certification under Section 77.215-3(a) may suffice for the inspection findings under this paragraph *(47 FR 26601).* This commenter also stated that as much as 6 months can lapse before the District Manager is required to be notified that a hazardous pile has been modified.

The statement in the preamble to the proposed rule merely indicated that the same report may be submitted to both MSHA and the surface mining regulatory authority with regard to hazards, provided that the report included all information required under the surface mining regulatory program. The commenter appears to have misunderstood the proposed preamble discussion. No change in the rules has been made in response to this comment.

Proposed Section 816.82(a) provided for the inspection of all refuse piles by a qualified registered professional engineer or other qualified professional specialist who is under the direct supervision of the responsible qualified registered professional engineer. This requirement is included in the first paragraph of final Section 816.81(d).

One commenter states that the same refuse pile inspections should be adequate for both MSHA and OSM. Requiring similar inspection requirements for both MSHA and OSM reduces duplicative efforts. In addition, confusion at the disposal site is reduced with a potential for decreased costs and accidents at the site.

Another commenter stated that MSHA does not require qualified persons to inspect refuse piles. MSHA does, however, require qualified persons to inspect impoundments of a size which they regulate.

OSM recognizes that there is an overlap between the MSHA inspection requirements and the inspection requirements of this final rule. The suggestion that OSM accept the MSHA inspection requirements as satisfying the requirements under the surface mining regulatory program has not been accepted. The MSHA rules are especially concerned with the safety of large impoundments. The relationship between the MSHA inspection requirements for impoundments and OSM's rules is addressed in the final rule dealing with impoundments. Because an impounding structure is part of an impoundment, the inspection requirements for impoundments will also apply to coal mine waste impounding structures. Requirements, in addition to those imposed by MSHA, are appropriate for inspection of refuse piles under the surface mining regulatory program. For this reason, final Section 816.83(d) continues to include specific requirements related to inspection of refuse piles that may exceed those required by MSHA.

Two commenters questioned the meaning of the word "qualified" in relation to the requirement that refuse piles shall be inspected by a qualified registered professional engineer or other qualified professional under the direct supervision of the responsible qualified registered professional engineer. One commenter wondered what would make a person qualified and how the engineer can be called "responsible" when conditions at the mine site are the responsibility of the operator. The other commenter contended that the provision for a qualified professional specialist to conduct refuse pile inspections is vague without indicating what fields of expertise such a person must possess and that requiring such a person to be under the direct supervision of the engineer is not a measure establishing much accountability since the engineering profession is not strongly self-policing.

The generally accepted meaning of "qualified person" is a person who is reliable and has the necessary background and expertise to conduct the necessary inspections. The term "qualified" implies some further qualification beyond the normal professional engineering registration. OSM has found through its enforcement activities that some practicing registered professional engineers do not have sufficient experience to certify all phases of the design and construction of a facility (Tipton, 1981). Therefore, with respect to coal mine waste facilities, the added requirement that the engineer not only be a registered professional engineer, but also be experienced in the design of similar earth and waste structures is justified.

OSM agrees that the operator bears the statutory responsibility for mine-site conditions. The final rule does not use the term "responsible" when referring to the engineer. This is not to imply, however, that the engineer does not

continue to be professionally responsible for any inspections that he or she conducts or that are conducted under his or her supervision.

One commenter opposed the change in proposed Section 816.82(a) that would allow persons who are not engineers to make inspections of coal mine waste fills if they are under the direct supervision of the responsible engineer. The expertise and accountability of the professional engineer are cited as critical factors in assuring that the design is being implemented. The previous rule allowed such persons to make such inspections only after they were first approved by the regulatory authority. The commenter asserted that coal mine waste construction is complex and the highest degree of competence is needed in order to adequately perform inspections. The commenter felt that there was a need for the regulatory authority to pass upon a person's competence as an inspector.

Under previous Section 816.82(a) there were no standards for the regulatory authority to determine whether a person who was not a qualified registered engineer was competent to perform inspections of refuse piles. By establishing a requirement that the person, who is not an engineer, be a qualified professional specialist and be under the engineer's direction, a standard of accountability is established which is better than the previous rule. If the regulatory authority is uncertain about the qualifications of a specialist, it may request additional proof of the specialist's background and experience. Thus, under final Section 816.83(d) the regulatory authority will decide how permit applicants are to demonstrate that specialists are "qualified" and adequately experienced to handle the job. This could be done by oral interview, checking references, a written document, reputation or by other means.

One commenter thought proposed Section 816.82(a) was vague in requiring a "specialist" without specifying what field of expertise is required and in stating that the supervision must be "direct" without clarifying whether on-site supervision is required.

The final rule has been revised to indicate that the specialist must be experienced in the construction of similar earth and waste structures. It does not, however, require actual on-site supervision of the qualified specialist by the engineer. The extent of direction or supervision given to the qualified specialist, either on-site or off-site, by the engineer will depend upon the scope of the activities conducted by the specialist and the engineer's needs in making the required inspection certification.

SECTION 816.83(d)(1)

Final Section 816.83(d)(1) provides that inspections shall be at least quarterly throughout construction and during critical construction periods. The rule lists a minimum of four critical construction periods when inspections must be made: (i) Foundation preparation, including removal of all organic material and topsoil, (ii) placement of underdrains and protective filter systems, (iii) installation of surface drainage systems, and (iv) the final graded and revegetated facility. Regular inspections must also be made during placement and compaction of coal mine waste material. Inspections may terminate when the refuse pile has been final graded and revegetated or at a later time required by the regulatory authority. In hazardous situations, more frequent inspections may be required. The final rule generally follows proposed Section 816.82(a)(1), except for revisions to more closely parallel similar inspection requirements for excess spoil fills; simplification of the language providing for more frequent inspections in hazard situations; and extending the inspections until the facility has been revegetated.

A commenter suggested adding the words "when appropriate" before the proposed sentence that listed the critical construction periods for inspection of the disposal site. The commenter recommended the change because not all of the precautions are required in every situation and this suggested language change would provide flexibility to the engineer. OSM has not accepted the suggested language because inspections must be made during these stages of construction. If for some reason, one of the stages is not part of the construction sequence, it is understood there would be no requirement to inspect an aspect not included in the design of the disposal site.

Two commenters suggested that requiring inspections during removal of "all" organic material and topsoil implies that an inspector must be present for the whole length of those operations. The commenters indicated such a requirement is unnecessary and recommended that the word "all" be deleted. They did agree it is important that the site be inspected to see that undesirable materials are removed.

The provision in proposed Section 816.82(a)(1) was not intended to require that an inspector be present during the entire time that organic material and topsoil are being removed. The term "all" is meant to refer to the material being removed not the time of inspection. An inspection upon the completion of the clearing, grubbing and topsoil removal operation would satisfy this requirement.

Another commenter proposed changing the designated critical construction periods by replacing the first period, "Removal of all organic material and topsoil," with "Site preparation." The commenter also asked for the deletion of inspections during periods of "(iv) placement and compaction of fill materials," and "(v) revegetation." The commenter felt that "site preparation" is a more descriptive term than "removal of all organic material and topsoil" and that placement of the fill material and revegetation is a continuing process throughout the mining operation without a critical construction period, thus making the inspection period length unclear. The commenter believed these inspection items should be treated as part of the regulatory authority's general inspection organization plan and since the site plan has been approved, the inspections should be by a professional engineer on an "as needed" basis.

OSM realizes that many of the operations at a coal mine waste disposal site are of a continuing nature. The final rule revises the proposal by requiring regular inspections during placement of waste, but does not require that the entire time period be considered a critical construction period. OSM agrees that "site preparation" would be an acceptable alternative to the proposed language. To maintain consistency with the rules for disposal of excess spoil, however, this change was not accepted. Rather the final rule requires inspection of the foundation preparation, including the removal of organic material and topsoil.

One commenter, while supporting the addition of a provision allowing the regulatory authority to require more inspections if necessary, suggested it be specified that qualified registered professional engineers conduct the inspections. Another commenter pointed out that the sentence discussing more frequent inspections for hazardous situations is redundant and needs to be improved. A third commenter proposed replacing the word "shall" with "may" to give the regulatory authority discretion on requiring more frequent inspections for hazardous situations.

The final rule is modified to clarify the language and require that more frequent inspections must be conducted if a danger of harm exists to the public health and safety or the environment. The proposed rule was intended to require more frequent inspections when necessary. Under this standard, these inspections are required and the suggestion to use the discretionary "may" has not been accepted. The final rule places the responsibility for such additional inspections on the operator. The regulatory authority will have the flexibility to require more frequent inspections in hazardous situations or to require that they be conducted by a registered professional engineer.

