FEDERAL REGISTER: 48 FR 43994 (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 and Temporary Impoundments

ACTION: Final rule.

SUMMARY: The Office of Surface Mining Reclamation and Enforcement (OSM) is adopting final rules to simplify the requirements for design and construction of impoundments, which include all water, sediment, slurry or other liquid or semi-liquid holding structures and depressions, either naturally formed or artificially built. These rules provide design latitude to professionals, remove inconsistencies among previous rules, and clarify definitions. This action is being done to resolve conflicting and overlapping rules, and eliminate duplication.

EFFECTIVE DATE: October 26, 1983.

FOR FURTHER INFORMATION CONTACT: Robert A. Wiles, Technical Services and Research, Office of Surface Mining Reclamation and Enforcement, U.S. Department of the Interior, South Building, 1951 Constitution Avenue, NW., Washington, D.C. 20240, 202-343-2185.

SUPPLEMENTARY INFORMATION:

I. Background
II. Discussion of Comments and Rules Adopted
III. Procedural Matters

I. BACKGROUND

Section 515(b)(10) of the Surface Mining Control and Reclamation Act of 1977, *30 U.S.C. 1201* et seq. (the Act), requires surface coal mining operations to minimize disturbances to the prevailing hydrologic balance and to the quality and quantity of water in surface- and ground-water systems. Section 515(b)(8) of the Act requires that permanent impoundments be of adequate size, that the stability of an impoundment be compatible with that of the structures constructed under the Watershed Protection and Flood Prevention Act, Pub. L. 85-566, that the quality of the impounded water be permanently suitable for its intended use and impoundment discharges not degrade the water quality of the receiving waters below the standards established in applicable Federal and State law, that the final grading provide adequate safety and access for proposed water users, that the water level be reasonably stable, and that the impoundment not diminish the quality or quantity of water used by adjacent or surrounding landowners for agricultural, industrial, recreational, or domestic uses.

Sections 516(b) (9) and (10) of the Act impose similar requirements on the surface effects of underground mining. Section 516(b)(10) also provides that consideration should be given to the distinct differences between surface and underground mining. OSM has considered potential differences and has decided to promulgate identical impoundment rules for surface and underground mining, because the environmental and safety concerns that affect the design, construction, and maintenance of surface impoundments are the same whether associated with surface or underground mines.

On March 13, 1979, OSM published permanent program rules *(44 FR 15312)* that contained standards for permanent and temporary impoundments (30 CFR 816.49, 816.56, 817.49, and 817.56).

On June 21, 1982, OSM proposed amendments to some of these rules *(47 FR 26754).* Written and oral comments on these proposed rules were received during the comment period which closed on September 10, 1982. OSM is now adopting the final rules and amendments to Sections 701.5, 816.49, 816.56, 817.49 and 817.56. OSM has adopted rules different in some respects from those proposed, in response to the public comments received. The rules adopted and the comments on the proposed rules are discussed below.

Previous Sections 816.49 and 817.49 read essentially the same, as did Sections 816.56 and 817.56, except that sections from Part 816 referred to surface mining and sections from Part 817 referred to underground mining. Under this rulemaking the final sections of Parts 816 and 817 governing impoundments will continue to read essentially the same, as will those sections of Parts 816 and 817 concerning postmining rehabilitation of sedimentation ponds, diversions, impoundments and treatment facilities.

To simplify this preamble, OSM will discuss the comments and rules of Sections 816.49 and 816.56 with the understanding that the discussion will also apply to Sections 817.49 and 817.56. Generally comments have been discussed in the context of the final rule, and where no comments were received there is no discussion. In some instances OSM has combined the discussion of comments on more than one paragraph for convenience and readability.