A commenter proposed deletion of the phrase ". . . or at a later time as required by the regulatory authority" from the requirement indicating when inspections may be terminated. The commenter reasoned that, following MSHA's lead, there is no requirement for inspections after the pile has been abandoned in accordance with an approved plan. The commenter continued by stating that since the plan must cover all aspects of long-term stability, further inspection is not necessary. Another commenter wanted clarification of the same sentence to make sure the owner was not responsible for long-term maintenance.

The purpose of the sentence discussed by the commenter is to reserve flexibility for site inspection at the completion of all requirements, or at some later date if necessitated by unusual circumstances or characteristics of a particular site. Therefore, the phrase ". . . at a later time" allows for additional inspections as site conditions warrant until final bond release after the waste disposal facility is completed or the mine is no longer actively operated. The language providing that the regulatory authority may require inspections to continue after final grading and revegetation therefore has been adopted in the final rule.

A commenter recommended a final inspection one year after the refuse pile has been covered and graded. The commenter maintained that a final inspection is necessary to provide a check on the stability and safety of the refuse pile and drainage structures. The final rule more clearly requires an inspection of the completed facility after final grading and revegetation. No specific time frame is provided, however, for this inspection. In addition, the regulatory authority has the authority under the last sentence of the paragraph to require a later inspection if appropriate.

A commenter urged that the previous reference to Section 816.24 should be retained in proposed Section 816.82(a)(1) in order to ensure that inspections continue until the refuse pile is capped with topsoil. The commenter said this reference would ensure that the final configurations will be capable of sustaining vegetation, diverting runoff and will be compatible with natural surroundings. Another commenter pointed out that a statement in the discussion of the previous Section 816.82(a) *(47 FR 26601)* appears to indicate that once a refuse pile is covered with topsoil it does not have to be inspected.

While the reference to Section 816.24 on topsoil redistribution has been deleted, the final rule includes language extending inspections until the facility has been revegetated. The final inspection may be extended beyond this time if required by the regulatory authority.

SECTION 816.83(d)(2)

Final Section 816.83(d)(2) requires the qualified registered professional engineer to provide the regulatory authority with reports certifying that the fill has been constructed and maintained as designed and in accordance with the approved plan and 30 CFR Chapter VII. Such reports, which have to be filed promptly after each inspection, must describe any apparent instability, structural weakness, and other hazardous conditions. This requirement is derived from proposed Section 816.82(a)(3), but has been expended for clarity.

The requirements of proposed Section 816.82(a)(2), which would have required observations necessary to evaluate the potential hazard to human life and property and verify that construction and maintenance are occurring in accordance with the approved plan, has not been adopted in the final rule. These requirements are implicit in the requirements of final Section 816.83(d)(2).

One commenter questioned the deletion of the requirement of the previous rule to conduct tests as may be necessary to evaluate compliance with the approved plan.

While the final rule does not include the language of the previous rule, necessary observations and tests have to be conducted to support the engineer's certification of the inspection. The engineer's certification of the inspection is a feature that was not included in the previous rule. Such a certification will have to be supported by any necessary observations and/or tests. Thus, the same language included in the previous rule is not necessary in this final rule to ensure that observations and tests are conducted where necessary.

Another commenter disputed the deletion in the proposed rule of the requirement in previous Section 816.82(a)(2), which provided for an inspection of the removal of all organic material and topsoil. The commenter urged that the final rule include such a provision.

The final rule does include requirements for inspection at this stage of construction. Removal of organic material and topsoil is considered a critical construction period under Section 816.83 (d)(1) of the final rule. An inspection of each critical construction period and submission of a certified report on the inspection results is required.

Two commenters recommended that in proposed Section 816.82(a)(3), the qualified professional specialist be allowed to certify the inspection reports on the ground that this person is under the supervision of a responsible registered professional engineer. The commenters believed this change would provide uniformity between this paragraph and Section 816.82(a), which allows inspection by a qualified professional specialist, and also they said the registered engineer is liable for his subordinates' actions.

The qualified specialist, who is in the position by reason of training or experience or a combination of both, should be capable of performing the inspection duties under the direction of the qualified registered professional engineer. The qualified specialist may sign the inspection report as the person doing the inspection but it ultimately must be certified by the qualified registered professional engineer with whom inspection responsibilities rest. Imposing a certification responsibility on qualified registered professional engineers, rather than on specialists, adds further assurance that environmental protection performance standards are satisfied.

Another commenter called for deletion of proposed Section 816.82(a)(3) on certification of the inspection findings because the MSHA rules at Section 77.215-3(a) require inspection and certification also. The commenter pointed out that the MSHA rules only require such certification for those refuse piles. The commenter seemed to indicate the procedures in Section 816.82(a)(3) would be very costly and not necessary in most refuse piles.

This suggestion has been rejected. Proposed Section 816.82(a)(3) is retained as final Section 816.83(d)(2) because the provision is needed to assure continued stability of all refuse piles, and protection of the health and safety of people in mining communities.

SECTION 816.83(d)(3)

Final Section 816.83(d)(3) requires that the certified report also include color photographs of the underdrain and sets the specific conditions for those photos. The final rule contains provisions similar to those included for excess spoil fills.

Two commenters recommended that the certification of the refuse pile include a color photographic record of the construction of underdrain system such as was proposed in Section 816.71(a)(4) for excess spoil fills. The photographic record would provide proof of construction of the system in accordance with the rules because the system would be inaccessible for inspection once it is covered with coal mine waste. In the opinion of one of the commenters, the underdrain system for a refuse pile is as critical as that for an excess spoil fill.

The suggestions from these two commenters have been accepted and incorporated in final Section 816.83(d)(3), which requires a color photographic record of underdrain construction and certification that the phases of refuse pile construction proceeded in accordance with the design and of the plan approved under Section 780.25 of this chapter. Photographs provide a valuable visual record of the construction history, since the drain system, once covered, cannot be visually examined again. Photographic documentation is currently used on most large construction projects and should not present special problems for the mining industry.

SECTION 816.83(d)(4)

Final Section 816.83(d)(4) requires that inspection reports be retained at or near the mine site. The final rule is adopted from proposed Section 816.82(a)(3).

Two commenters suggested keeping inspection records at locations other than the mine site. One suggested copies could be kept at various mine offices, such as the engineering department or the foreman's facilities. The other maintains that no inconvenience to the inspector should result if the inspection findings are maintained within "reasonable access."

It was anticipated under the proposed rule that the reports would be retained at the same location where other mine records, such as, licenses, approval plans, current permits and authorization to operate, were kept. OSM has previously ruled that mine records should be available at or near the mine site. Final Section 816.83(d)(4) has been revised accordingly.

One commenter disagreed with OSM reasons for deleting previous Section 816.82(a)(3), which called for the consideration during inspections of steepness of slopes, seepage and other visible factors that are indicators of potential failures. OSM said the provision required no action, set no standard, was only advisory in nature and therefore was unnecessary. The commenter said the previous rule should be retained because it called for proper consideration of key indicators and set a standard of adequacy of inspection in scope and depth. The commenter also said the adequacy of inspection should be monitored by the regulatory authority review of the inspection report at the mine sites.

The final rule has been revised to include a requirement that the inspection report include any appearances of instability, structural weakness, and other hazardous conditions. This revision should accommodate the commenter's

concern. Steepness, seepage and other visible factors will still be among those aspects of the inspection that should be considered in this regard. Copies of the inspection reports must be sent to the regulatory authority as well as be maintained at or near the mine site. Thus, they will be reviewed by the regulatory authority under its inspection and enforcement responsibilities.

**SECTION 816.84 - COAL MINE WASTE: IMPOUNDING STRUCTURES**

Section 816.84, which was proposed as Section 816.86, contains standards that apply to impounding structures that are constructed of coal mine waste or are intended to impound coal mine waste. The requirements of final Section 816.84 supplement the general standards of final Section 816.81 and, because impounding structures are part of impoundments, supplement the standards of Section 816.49.

The introductory paragraph includes requirements from previous Section 816.91(a) and proposed Section 816.86(a). Instead of stating that these rules apply whether the structures were completed before or after adoption of the regulatory program, the final rule simply states that it applies to all new and existing coal mine waste impounding structures with no change in meaning. There were no comments on this paragraph.

Final Section 816.84 combines the requirements from previous Sections 816.91, 816.92 and 816.93 relating to the construction of dams made of coal mine waste or used to impound wastes. Proposed Section 816.86 offered two different alternatives. Option 1 included performance standards from previous Sections 816.91, 816.92 and 816.93. Option 2 deleted the site preparation and diversion ditch requirements and included performance standards from only Sections 816.91 and 816.93. The resulting final rule in Section 816.84 combines features of Option 1 and Option 2. The discussion in this preamble will refer to Option 1, unless otherwise noted.

Several commenters supported Option 2 because they believed that Option 2 provided design flexibility without lessening the effectiveness of the rules. Others supported Option 2 because they felt it decreased duplication of rules, and relied upon commonly accepted engineering practices. Other commenters supported Option 1, believing that the additional requirements of Option 1 would provide definite control of surface water, ensure environmentally sound site preparation, and provide a higher level of engineering requirements.

One commenter opposed Option 2 because, in the commenter's view, it represented an abdication of the responsibility under Section 515(f) of the Act to establish standards and criteria which include engineering and technical specifications to regulate the design, location and construction of coal mine waste dams and embankments. The commenter said Congress made clear OSM was to promulgate regulations to implement Section 515 of the Act and that "the mere reproduction of statutory standards is clearly insufficient." The commenter added that to delete engineering and technical specifications on the basis that they are common practices is wrong because the rules are intended to mandate such practices in a manner enforceable enough to protect and assure public health and safety. Another commenter supported retention of the additional requirements of Option 1, but recommended alternative language.

The final rule retains the performance requirements in proposed Section 816.86 (c) and (d) concerning site preparation and diversion requirements for the impounding structure. Under revised Section 816.49(a), requirements for site preparation are applicable to all impoundments and need not be repeated in this rule. For convenience to the reader a reference to Section 816.49 (a) and (c) is included in Section 816.84(b). Standards for diversions are included in final Section 816.84(c). The specific language adopted in Section 816.84(c) is further discussed later in this preamble.

One commenter opposed the requirement of proposed Option 1 to remove all organic material from the site of the impoundment because the practice can, in some cases, promote runoff. In addition, this person pointed out that removal of organic material behind the embankment increases costs while adding nothing to improving water quality or structural strength. The commenter recommended site-by-site determinations on removal of materials as there are times it may not be practical to remove vegetation from areas covered by the waste if it does not affect the stability of the structure. Another commenter suggested that a qualified registered professional engineer would recognize the situation where it is necessary. A third commenter objected to this provision in its entirety as being unnecessary. A

fourth commenter pointed to these provisions as being redundant with other provisions of the chapter, but gave no specifics.

OSM agrees with the commenters who felt that site preparation is an important feature in the design and construction of impounding structures. Final Section 816.49(a) requires that all vegetative and organic materials be removed and foundations excavated and prepared to resist failure. Cutoff trenches must be installed if necessary to ensure stability. Because the requirements of Section 816.49(a) are applicable to coal mine waste impounding structures, the requirement has not been repeated in this rule.

One commenter contended that the change from design standards for coal mine waste impoundments to a requirement for employment of standard engineering practice is not substantiated by analysis, data or literature.

OSM disagrees. As indicated above under "General Comments," the final rules, while emphasizing the use of performance standards, continue to use design criteria were deemed appropriate. However, overuse of design standards are as likely to result in the underdesign as the overdesign of a structure. The regulatory authority and the design engineer are in the best position to ensure that the standards are applied to meet specific site conditions. The reader is referred to the additional discussion on this issue in OSM's "Final Environmental Impact Statement, OSM EIS-1: Supplement."

A commenter stated that the less stringent review of permits by the regulatory authority, coupled with the changes in design standards for impounding structures and elimination of related permit information from 30 CFR 780.25(e), would increase the uncertainty of adequate designs for coal mine waste impounding structures.

OSM has not proposed to change the information requirements of 30 CFR 780.25(e), nor is there any proposal related to less stringent review of permits by the regulatory authority. The commenter failed to point out specific areas of information loss considered necessary in the permit requirements. Parts 780 and 784 contain special information requirements for coal mine waste disposal. These sections include requirements for submittal of relevant design information and review of that information by the regulatory authority. No change was made in response to this comment.

SECTION 816.84(a)

Final Section 816.84(a) prohibits the use of coal mine waste in the construction of impounding structures unless it has been demonstrated to the regulatory authority that the stability of such a structure will conform to the requirements of Section 816.84 and the use of the coal mine waste will not have a detrimental effect on downstream water quality or the environment due to acid seepage through the impounding structure. The stability of the structure and the potential impact of acid mine seepage through the impounding structure must be discussed in detail in the design plan submitted to the regulatory authority in accordance with 30 CFR 780.25 of the permitting requirements.

Final Section 816.84(a) adopts proposed Section 816.86(b) and revises previous Section 816.91(b) which concerned the stability of the structure and the downstream detrimental effect of any acid seepage. This proposed rule would have deleted the provision in previous Section 816.91(b) which required a demonstration before coal mine waste could be used in the construction of an impounding structure that the structure would be stable and the waste material would not have a detrimental effect on downstream water quality. The proposed deletion was not adopted and the final rule continues to require a demonstration with respect to the potential impacts of the coal mine waste on stability and water quality. This can be satisfied through the requirement that the potential impact of acid mine seepage through the impounding structure be discussed in detail in the design plan to be submitted to the regulatory authority in accordance with Section 780.25.

Two commenters took issue with the emphasis on toxic material seepage in an impounding structure. In the commenter's view the proposed rule overlooked the importance of stability.

As indicated above, the proposal to delete the required demonstration on stability has not been adopted. Thus, the operator will have to indicate in detail in the design plan, not only the potential for acid mine seepage, but also the

stability of the structure.

SECTION 816.84(b)

Final Section 816.84(b) requires that each coal mine waste impounding structure, as well as structures intended to impound coal mine waste, be designed, constructed and maintained in accordance with Section 816.49 (a) and (c). These sections include general and specific requirements applicable to temporary impoundments. It includes provisions from proposed Section 816.86(e). The change in the sections referenced in the final rule reflects revisions to the final impoundments rule. This provision also explicitly recognizes that impounding structures constructed of or impounding coal mine waste may not be retained permanently as part of the approved postmining land use.

One commenter objected to proposed changes in the impoundments rule and noted these changes would be made applicable to coal mine waste impounding structures as well. OSM has revised the proposed impoundments rules in response to comments received on that rule. The reader is referred to the preamble to that rule for additional explanation and responses to comments.

Another commenter proposed adherence to prudent engineering designs and practices in addition to methodologies referenced in previous Section 816.49 (a)(5) and (e) through (i). The commenter said OSM was arbitrarily limiting the engineering methodologies to those contained in two U.S. Soil Conservation Service publications listed in previous Section 816.49. The commenter felt the exclusion of all other methodologies contained in accepted professional engineering texts was unwarranted.

The final impoundments rule does not limit engineering methodologies to those included in the referenced publications. However, the reference to the two U.S. Soil Conservation Service publications was not arbitrary. The legislative history refers to the program administered by the U.S. Department of Agriculture to control erosion in rural areas and these two publications are used as guides in construction of impounding structures. These guides continue to be viable publications as guidance to the coal industry on appropriate considerations in impoundment design.

Section 816.49, by reference to 30 CFR 77.216, includes special requirements applicable to large impoundments and impounding structures. These are structures which impound water, sediment, or slurry to an elevation of 5 feet or more above the upstream toe of the structure and can have a storage volume of 20-acre feet or more; which impound water, sediment or slurry to an elevation of 20 feet or more above the upstream toe of the structure; or which are determined by the MSHA District Manager to present a hazard to coal miners. These structures must meet special requirements, including certification by registered engineer that the design of the impounding structure is in accordance with current, prudent engineering practices, and requirements for examinations and inspections of the structure during construction.

One commenter recommended adoption of MSHA requirements for impounding structures in place of the requirements of OSM's present rule.

The final rule does not rely totally on MSHA's regulations, but does acknowledge areas of overlap and attempts to minimize conflict in these areas by cross-referencing MSHA's requirements. In one instance where MSHA does not set a specific design event for spillways in its rules, but recommends a 100-year, 6-hour event in its guidelines for impoundments and impounding structures, OSM has explicitly adopted that standard. Final Section 816.84(b)(2) includes the 100-year, 6-hour design event for spillways of coal mine waste impounding structures meeting the criteria of 30 CFR 77.216(a). This addition has been made to assure the safety of the public, taking into account the complexity of coal mine waste impounding structures and their potential hazards.