One other related rulemaking should be mentioned. On July 2, 1981, OSM published a proposal concerning effluent limitations and sedimentation pond design criteria *(46 FR 34784).* The effluent limitations portion of that proposal has already been finalized *(47 FR 47216,* October 22, 1983). A final rule on sedimentation ponds and other siltation structures is expected to be issued shortly. The July 1981 proposal duplicated certain requirements of the impoundments rule because all sedimentation ponds are impoundments. The approach taken in the revised sedimentation ponds rule is to avoid unnecessary duplication. Thus such rules will cross reference this final rule. The preamble to the revised siltation structure rules will respond to comments that relate to both those rules and the impoundments rules and is part of the basis for the rules on impoundments.

To assist the reader in understanding the changes in the final rule, 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 -- IMPOUNDMENTS

Final rule	Previous rule	Proposed rule
Section 816.49		Section 816.49
(a)(1)	816.49(b)-816.46(q)(4), 784.16 (a) and (c)	(b) and (b)(1)(i).
(a)(2)	816.49(h), 816.49(b)-816.46(r)	(b)(2)(v)(A) and (b)(2)(ii).
(a)(3)	816.49(a)(5), 816.49(b)-816.49(q)(2)	(b)(2)(v)(A) and (b)(2)(iv)(B).
(a)(4)	816.49(a)(5), 816.49(b)-816.46(j)	(b)(2)(iv)(C).
(a)(5)(i)	816.49(a)(5), 816.49(b)-816.46(m)	(b)(2)(iv)(B).
(a)(5)(ii)	816.49(a)(5), 816.49(b)-816.46(n)	(b)(2)(iv)(D).
(a)(6)	816.49(a)(5) and (d), 816.49(b)-816.46(s)	(b)(2)(iv)(E).
(a)(7)	816.49(a)(5) and (e), 816.49(b)-816.46(s)	(b)(2)(iv)(F).
(a)(8)	816.49(a)(5), 816.49(b)-816.46(i)	(b)(2)(iv)(G).
(a)(9)	816.49(a)(3)	(b)(2)(iv)(H).
(a)(10)	816.49(f)	(b)(2)(v)(B).
(a)(10)(i)	816.49(h)	(b)(2)(v) (B, D and E).
(a)(10)(ii)	816.49(h), 816.49(b)-816.46(r)	(b)(2)(v) (C, D and E).
(a)(10)(iii)		
(a)(11)	816.49(f), 816.49(b)-816.46(t)	(c).
(a)(12)		(b)(2)(iii).
(b)	816.49(a)	(a)(1).
(b)(1)	816.49(a)(6)	(a)(1)(i).
(b)(2)	816.49(a)(1)	(a)(1)(ii).
(b)(3)	816.49(a)(2)	(a)(1)(iii).
(b)(4)	816.49(a)(3)	(a)(1)(iv).
(b)(5)	816.49(a)(4)	(a)(1)(v).
(b)(6)	816.49(a)(7)	(a)(1)(vi).
(b)(7)	816.49(a)(5)	(a)(1)(vii) and (b)(2)(iv)(A).
(c)	816.49(b)-816.46(i)	(b), (b)(1), and (b)(2).
816.56	816.49 (h) and (i)	816.56.

II. DISCUSSION OF COMMENTS AND RULES ADOPTED

GENERAL COMMENTS

Performance Standards vs. Design Criteria. Several commenters believed that the proposed elimination of specific design criteria in the previous rules in favor of performance standards would weaken the implementation and enforceability of the regulatory requirements and increases the possibility of impoundment failure. Other commenters applauded the increased design flexibility.

OSM has placed emphasis on performance standards rather than on design criteria because it believes that performance standards, which will allow more site-specific flexibility, will be at least as effective or more effective at achieving the requirements and standards required by the Act. OSM intends to place more responsibility on the operator and qualified registered professional engineers. So long as satisfactory performance is achieved, the design of the structure may be left to the engineer's discretion. A more extensive discussion of the relative merits of the use of design criteria versus the use of performance standards is set forth in Volume I of the "Final Environmental Impact Statement OSM EIS-1: Supplement" (FEIS) at pp. II-7 to II-8 and IV-5 through IV-7. Moreover, these final rules will not increase the possibility of impoundment failure because there are detailed inspection requirements, and both the design and construction of impoundments will be subject to certifications by qualified registered professional engineers and approval by the regulatory authority.