SECTION 816.84(c)

Final Section 816.84(c) requires that spillways and outlet works be designed to provide protection against erosion and corrosion. Inlets must be protected against blockage. This section includes provisions from proposed Section

816.86(i) and previous Section 816.93(b). No comments were received on this provision and it has been adopted as proposed.

SECTION 816.84(d)

Final Section 816.84(d) requires that runoff from areas above the disposal facility or runoff from the surface of the facility that may cause instability or erosion of the impounding structure must be diverted into stabilized diversion channels designed to meet the requirements of Section 816.43 and designed to safely pass the runoff from a 100-year, 6-hour precipitation event. It includes requirements from proposed Section 816.86(d) and previous Section 816.92(b).

The final rule changes the design storm from a 100-year, 24-hour precipitation event, to a 100-year, 6-hour event. One commenter opposed changing the design storm in this section, as well as in Section 816.83. The commenter believed OSM was in error to give the same reasons for the change in design storm criteria for the design of impoundments as it gave for the change in the criteria for diversions above fills. The commenter said the design storm event standard for impoundments was more critical due to the problems caused by water infiltration into an impounding structure as a result of an inadequately sized channel. This commenter preferred retention of the previous 100-year, 24-hour design precipitation event rather than the 100-year, 6-hour event.

One commenter suggested removal of the design criteria in proposed Section 816.86(d) and reliance on prudent, engineering principles in diversion design instead. A second commenter stated that these provisions appear directed toward diversions in the Appalachian Region where water impoundments are constructed in valleys with different conditions than those found in the Midwest. Another commenter opposed the 100-year, 6-hour precipitation event level. This commenter believed that retention of this specific design criteria was unnecessary. A third commenter opposed this paragraph on the basis of redundancy.

The final rule retains both the minimum design criteria for diversions and the change to the 100-year, 6-hour event. This change has been made to be consistent with MSHA requirements. Reliance upon the 100-year, 6-hour event is a safety standard that has proven successful. OSM disagrees with the commenter who thought this requirement might result in inadequately sized channels. The commenter submitted no data to support this conclusion and OSM has not found any support for such a finding. The reader is referred to the preamble discussion on Section 816.83(a)(2) where a similar change has been made in relation to the requirements for refuse piles. The basis for the change in that section is also relevant to this rule.

The design precipitation event is not redundant of other requirements. No diversion requirement is provided for noncoal waste impoundments. However, such diversions are appropriate for impoundments constructed of or impounding coal mine waste to help prevent instability or erosion of the impounding structure and infiltration of excess water into the facility.

Another commenter recommended deletion of the last sentence in proposed Section 816.86(d) which required sediment control measures be provided at discharge points of diversion ditches before the discharge enters natural waters. The commenter felt sediment control was not necessary if the diversion does not carry runoff from disturbed areas. Further, the commenter said the hydrology performance standards adequately cover this condition. OSM has accepted this comment. The provision for sediment control measures for diversions that do not intercept runoff from disturbed areas has not been adopted.

SECTION 816.84(e)

Final Section 816.84(e) requires that impounding structures constructed of or impounding coal mine waste shall be designed so that at least 90 percent of the water stored during the design precipitation event can be removed within a 10-day period. It includes requirements from proposed Section 816.86(j) and previous Section 816.93(c).

One commenter suggested deleting proposed Section 816.86(j) and substituting a new rule requiring an operator to supply a statement on the runoff from the storm for which the structure is designed and the calculations used in

determining such runoff. The commenter indicated that his recommended language was from 30 CFR 77.216-2(11) and recommended that this MSHA rule be adopted to prevent duplication. The commenter cited an example of two design precipitation events occurring within days of each other making the requirements of Section 816.86(j) impossible to meet.

The MSHA rule suggested by the commenter merely requires a statement of the runoff attributable to the storm for which the structure is designed and calculations used in determining such runoff. There is no duplication between this MSHA requirement and Section 816.84(e).

A commenter suggested changing "shall" to "can" in the last phrase of this paragraph to permit the alternative of storing water in case of low precipitation periods. This change has been adopted and the final rule revised accordingly.

PROPOSED SECTION 816.85(f)

Proposed Section 816.85(f) would have allowed variations for the disposal of dewatered fine coal waste (minus 26 sieve size) with approval of the regulatory authority. OSM has not identified features of the final rule requiring such variances. Proposed Section 816.85(f) has, therefore, not been adopted in the final rule. OSM will reconsider this deletion if it finds that this conclusion is in error.

A commenter questioned whether the allowance of a variance for the disposal of dewatered fine coal mine waste would allow for the classification of an impounding structure as a refuse pile.

Under the final rule, if a structure which is constructed of coal mine waste impounds water or other liquid or semi-liquid material, then it is subject to the impounding structures rule in Section 816.84 and the provisions of Section 816.49. If it does not impound water or slurry, then it can be built as a refuse pile in accordance with Section 816.83.

PROPOSED SECTION 816.86(f)

Proposed Section 816.86(f) included a requirement that impoundments have an adequate freeboard to protect the structure. Previous Section 816.93(a)(1), which required at least 3 feet of design freeboard between the lowest point on the embankment crest and the maximum water elevation, has been deleted. In the final rule, freeboard will be governed by Section 816.49(a)(4) which requires that impoundments have adequate freeboard to resist overtopping by waves and by sudden increases in storage volume. There are current prudent engineering practices for designing freeboard height that should be used during design of the structure that would cover this requirement. (Scwab and others, 1966, pp. 311-314)

One commenter opposed the proposed deletion of the requirement of a maximum of 3 feet of design freeboard in previous Section 816.93(a)(1). In the commenter's view, under Section 515(f) of the Act designing standards, such as that of the freeboard of 3 feet, are required in the rules. Pointing to the preamble discussion of the former rule *(44 FR 15218-19,* March 13, 1979), the commenter noted that the requirement was set by the Chief of the Corps of Engineers before his concurrence to the rules would be given. Presumably, the commenter said, the same standard would be required by the Chief of Engineers today. Another commenter indicated it was essential for OSM to publish standards for dam freeboard to prevent cresting of dams. Another commenter argued for a need for defining "maximum water elevation" when establishing freeboard. One commenter agreed that the rules should provide flexibility in establishing freeboard according to site conditions.

The 3-feet freeboard provision is not included in these rules, for which OSM has received the concurrence of the Chief of Engineers. OSM disagrees that a specific freeboard should be set. Under final Section 816.49(a)(2), impoundments must be designed using current, prudent engineering practices and any design criteria established by the regulatory authority. In this context, qualified engineers, working within the stability and storm event criteria will be able to determine freeboard requirements without further specification. Because site-specific conditions determine the water levels, these determinations need to be made on a site-specific basis. Therefore, national freeboard design is

inappropriate. Further, the final rule does not include the term "maximum water elevation" and therefore a definition for this term has not been included.

OSM disagrees with the commenter that felt that Section 515(f) of the Act requires these rules to include a specific numerical freeboard limit. These rules are in accord with the requirements of the Corps of Engineers and are consistent with the requirements of Section 515(f) of the Act which does not mention freeboard.

Another commenter was concerned about the possibility of a storm exceeding the storm event.

OSM agrees that the potential impact of a storm exceeding the design storm event should be considered by the design engineer. In all but the most extraordinary circumstances, the combination of principal and emergency spillways should be able to handle any large storm that does occur.

PROPOSED SECTION 816.86(g) OPTION 1.

Proposed Section 816.86(g) would have required impounding structures to have a minimum factor of safety of 1.5, and a seismic safety factor of 1.2. Equivalent provisions are included in Section 816.49(a)(3), which is applicable to impounding structures. The 1.5 safety factor is also a general requirement for all coal mine waste structures in Section 816.81(c)(2).

Two commenters suggested changing "partial pool" to "design normal pool" because steady state seepage does not occur until the water level reaches the normal pool level. In addition, one of the commenters recommended that partial pool analysis be only for dams built with a nonporous core, a shell of coal refuse or other material.

These comments were accepted and Section 816.49(a)(3) uses the "normal pool" level and not "partial pool." The use of the word "design" is not needed to identify the pool level.

**SECTION 816.87 - COAL MINE WASTE: BURNING AND BURNED WASTE UTILIZATION**

All rules relating to burning or burned coal mine waste (previous Sections 816.87 and 816.86) have been combined in final Section 816.87.

SECTION 816.87(a)

Previous Section 816.86, Coal processing waste: Burning, has been deleted and its provisions have been placed in final Section 816.87 as Paragraph (a). This paragraph provides that when extinguishing coal mine waste fires, the person who conducts the surface mining activities must follow a plan approved by the regulatory authority and MSHA. The plan must ensure that only persons authorized by the operator and who understand the special fire extinguishing procedures shall be involved in extinguishing the fire.

This paragraph reiterates the requirements of Section 77.215(j), but places the responsibility for plan approval jointly upon both agencies.

The word "waste" has been inserted between "mine" and "fires" in the first line of Paragraph (a) of the final version of Section 816.87 to correct a misprint in the proposed version. Two commenters pointed out this inaccuracy. The term should be "coal mine waste fire" to indicate fires in surface deposits and the correction is made in the final rule.

SECTION 816.87(b)

Previous Section 816.87, Coal processing waste: Burned waste utilization, has been modified and includes as Section 816.87(b). The paragraph sets the conditions and approval process for the plan to remove burning or burned coal mine waste from a permitted disposal area. The plan must consider the needs of the local community and be approved by the regulatory authority.

One commenter suggested inserting the word "permitted" between "a" and "disposal" in proposed Section 816.87(b). This comment has been accepted to clarify that these requirements apply to permitted surface coal mining and reclamation operations.

Another commenter suggested that the proposed phrase "which may be created by removal" modifying "potential hazards" be deleted from proposed Section 816.87(b) since in removal operations there may be hazards which can occur other than during the actual removal. This comment has been accepted and the final rule revised accordingly.

The same commenter took issue with the requirement in Section 816.87(b) that the disposal plan for burned and unburned coal mine waste be certified by a "qualified" registered professional engineer. The commenter contended that it would be difficult to find an engineer that would be "qualified" to fight such fires. This comment was accepted and the final rule revised by deleting the certification requirement.

**SECTION 816.89 - DISPOSAL OF NONCOAL WASTES**

Final Section 816.89 provides standards for disposal of noncoal wastes at a surface coal mining operation.

Final Section 816.89(a) specifies that noncoal mine wastes, such as garbage, lumber and other combustibles generated during surface mining activities, must be placed and stored in a controlled manner in a designated portion of the permit area. The placement and storage of noncoal mine wastes must be performed so as to ensure that surface or ground water is not degraded by leachate or surface runoff, that fires are prevented and that the area remains stable and suitable for reclamation and revegetation compatible with the natural surroundings. No comments were received on this paragraph and it has been adopted as proposed.

Final Section 816.89(b) states that final disposal of noncoal mine wastes must be in a designated site in the permit area or a State-approved solid waste disposal area. The site is to be constructed and operated according to sanitary landfill principles which include compacting and covering the noncoal waste materials to prevent combustion and wind-borne waste. Operation of the disposal site is to be conducted in accordance with all local, State and Federal requirements. When the disposal is completed, a minimum of 2 feet of soil cover must be placed over the site, slopes stabilized and revegetation accomplished in accordance with Sections 816.111-816.116.

Several commenters suggested adding the phrase "or a State approved solid waste disposal area," in Section 816.89(b) to allow an operator to take advantage of controlled commercial or publicly operated solid waste disposal facilities within economical haul distance of the mine site.

Because these types of noncoal waste generally are comparable to other heavy industrial plant wastes this proposal is accepted. Such wastes may consist of worn machine parts, metal debris, lubricant containers, used cable, trash paper, worn track parts, spent reagent containers, old batteries, electrical component scrap, etc. A mine in the vicinity of an area served by a community trash disposal landfill may well be advised to take advantage of such a service as long the practice is approved by the regulatory authority and the local and State agencies responsible for waste disposal control. The suggested wording change is incorporated in this rule allowing disposal in approved off-permit area solid waste disposal areas where methods of deposition are controlled.

A second change from the proposal replaces the sentence in paragraph (b) to allow alternative techniques to barriers and to emphasize protection for surface and ground water systems. The language, offered by a commenter, is "Disposal sites shall be designed and constructed to ensure that leachate and drainage from the noncoal mine waste area does not degrade surface or ground water." The alternative to water barriers selected by the mine operator must be approved by the regulatory authority.

SECTION 816.89(c)

Final Section 816.89(c) prohibits deposition of noncoal mine waste in a refuse pile or impounding structure or within 8 feet of any coal outcrop or coal storage area. No comments were received on this paragraph and it is adopted as proposed.

SECTION 816.89(d)

The U.S. Environmental Protection Agency suggested that OSM include a provision that would delineate an operator's responsibility for disposal of noncoal mine waste that would be classified as "hazardous" under section 3001 of the Resource Conservation and Recovery Act (RCRA), Pub. L. 94-580, as amended, and 40 CFR Part 261. OSM has added the requested language that provides that notwithstanding OSM's other rules, any "hazardous" noncoal mine waste must be handled in accordance with Subtitle C of RCRA and any implementing regulations.

As to the relationship of coal mine waste and RCRA, OSM and EPA have undertaken a joint study under Subtitle C of RCRA. Until that study is completed, OSM has no responsibility for regulating coal mine waste under Subtitle C or RCRA.

**REFERENCE MATERIALS**

Reference materials used to develop these final rules are as follows:

Schwab, G. O., Frevert, R. K., and Edminister, T. W. 1966, Soil and water conservation engineering. Second edition. The Ferguson Foundation Agricultural Engineering Series. John Wiley & Sons, New York. 683 pp.

U.S. Mining Enforcement and Safety Administration, 1975, Engineering and design manual -- coal refuse disposal facilities. (Prepared by D'Appolonia Consulting Engineers, Inc., Pittsburgh, Pa.) U.S. Mining Enforcement and Safety Administration report.

U.S. Mining Safety and Health Administration. 1979. Design guidelines for coal refuse piles and water, sediment or slurry impoundments and impounding structures. U.S. Department of Labor, Mine Safety and Health Administration, *IR 1109.* 29 pp.

**IV. PROCEDURAL MATTERS**

National Environmental Policy Act

OSM has analyzed the impacts of these final rules in its "Final Environmental Impact Statement OSM EIS-1: Supplement" (FEIS) according to Section 102(2)(C) of the National Environmental Policy Act of 1969 (NEPA) *(42 U.S.C. 4332*(2)(C)). The FEIS is available in OSM's Administrative Record in Room 5315, 1100 L Street, NW., Washington, D.C., or by mail request to Mark Boster, Chief, Branch of Environmental Analysis, Room 134, Interior South Building, U.S. Department of the Interior, Washington, DC 20240. This preamble serves as the record of decision under NEPA. The following differences are noted between these final rules and the preferred alternative set forth in Volume III of the FEIS:

1. Final Section 816.81(c) includes a design requirement for a long term static safety factor of 1.5 and requirement that the foundation and abutments of a coal mine waste disposal facility must be stable under all conditions of construction. Inclusion of these provisions is more environmentally protective than the preferred alternative.

2. The provision regarding inspection of coal mine waste disposal facilities has been moved from Section 816.81(e) in the FEIS to Section 816.83(d), for coal refuse piles, and to Section 816.84(b) for impounding structures (which references the impoundments rules that contains a similar inspection requirement). This reorganization has no environmental effect.

3. Final Section 816.81(e) imposes emergency procedures for both "examinations" and inspections. This is more protective than the FEIS preferred alternative.

4. Section 816.83(c)(5) in the FEIS, requiring revegetation of refuse piles in accordance with Sections 816.111-816.116, is not adopted. This has no environmental effect because the revegetation rules are applicable by their own terms.

5. Reference to the requirements of Section 77.216, which was contained in the introductory language of Section 816.84 in the FEIS preferred alternative has not been adopted. This has negligible environmental effect because Section 816.49(a), which is referenced in Section 816.84(b), references Section 77.216.

6. Final Section 816.84(b)(1) adds the requirement that coal mine waste impounding structures may not be retained permanently as part of the approved postmining land use. This is more protective than the FEIS preferred alternative.

7. Final Section 816.84(b)(2) imposes a requirement for coal mine waste impounding structures that meet the criteria of Section 77.216 to have spillways that can pass a 100-year, 6-hour precipitation event. This has similar impacts as the FEIS preferred alternative because even without such a requirement in OSM rules, it is contained in guidelines followed by MSHA in approving plans for impounding structures.

8. The general objective in final Section 816.81(a)(5) has been changed to "prevent," rather than "minimize the potential for," combustion as was set forth in the FEIS preferred alternative. This language from the previous rule is part of the no action/minimum action alternative in the FEIS.