Commenters objected to OSM's proposal to delete specific provisions concerning slope steepness, erosion, embankment stability, and repair of rills and gullies, contained in previous Section 816.49(c)-(h). The commenters felt that the Act required these provisions and that the rules should also address them.

OSM has adopted final rules with regard to erosion and embankment stability. A specific design criterion for slope steepness, which appeared in previous Section 816.49(c) is unnecessary in view of the performance standards contained in these rules. The repair and revegetation of rills and gullies are addressed by revised Section 816.95(b) (see *48 FR 1160,* January 10, 1983) and Sections 816.111-816.116. Thus, OSM has not eliminated any requirement necessary to ensure compliance with the Act.

SECTION 701.5 - DEFINITIONS.

MSHA: OSM proposed to amend 30 CFR 701.5 by adding a definition of the term "MSHA" as an abbreviation for the Mine Safety and Health Administration. OSM has adopted that definition as proposed. This allows the use of the abbreviation rather than the lengthy full title throughout OSM's rules. No comments were received on this provision.

PERMANENT IMPOUNDMENTS AND TEMPORARY IMPOUNDMENTS: In addition, OSM received comments that some terms included in the proposed rules, but not previously defined, were confusing. Accordingly, OSM is adopting new definitions of the terms "permanent impoundment" and "temporary impoundment." The distinction adopted between permanent and temporary impoundments parallels the definition already adopted for permanent and temporary diversions and implements the statutory distinction created by section 515(b)(8) of the Act.

"Permanent impoundment" is defined to mean an impoundment which is approved by the regulatory authority and, if required, by other State and Federal agencies for retention as part of the postmining land use.

"Temporary impoundment" is defined to mean an impoundment used during mining and reclamation but not approved by the regulatory authority to remain as part of the approved postmining land use.

IMPOUNDMENT: OSM is also amending the definitions of "impoundment" and "sedimentation pond" for clarity.

The word "impoundments" is defined to mean all water, sediment, slurry or other liquid or semi-liquid holding structures and depressions, either naturally formed or artificially built. The words "closed basin" have been removed as unnecessary and the definition has been reworded, but the definition of impoundment is still intended to include all structures or basins included in the previous definition.

SEDIMENTATION POND: The term "Sedimentation Pond" is defined to mean an impoundment used to remove solids from water in order to meet water quality standards or effluent limitations before the water leaves the permit area. The revision to the definition is included in this final rule rather than the siltation structure rule so as to keep the definitional changes relating to impoundments together.

OSM's previous rules had defined sedimentation pond without making it clear that all sedimentation ponds were impoundments. It did list certain structures that were not sedimentation ponds and it referenced the performance requirements for sedimentation ponds. The definition has been simplified by rewording, removing reference to Section 816.46, which was unnecessary, and by removing the list of secondary sediment control structures. Secondary sediment control structures, such as straw dikes, riprap, check dams, or mulches, are not impoundments, and thus are not sedimentation ponds under the new definition, even without an express exclusion.

The definition adopted for "sedimentation pond" establishes that all sedimentation ponds are impoundments. Thus, all sedimentation ponds must satisfy the requirements for impoundments. Sedimentation ponds must also satisfy the additional requirements for siltation structures in revised 30 CFR 816.46. Thus, there is no need to cross-reference Section 816.46 in the definition of "sedimentation pond."

SECTIONS 816.49 AND 817.49 - IMPOUNDMENTS.

As proposed, the title of final Sections 816.49 and 817.49, "Impoundments," has been modified by deleting the phrase "Hydrologic balance" to more precisely describe the content of the rules.