9. A new provision Section 816.89(d) has been added regarding the disposal of noncoal mine waste classified as "hazardous" under RCRA. This provision has no environmental effect because RCRA applies to such waste regardless of OSM's rules.

10. The definition of the term "refuse pile" has been revised from the FEIS preferred alternative to provide that a deposit does not qualify as a refuse pile if it impounds a liquid or semi-liquid material. This revised definition is more protective than the FEIS preferred alternative to the extent it clarifies when deposits of coal waste are subject to the provision of Section 816.83 or Section 816.84.

11. The word "sediment" is not included in the final definition of "impounding structure," as was included in the FEIS preferred alternative. This will have no environmental effect because when sediment is impounded in a semi-liquid state, the structure would continue to qualify as an impounding structure.

12. A number of other editorial changes have been made which have little environmental effect.

Federal Paperwork Reduction Act

The information collection requirements in 30 CFR Parts 816 and 817 were approved by the Office of Management and Budget (OMB) under *44 U.S.C. 3507* and assigned clearance numbers 1029-0047 and 1029-0048. This approval is codified under the new Sections 816.10 and 817.10. The information required by 30 CFR Parts 816 and 817 would be used by the regulatory authority in monitoring and inspecting surface and underground mining activities to ensure that they are conducted in a manner which preserves and enhances environmental and other values under the Act. The information required by 30 CFR Parts 816 and 817 is mandatory.

Determinations Under Executive Order 12291 and the Regulatory Flexibility Act

The Department of the Interior (DOI) has examined these rules according to the criteria of Executive Order 12291 (February 17, 1981). OSM has determined that these are not major rules and do not require a regulatory impact analysis because they will impose only minor costs on the coal industry and coal consumers. In addition, the regulations emphasize the use of performance standards instead of design criteria which will allow operators to utilize the most cost-effective means of achieving the performance standards.

The DOI has also determined pursuant to the Regulatory Flexibility Act, *5 U.S.C. 601* et seq., that these rules will not have a significant economic impact on a substantial number of small entities. The regulations will allow small coal operators increased flexibility in meeting performance standards and should especially ease the regulatory authority burden on small coal operators in Appalachia.

Approval of Other Agencies

OSM has obtained all necessary comments and concurrences from other agencies. Sections 501 (a)(B) and (b) of the Act require the written concurrence of the Administrator of the Environmental Protection Agency or regulations relating to air or water quality standards promulgated under the Clean Air Act and the Clean Water Act. The Administrator of the Environmental Protection Agency has concurred in the issuance of this regulation. Section 516(a) of the Act requires the written concurrence of the head of the department that administers the Federal Coal Mine Health and Safety Act of 1969 -- The Assistant Secretary for Mine Safety and Health, U.S. Department of Labor -- in OSM regulations concerning the surface effects of underground mining. The Assistant Secretary for Mine Safety and Health has concurred in the issuance of this regulation. As stated earlier, OSM has also received the written concurrence from the Chief of Engineers that is required under Section 515(f) of the Act.

**LIST OF SUBJECTS**

30 CFR Part 701

Coal mining, Surface mining, Underground mining.

30 CFR Part 816

Coal mining, Environmental protection, Reporting and recordkeeping requirements, Surface mining.

30 CFR Part 817

Coal mining, Environmental protection, Reporting and recordkeeping requirements, Underground mining.

Accordingly, 30 CFR Parts 701, 816 and 817 are amended as set forth herein.

Dated: September 15, 1983.
Joy R. Gwaltney Acting Deputy Assistant Secretary, Energy and Minerals.

**PART 701 -- PERMANENT REGULATORY PROGRAM**

1. In Section 701.5 the definitions listed below are added alphabetically to read as follows:

**SECTION 701.5 - DEFINITIONS.**

* * * * *

COAL MINE WASTE means coal processing waste and underground development waste.

* * * * *

IMPOUNDING STRUCTURE means a dam, embankment or other structure used to impound water, slurry, or other liquid or semi-liquid material.

* * * * *

REFUSE PILE means a surface deposit of coal mine waste that does not impound water, slurry, or other liquid or semi-liquid material.

* * * * *

2. In Section 701.5, the definition of coal processing waste is revised to read as follows:

**SECTION 701.5 - DEFINITIONS.**

* * * * *

COAL PROCESSING WASTE means earth materials which are separated and wasted from the product coal during cleaning, concentrating, or other processing or preparation of coal.

* * * * *

**PART 816 -- PERMANENT PROGRAM PERFORMANCE STANDARDS -- SURFACE MINING ACTIVITIES**

3. Section 816.81 is revised to read as follows:

**SECTION 816.81 - COAL MINE WASTE: GENERAL REQUIREMENTS.**

(a) General. All coal mine waste shall be placed in new or existing disposal areas within a permit area, which are approved by the regulatory authority for this purpose. Coal mine waste shall be placed in a controlled manner to --

(1) Minimize adverse effects of leachate and surface-water runoff on surface and ground water quality and quantity;

(2) Ensure mass stability and prevent mass movement during and after construction;

(3) Ensure that the final disposal facility is suitable for reclamation and revegetation compatible with the natural surroundings and the approved postmining land use;

(4) Not create a public hazard; and

(5) Prevent combustion.

(b) Coal mine waste material from activities located outside a permit area may be disposed of in the permit area only if approved by the regulatory authority. Approval shall be based upon a showing that such disposal will be in accordance with the standards of this section.

(c) Design certification.

(1) The disposal facility shall be designed using current, prudent engineering practices and shall meet any design criteria established by the regulatory authority. A qualified registered professional engineer, experienced in the design of similar earth and waste structures, shall certify the design of the disposal facility.

(2) The disposal facility shall be designed to attain a minimum long-term static safety factor of 1.5. The foundation and abutments must be stable under all conditions of construction.

(d) Foundation. Sufficient foundation investigations, as well as any necessary laboratory testing of foundation material, shall be performed in order to determine the design requirements for foundation stability. The analyses of the foundation conditions shall take into consideration the effect of underground mine workings, if any, upon the stability of the disposal facility.

(e) Emergency procedures. If any examination or inspection discloses that a potential hazard exists, the regulatory authority shall be informed promptly of the finding and of the emergency procedures formulated for public protection and remedial action. If adequate procedures cannot be formulated or implemented, the regulatory authority shall be notified immediately. The regulatory authority shall then notify the appropriate agencies that other emergency procedures are required to protect the public.

(f) Underground disposal. Coal mine waste may be disposed of in underground mine workings, but only in accordance with a plan approved by the regulatory authority and MSHA under Section 784.25 of this chapter.

**SECTION 816.82 [Removed]**

4. Section 816.82 is removed.

5. Section 816.83 is revised to read as follows:

**SECTION 816.83 - COAL MINE WASTE: REFUSE PILES.**

Refuse piles shall meet the requirements of Section 816.81, the additional requirements of this section, and the requirements of Sections 77.214 and 77.215 of this title.

(a) Drainage control.

(1) If the disposal area contains springs, natural or manmade water courses, or wet weather seeps, the design shall include diversions and underdrains as necessary to control erosion, prevent water infiltration into the disposal facility and ensure stability.

(2) Uncontrolled surface drainage may not be diverted over the outslope of the refuse piles. Runoff from the areas above the refuse pile and runoff from the surface of the refuse pile shall be diverted into stabilized diversion channels designed to meet the requirements of Section 816.43 to safely pass the runoff from a 100-year, 6-hour precipitation event. Runoff diverted from undisturbed areas need not be commingled with runoff from the surface of the refuse pile.

(3) Underdrains shall comply with the requirements of Section 816.71(f)(3).

(b) Surface area stabilization. Slope protection shall be provided to minimize surface erosion at the site. All disturbed areas, including diversion channels that are not riprapped or otherwise protected, shall be revegetated upon completion of construction.

(c) Placement.

(1) All vegetative and organic materials shall be removed from the disposal area prior to placement of coal mine waste. Topsoil shall be removed, segregated and stored or redistributed in accordance with Section 816.22. If approved by the regulatory authority, organic material may be used as mulch, or may be included in the topsoil to control erosion, promote growth of vegetation or increase the moisture retention of the soil.

(2) The final configuration of the refuse pile shall be suitable for the approved postmining land use. Terraces may be constructed on the outslope of the refuse pile if required for stability, control or erosion, conservation of soil moisture, or facilitation of the approved postmining land use. The grade of the outslope between terrace benches shall not be steeper than 2h:1v (50 percent).

(3) No permanent impoundments shall be allowed on the completed refuse pile. Small depressions may be allowed by the regulatory authority if they are needed to retain moisture, minimize erosion, create and enhance wildlife habitat, or assist revegetation, and if they are not incompatible with stability of the refuse pile.

(4) Following final grading of the refuse pile, the coal mine waste shall be covered with a minimum of 4 feet of the best available, nontoxic and noncombustible material, in a manner that does not impede drainage from the underdrains. The regulatory authority may allow less than 4 feet of cover material based on physical and chemical analyses which show that the requirements of Sections 816.111-816.116 will be met.

(d) Inspections. A qualified registered professional engineer, or other qualified professional specialist under the direction of the professional engineer, shall inspect the refuse pile during construction. The professional engineer or specialist shall be experienced in the construction of similar earth and waste structures.

(1) Such inspections shall be made at least quarterly throughout construction and during critical construction periods. Critical construction periods shall include at a minimum:

(i) Foundation preparation including the removal of all organic material and topsoil;

(ii) placement of underdrains and protective filter systems;

(iii) installation of final surface drainage systems; and

(iv) the final graded and revegetated facility. Regular inspections by the engineer or specialist shall also be conducted during placement and compaction of coal mine waste materials. More frequent inspections shall be conducted if a danger of harm exists to the public health and safety or the environment. Inspections shall continue until the refuse pile has been finally graded and revegetated or until a later time as required by the regulatory authority.

(2) The qualified registered professional engineer shall provide a certified report to the regulatory authority promptly after each inspection that the refuse pile has been constructed and maintained as designed and in accordance with the approved plan and this chapter. The report shall include appearances of instability, structural weakness, and other hazardous conditions.

(3) The certified report on the drainage system and protective filters shall include color photographs taken during and after construction, but before underdrains are covered with coal mine waste. If the underdrain system is constructed in phases, each phase shall be certified separately. The photographs accompanying each certified report shall be taken in adequate size and number with enough terrain or other physical features of the site shown to provide a relative scale to the photographs and to specifically and clearly identify the site.

(4) A copy of each inspection report shall be retained at or near the minesite.

**SECTIONS 816.85 and 816.86 [Removed]**

6. Sections 816.85 and 816.86 are removed.

7. Sections 816.91, 816.92, and 816.93 are combined, redesignated as new Section 816.84 and revised to read as follows:

**SECTION 816.84 - COAL MINE WASTE: IMPOUNDING STRUCTURES.**

New and existing impounding structures constructed of coal mine waste or intended to impound coal mine waste shall meet the requirements of Section 816.81.

(a) Coal mine waste shall not be used for construction of impounding structures unless it has been demonstrated to the regulatory authority that the stability of such a structure conforms to the requirements of this part and the use of coal mine waste will not have a detrimental effect on downstream water quality or the environment due to acid seepage through the impounding structure. The stability of the structure and the potential impact of acid mine seepage through the impounding structure shall be discussed in detail in the design plan submitted to the regulatory authority in accordance with Section 780.25 of this chapter.

(b)(1) Each impounding structure constructed of coal mine waste or intended to impound coal mine waste shall be designed, constructed and maintained in accordance with Section 816.49 (a) and (c). Such structures may not be retained permanently as part of the approved postmining land use.

(2) If an impounding structure constructed of coal mine waste or intended to impound coal mine waste meets the criteria of Section 77.216(a) of this title, the combination of principal and emergency spillways shall be able to safely pass the 100-year, 6-hour design participation event.

(c) Spillways and outlet works shall be designed to provide adequate protection against erosion and corrosion. Inlets shall be protected against blockage.

(d) Drainage control. Runoff from areas above the disposal facility or runoff from surface of the facility that may cause instability or erosion of the impounding structure shall be diverted into stabilized diversion channels designed to meet the requirements of Section 816.43 and designed to safely pass the round off from a 100-year, 6-hour design precipitation event.

(e) Impounding structures constructed of or impounding coal mine waste shall be designed so that at least 90 percent of the water stored during the design precipitation event can be removed within a 10-day period.

8. Section 816.87 is revised to read as follows:

**SECTION 816.87 - COAL MINE WASTE: BURNING AND BURNED WASTE UTILIZATION.**

(a) Coal mine waste fires shall be extinguished by the person who conducts the surface mining activities, in accordance with a plan approved by the regulatory authority and the Mine Safety and Health Administration. The plan shall contain, at a minimum, provisions to ensure that only those persons authorized by the operator, and who have an understanding of the procedures to be used, shall be involved in the extinguishing operations.
(b) No burning or burned coal mine waste shall be removed from a permitted disposal area without a removal plan approved by the regulatory authority. Consideration shall be given to potential hazards to persons working or living in the vicinity of the structure.

**SECTION 816.88 [Removed]**

9. Section 816.88 is removed.

10. Section 816.89 is revised to read as follows:

**SECTION 816.89 - DISPOSAL OF NONCOAL MINE WASTES.**

(a) Noncoal mine wastes including, but not limited to grease, lubricants, paints, flammable liquids, garbage, abandoned mining machinery, lumber and other combustible materials generated during mining activities shall be placed and stored in a controlled manner in a designated portion of the permit area. Placement and storage shall ensure that leachate and surface runoff do not degrade surface or ground water, that fires are prevented, and that the area remains stable and suitable for reclamation and revegetation compatible with the natural surroundings.

(b) Final disposal of noncoal mine wastes shall be in a designated disposal site in the permit area or a State-approved solid waste disposal area. Disposal sites in the permit area shall be designed and constructed to ensure that leachate and drainage from the noncoal mine waste area does not degrade surface or underground water. Wastes shall be routinely compacted and covered to prevent combustion and wind-borne waste. When the disposal is completed, a minimum of 2 feet of soil cover shall be placed over the site, slopes stabilized, and revegetation accomplished in accordance with Sections 816.111-816.116. Operation of the disposal site shall be conducted in accordance with all local, State and Federal requirements.

(c) At no time shall any noncoal mine waste be deposited in a refuse pile or impounding structure, nor shall an excavation for a noncoal mine waste disposal site be located within 8 feet of any coal outcrop or coal storage area.

(d) Notwithstanding any other provision in this chapter, any noncoal mine waste defined as "hazardous" under section 3001 of the Resource Conservation and Recovery Act (RCRA) (Pub. L. 94-580, as amended) and 40 CFR Part 261 shall be handled in accordance with the requirements of Subtitle C of RCRA and any implementing regulations.

**PART 817 -- PERMANENT PROGRAM PERFORMANCE STANDARDS -- UNDERGROUND MINING ACTIVITIES**

11. Section 817.81 is revised to read as follows:

**SECTION 817.81 - COAL MINE WASTE: GENERAL REQUIREMENTS.**

(a) General. All coal mine waste shall be placed in new or existing disposal areas within a permit area, which are approved by the regulatory authority for this purpose. Coal mine waste shall be placed in a controlled manner to --

(1) Minimize adverse effects of leachate and surface-water runoff on surface and ground water quality and quantity;

(2) Ensure mass stability and prevent mass movement during and after construction;

(3) Ensure that the final disposal facility is suitable for reclamation and revegetation compatible with the natural surroundings and the approved postmining land use;

(4) Not create a public hazard; and

(5) Prevent combustion.

(b) Coal mine waste materials from activities located outside a permit area may be disposed of in the permit area only if approved by the regulatory authority. Approval shall be based upon a showing that such disposal will be in accordance with the standards of this section.

(c) Design certification.

(1) The disposal facility shall be designed using current, prudent engineering practices and shall meet any design criteria established by the regulatory authority. A qualified registered professional engineer, experienced in the design of similar earth and waste structures, shall certify the design of the disposal facility.

(2) The disposal facility shall be designed to attain a minimum long-term static safety factor of 1.5. The foundation and abutments must be stable under all conditions of construction.

(d) Foundation. Sufficient foundation investigations, as well as any necessary laboratory testing of foundation material, shall be performed in order to determine the design requirements for foundation stability. The analyses of the foundation conditions shall take into consideration the effect of underground mine workings, if any, upon the stability of the disposal facility.

(e) Emergency procedures. If any examination or inspection discloses that a potential hazard exists, the regulatory authority shall be informed promptly of the finding and of the emergency procedures formulated for public protection and remedial action. If adequate procedures cannot be formulated or implemented, the regulatory authority shall be notified immediately. The regulatory authority shall then notify the appropriate agencies that other emergency procedures are required to protect the public.

(f) underground disposal. Coal mine waste may be disposed of in underground mine workings, but only in accordance with a plan approved by the regulatory authority and MSHA under Section 784.25 of this chapter.