The format of final Section 816.49 has been changed from the previous rules and from the proposed rules. Final Section 816.49 contains three paragraphs. Paragraph (a) contains the general requirements applicable to all impoundments. Cross-reference is made to those portions of MSHA's rules at 30 CFR 77.216 which provide standards for impoundments. Paragraph (b) contains those additional requirements applicable specifically to permanent impoundments. Paragraph (c) contains the additional standard applicable only to temporary impoundments.

This reorganization is consistent with the suggestion of one commenter who favored a reorganization to clarify the requirements for permanent impoundments and temporary impoundments.

The previous rules for temporary impoundments, Section 816.49(b), cross-referenced the performance standards for sedimentation ponds. The June 21, 1982, proposal attempted to establish certain performance standards for impoundments that would not have applied to sedimentation ponds. Under this final rule, the performance standards apply to impoundments regardless of whether the particular structure is also a sedimentation pond.

In the June 21, 1982, proposal, OSM had solicited comments on the question of whether the sedimentation pond rules should cross-reference the impoundment rules. Some commenters felt that cross-referencing would add an unnecessary duplication. They felt that the sedimentation pond rules should be applicable whenever an impoundment was used as a sedimentation pond and that the test for whether an impoundment was a sedimentation pond should be related to use, with only one set of standards applicable to either. Other commenters noted that in some parts of the country most impoundments serve a sedimentation function. Therefore, they suggested that the impoundments rules should cross-reference the sedimentation pond rules. OSM has decided that there is no need for Section 816.49 to reference Section 816.46. The sedimentation pond rules (now called the siltation structure rules) will also apply by their own terms. On the other hand, final Section 816.46 will cross-reference Section 816.49. This is discussed further in the siltation structure rule.

RELATIONSHIP TO MSHA. With these final rules OSM is attempting to clarify the relationship between OSM and MSHA regarding the responsibility for regulating impoundments. The previous rules required duplicative reviews of impoundment plans by MSHA and OSM, and duplicative enforcement and emergency notification. In an attempt to reduce this duplication, OSM proposed to allow MSHA primary responsibility for impoundment design review and emergency action. OSM received many comments on this issue.

MSHA's rules require it to review and approve the design, construction, and maintenance of those impoundments which meet the size or other qualifying criteria of 30 CFR 77.216(a). MSHA's rules apply to an impoundment if the impounding structure can impound water, sediment or slurry to an elevation of 5 feet above the upstream toe of the structure and has a storage volume of 20-acre feet or more, if it can impound those liquids to an elevation of 20 feet or more above the upstream toe of the structure, or if it is determined to present a hazard to coal miners. If a proposed structure qualifies for MSHA review, plans for its design, construction and maintenance must be submitted to and approved by the MSHA District Manager prior to construction. MSHA requires that the plans must include details on size, foundation, freeboard, spillways, diversions, outlets, slope protection, and materials, and requires that a registered engineer certify that the impounding structure will be constructed in accordance with current, prudent engineering practices for the maximum volume of water sediment or slurry which can be impounded considering the size, use, and location of the structure. Thus, for nearly every design criterion contained in OSM's previous rules, there is a review of the plan for that element in MSHA's rules governing large impoundments.

Several commenters were concerned that more than one agency (MSHA, OSM, and/or State regulatory authorities) could continue to retain authority over a single impounding structure. Some liked the proposed rule in that it would reduce existing duplication of regulatory control. Other commenters felt that MSHA was properly the lead agency in dam approvals, and applauded OSM's proposal. One commenter noted that MSHA implementation of emergency provisions would clarify MSHA's responsibility. Some State regulatory authorities felt that the rules gave authority to MSHA which should be delegated to the States; some States were concerned that their authority would be preempted unless the language was amended. Other commenters felt that OSM was improperly relinquishing the approval or enforcement authority of the State to another Federal agency. Several commenters believed that OSM intended to defer all decisions on impoundments to MSHA and objected to OSM's willingness to defer or allow regulatory authorities to defer to MSHA for decisions on impoundments.

The proposed provisions, which commenters perceived as an attempt to defer OSM's responsibility to MSHA, have not been adopted. The final rule retains independent regulatory authority responsibility under section 515, 506, 507, 508 and 510 of the Act for permitting and ensuring operator compliance with the performance standards found in section 515(b)(8) of the Act and with Pub. L. 83-566. Under the final rule, MSHA's approval of the design and construction of impoundments subject to the Act will not satisfy the requirement for approval by the regulatory authority. Thus, under final Section 816.49 and the permitting rules, the regulatory authority must review and approve plans for impoundments to ensure that the structures are designed to be in compliance with appropriate standards. Final Section 816.49(a) requires that plans for the construction of large impoundments must be submitted both to MSHA and the regulatory authority. The regulatory authority may consider MSHA's action on plans for impoundments, but is independently charged to make its own findings with regard to plan approval.

In addition, because sections 515(b)(8) and 515(b)(10) of the Act apply to all impoundments, and not just those regulated by MSHA, the regulatory authority must regulate the design, construction and maintenance of impoundments that do not meet the size or other qualifying criteria of 30 CFR 77.216.

One commenter wanted clarification as to whether OSM or MSHA would regulate impoundments used as sediment ponds. Because most sediment ponds will not meet the criteria in 30 CFR 77.216(a), generally only OSM's rules at 30 CFR 816.49 and 816.46 and those included in the regulatory program will apply. Should a sedimentation pond meet the 30 CFR 77.216(a) criteria, it will be subject to MSHA's requirements as well.

Some commenters did not like OSM's proposal to cross-reference MSHA's rules because OSM is statutorily obliged to promulgate its own rules governing impoundments and also because MSHA's standards would not provide the statutorily required level of environmental protection. These commenters noted the requirement in section 501 of

the Act to promulgate rules and indicated that OSM referencing MSHA standards would not satisfy OSM's responsibility to promulgate rules, and to provide for enforcement of the Act.

OSM's responsibility under section 501(b) of the Act is to "promulgate and publish * * * performance standards based on and conforming to the provisions of Title V * * *." OSM has determined that its statutory goals will be achieved in part by referencing the rules already promulgated by MSHA. The standards included in MSHA's rules, which were promulgated primarily to protect miners, will 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.

One commenter asserted that the regulatory authorities should not have the responsibility to monitor or enforce compliance with provisions of 30 CFR Part 77 for those impoundments which meet the criteria of 30 CFR 77.216.

OSM has not adopted proposed Section 816.49(b)(1)(iii) which would have required the regulatory authority to regulate for compliance with MSHA requirements. Under these final rules, the regulatory authority is responsible for assuring compliance with requirements imposed under the Act. However, to the extent that MSHA's rules are referenced, they will be enforced under the Act.

One commenter suggested that OSM require that impoundments subject to 30 CFR 77.216 must be approved by MSHA for compliance with 30 CFR Part 77 before the regulatory authority may approve them.

Because impoundments subject to 30 CFR 77.216 must obtain approval from both MSHA and the regulatory authority prior to construction it does not matter whether the regulatory authority or MSHA approves first. However, since MSHA reviews only that part of the mining application concerning impoundments it will, in most cases, issue its decision first. Furthermore, in many cases the regulatory authority may wish to wait for MSHA decisions which may be helpful to the regulatory authority in its own review.

SECTION 816.49(a) - GENERAL REQUIREMENTS.

Final Section 816.49(a) sets forth the general requirements applicable to all impoundments.

SECTION 816.49(a)(1)

Final Section 816.49(a)(1) was proposed as the first paragraph of Section 816.49(b). It has been revised for clarity and to reflect the fact that all impoundments which meet MSHA's criteria at 30 CFR 77.216(a) must satisfy the requirements of 30 CFR 77.216, as well as the other applicable requirements of Section 816.49. The proposed phrase "excluding sedimentation ponds" has not been adopted in final Section 816.49(a)(1) to reflect that sedimentation ponds are impoundments. Under the final rule, the plan required to be submitted to the District Manager of MSHA under 30 CFR 77.216 must also be submitted to the regulatory authority as part of the permit application.