**SECTION 817.82 [Removed]**

12. Section 817.82 is removed.

13. Section 817.83 is revised to read as follows:

**SECTION 817.83 - COAL MINE WASTE: REFUSE PILES.**

Refuse piles shall meet the requirements of Section 817.81, the additional requirements of this section, and the requirements of Sections 77.214 and 77.215 of this title.

(a) Drainage control.

(1) If the disposal area contains springs, natural or manmade water courses, or wet weather seeps, the design shall include diversions and underdrains as necessary to control erosion, prevent water infiltration into the disposal facility and ensure stability.

(2) Uncontrolled surface drainage may not be diverted over the outslope of the refuse pile. Runoff from areas above the refuse pile and runoff from the surface of the refuse pile shall be diverted into stabilized diversion channels designed to meet the requirements of Section 817.43 to safely pass the runoff from a 100-year, 6-hour

precipitation event. Runoff diverted from undisturbed areas need not be commingled with runoff from the surface of the refuse pile.

(3) Underdrains shall comply with the requirements of Section 817.71(f)(3).

(b) Surface area stabilization. Slope protection shall be provided to minimize surface erosion at the site. All disturbed areas, including diversion channels that are not riprapped or otherwise protected, shall be revegetated upon completion of construction.

(c) Placement.

(1) All vegetative and organic materials shall be removed from the disposal area prior to placement of coal mine waste. Topsoil shall be removed, segregated and stored or redistributed in accordance with Section 817.22. If approved by the regulatory authority, organic material may be used as mulch or may be included in the topsoil to control erosion, promote growth of vegetation or increase the moisture retention of the soil.

(2) The final configuration of the refuse pile shall be suitable for the approved postmining land use. Terraces may be constructed on the outslope of the refuse pile if required for stability, control of erosion, conservation of soil moisture, or facilitation of the approved postmining land use. The grade of the outslope between terrace benches shall not be steeper than 2h:1v (50 percent).

(3) No permanent impoundments shall be allowed on the completed refuse pile. Small depressions may be allowed by the regulatory authority if they are needed to retain moisture, minimize erosion, create and enhance wildlife habitat, or assist revegetation, and if they are not incompatible with stability of the refuse pile.

(4) Following final grading of the refuse pile, the coal mine waste shall be covered with a minimum of 4 feet of the best available, nontoxic and noncombustible material, in a manner that does not impede drainage from the underdrains. The regulatory authority may allow less than 4 feet of cover material based on physical and chemical analyses which show that the requirements of Sections 817.111-817.116 will be met.

(d) Inspections. A qualified registered professional engineer, or other qualified professional specialist under the direction of the professional engineer, shall inspect the refuse pile during construction. The professional engineer or specialist shall be experienced in the construction of similar earth and waste structures.

(1) Such inspection shall be made at least quarterly throughout construction and during critical construction periods. Critical construction periods shall include at a minimum:

(i) Foundation preparation including the removal of all organic material and topsoil;

(ii) placement of underdrains and protective filter systems;

(iii) installation of final surface drainage systems; and

(iv) the final graded and revegetated facility. Regular inspections by the engineer or specialist shall also be conducted during placement and compaction of coal mine waste materials. More frequent inspections shall be conducted if a danger of harm exists to the public health and safety or the environment. Inspections shall continue until the refuse pile has been finally graded and revegetated or until a later time as required by the regulatory authority.

(2) The qualified registered professional engineer shall provide a certified report to the regulatory authority promptly after each inspection that the refuse pile has been constructed and maintained as designed and in accordance with the approved plan and this chapter. The report shall include appearances of instability, structural weakness, and other hazardous conditions.

(3) The certified report on the drainage system and protective filters shall include color photographs taken during and after construction, but before underdrains are covered with coal mine waste. If the underdrain system is constructed in phases, each phase shall be certified separately. The photographs accompanying each certified report shall be taken in adequate size and number with enough terrain or other physical features of the site shown to provide a relative scale to the photographs and to specifically and clearly identify the site.

(4) A copy of each inspection report shall be retained at or near the minesite.

**SECTIONS 817.85 and 817.86 [Removed]**

14. Sections 817.85 and 817.86 are removed.

15. Sections 817.91, 817.92, and 817.93 are combined, redesignated as new Section 817.84 and revised to read as follows:

**SECTION 817.84 - COAL MINE WASTE: IMPOUNDING STRUCTURES.**

New and existing impounding structures constructed of coal mine waste or intended to impound coal mine waste shall meet the requirements of Section 817.81.

(a) Coal mine waste shall not be used for construction of impounding structures unless it has been demonstrated to the regulatory authority that the stability of such a structure conforms to the requirements of this part and the use of coal mine waste will not have a detrimental effect on downstream water quality or the environment due to acid seepage through the impounding structure. The stability of the structure and the potential impact of acid mine seepage through the impounding structure and shall be discussed in detail in the design plan submitted to the regulatory authority in accordance with Section 780.25 of this chapter.

(b) (1) Each impounding structure constructed of coal mine waste or intended to impound coal mine waste shall be designed, constructed and maintained in accordance with Section 817.49 (a) and (c). Such structures may not be retained permanently as part of the approved postmining land use.

(2) If an impounding structure constructed of coal mine waste or intended to impound coal mine waste meets the criteria of Section 77.216(a) of this title, the combination of principal and emergency spillways shall be able to safely pass the 100-year, 6-hour design precipitation event.

(c) Spillways and outlet works shall be designed to provide adequate protection against erosion and corrosion. Inlets shall be protected against blockage.

(d) Drainage control. Runoff from areas above the disposal facility or runoff from the surface of the facility that may cause instability or erosion of the impounding structure shall be diverted into stabilized diversion channels designed to meet the requirements of Section 817.43 and designed to safely pass the runoff from a 100-year, 6-hour design precipitation event.

(e) Impounding structures constructed of or impounding coal mine waste shall be designed so that at least 90 percent of the water stored during the design precipitation event can be removed within a 10-day period.

16. Section 817.87 is revised to read as follows:

**SECTION 817.87 - COAL MINE WASTE: BURNING AND BURNED WASTE UTILIZATION.**

(a) Coal mine waste fires shall be extinguished by the person who conducts the surface mining activities, in accordance with a plan approved by the regulatory authority and the Mine Safety and Health Administration. The plan shall contain, at a minimum, provisions to ensure that only those persons authorized by the operator, and who have an understanding of the procedures to be used, shall be involved in the extinguishing operations.

(b) No burning or unburned coal mine waste shall be removed from a permitted disposal area without a removal plan approved by the regulatory authority. Consideration shall be given to potential hazards to persons working or living in the vicinity of the structure.

**SECTION 817.88 [Removed]**

17. Section 817.88 is removed.

18. Section 817.89 is revised to read as follows:

**SECTION 817.89 - DISPOSAL OF NONCOAL MINE WASTES.**

(a) Noncoal mine wastes including, but not limited to grease, lubricants, paints, flammable liquids, garbage, abandoned mining machinery, lumber and other combustible materials generated during mining activities shall be placed and stored in a controlled manner in a designated portion of the permit area. Placement and storage shall ensure that leachate and surface runoff do not degrade surface or ground water, that fires are prevented, and that the area remains stable and suitable for reclamation and revegetation compatible with the natural surroundings.

(b) Final disposal of noncoal mine wastes shall be in a designated disposal site in the permit area or a State-approved solid waste disposal area. Disposal sites in the permit area shall be designed and constructed to ensure that leachate and drainage from the noncoal mine waste area does not degrade surface or underground water. Wastes shall be routinely compacted and covered to prevent combustion and wind-borne waste. When the disposal is completed, a minimum of 2 feet of soil cover shall be placed over the site, slopes stabilized, and revegetation accomplished in accordance with Sections 817.111-817.116. Operation of the disposal site shall be conducted in accordance with all local, State, and Federal requirements.

(c) At no time shall any noncoal mine waste be deposited in a refuse pile or impounding structure, nor shall any excavation for a noncoal mine waste disposal site be located within 8 feet of any coal outcrop or coal storage area.

(d) Notwithstanding any other provision to this chapter, any noncoal mine waste defined as "hazardous" under Section 3001 of the Resource Conservation and Recovery Act (RCRA) (Pub. L. 94-580, as amended) and 40 CFR Part 261 shall be handled in accordance with the requirements of Subtitle C of RCRA and any implementing regulations.

(Pub. L. 95-87, *30 U.S.C. 1201* et seq. )

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