A number of commenters appear to have been confused by a typographical error. In proposed Section 816.49(b) the phrase "impoundments * * * that meet the size or other criteria in 30 CFR 77.216(a) * * *" was incorrectly reproduced as "impoundments that meet the size of other criteria in 30 CFR 77.216(a) * * *." (Emphasis added). Because of the error, commenters suggested organizational changes. OSM has organized the final rule along the lines suggested by the commenters as well as that intended by OSM.

One State regulatory authority felt that the criteria in 30 CFR 77.216(a) should be included in OSM's regulatory text, rather than referenced.

OSM has decided to cross-reference MSHA's rules. The regulatory text need not be reproduced in full because, generally, operators should have MSHA's rules available when they are applicable. If a State regulatory authority wishes to include the full text of MSHA's criteria in its own rules, it may do so.

SECTION 816.49(a)(2)

OSM's previous rules set design criteria for the construction of impoundments. OSM had proposed, in Section 816.49(b)(2)(v)(A) that dams and embankments for water impoundments be designed by a qualified registered professional engineer or other certified professional with respect to critical dimension, stability and hydraulic performance.

Under final Section 816.49(a)(2), the design of impoundments must be certified by a qualified registered professional engineer experienced in the design and construction of impoundments.

The engineer must certify that the impoundment is designed to meet OSM's performance standards using current, prudent engineering practices and any design criteria set by the regulatory authority.

The requirement is applicable to all impoundments, not just water-holding ones, to reflect that the definition of impoundments includes all liquid-holding structures. The requirement includes all aspects of design, not only critical dimension, stability and hydraulic performance, as proposed, because other elements of impoundment design may affect safety and environmental protection resulting from an impoundment.

Commenters objected to the proposed requirement for a qualified registered engineer or other certified professional to design dams and embankments for impoundments. One commenter suggested that in some cases, such professionals may be unqualified to perform the needed work, whereas other company employees who are not engineers may be more experienced and able.

Under the final rule, OSM intends to ensure that the certifying professionals have experience and are qualified to complete the necessary certification. Under final Section 816.49(a)(2), others who are qualified, rather than professional engineers, may design impoundments. However, the design must be certified by a qualified registered professional engineer. Thus, in some instances operators may minimize the expense of hiring design professionals by relying on non-engineers for the design work, but the approval of engineers must be obtained in order to ensure proper design.

One commenter objected to the certification requirement because it would not guarantee the work, it would not be cost-effective and because State regulatory authorities would not have the expertise or ability to rule on personnel qualifications.

OSM disagrees. Although a design certification is not a "guarantee," it will increase the likelihood that impoundments will be designed properly. Also a properly designed impoundment will likely reduce the necessity for expensive remedial action in the future. Under the Act, regulatory authorities have the responsibility for assuring that qualified registered professional engineers are involved in a number of aspects of the design and construction of surface coal mining operations. Thus, requiring certifications for impoundments does not impose any burden on regulatory authorities for which they are unequipped. Under the final rule, the regulatory authority will not review general personnel qualifications, but will determine whether engineers have sufficient experience to certify the design of the impoundment.

OSM had also proposed that qualified registered professional engineers or other certified professionals be required to "accept professional liability * * *" for design and certification functions. Commenters were unsure of the meeting of that proposal.

The proposed statement of engineer liability has not been adopted. In certifying a design or that construction has complied with a design, an engineer may be liable for his action if his certification has been incorrect. The degree of liability may vary with State law. OSM's proposal was intended to require engineers to recognize this liability. However, the specific statement that the engineer accepts liability is unnecessary because such liability exists independently of OSM regulation. It should also be noted that OSM did not, by its proposal, intend to limit an operator's responsibilities.

SECTION 816.49(a)(3)

Final Section 816.49(a)(3) requires impoundments to have a minimum safety factor of 1.5 for the normal pool with steady seepage saturation conditions, and a seismic safety factor of at least 1.2.

OSM's previous rules referenced different static safety factors for different types of impoundments. Temporary impoundments were required to meet a 1.5 static safety factor by reference to previous Section 816.46(q)(2). Permanent impoundments were required to meet standards contained in one of two technical publications depending on whether they were subject to 30 CFR 77.216 or not.

OSM had proposed to eliminate this confusing static safety factor system, in favor of a more general system of requiring static safety factors as determined "by prudent engineering design."

Two commenters felt the proposed requirement in Section 816.49(b)(2)(iv)(B) that the factor of safely be "adequate" was vague and open to interpretation. One of the commenters suggested a specific static safety factor be set, finding it to be reasonable and necessary to ensure minimum national regulation and enforcement. Another commenter asked that the 1.5 static safety factor of the previous rule be retained.

Accordingly, OSM has adopted safety factors comparable to those in the previous rules, but which have been simplified. Only a single static safety factor (1.5) is required for all impoundments; but regulatory authorities may increase that factor. A seismic safety factor of at least 1.2 is required.

Based on examination of U.S. Department of Agriculture, Soil Conservation Service guidelines, "Earth Dams and Reservoirs" (Technical Release No. 60, June 1976), OSM has determined that impoundments constructed under these final rules are in accordance with section 515(b)(8)(B) of the Act and "will be designed as to achieve necessary stability with an adequate margin of safety compatible with structures constructed under Pub. L. 83-566" (The Watershed Protection and Flood Prevention Act).

SECTION 816.49(a)(4)

Final Section 816.49(a)(4) adopts the requirement proposed as Section 816.49(b)(2)(iv)(C) which requires that impoundments have adequate freeboard to resist overtopping by waves or by sudden increases in storage volume.

One commenter believed that the proposed freeboard requirement was vague and should be replaced by a more concrete statement. The commenter suggested that such technical requirements be addressed by stating that designs be based on recognized professional standards and any design criteria established by the regulatory authority. Another commenter requested specific requirements be set. OSM disagrees that specific freeboard requirements 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 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 criteria would be inappropriate.

SECTION 816.49(a)(5)

In Section 816.49(b)(2)(iv)(D), OSM proposed that impoundment foundations be excavated and prepared to resist failure and cutoff trenches be installed if necessary for stability. Final Section 816.49(a)(5)(i) provides more specificity than what was proposed. Impoundment foundations must be designed to be stable under all conditions of construction and operation. Sufficient foundation investigations and laboratory testing must be performed to determine the design requirements for foundation stability. Final Section 816.49(a)(5)(ii) follows the proposed rule and requires that in constructing foundations all vegetative and organic materials must be removed and foundations must be excavated and prepared to resist failure. Furthermore, cutoff trenches must be installed, if necessary to ensure

stability. The emphasis in the final rule on proper design and construction of foundations recognizes the crucial role that a sound foundation plays in preventing failures. Such safety considerations must be reflected in the certification of the design and the certification of the construction of impoundments. No comments were received on this provision.

SECTION 816.49(a)(6)

Final Section 816.49(a)(6), adopted as proposed in Section 816.49(b)(2)(iv)(E), require that slope protection must be provided to protect against surface erosion at the site and protect against sudden drawdown. No comments were received on this provision.

SECTION 816.49(a)(7)

Final Section 816.49(a)(7), which was proposed as Section 816.49(b)(2)(iv)(F), requires that embankment faces and surrounding areas be vegetated except that where water is impounded they may be riprapped or otherwise stabilized in accordance with accepted design practices. No comments were received on this provision and it is adopted as proposed.

SECTION 816.49(a)(8)

Final Section 816.49(a)(8), which was proposed as Section 816.49(b)(2)(iv)(G), requires that impoundments must include a combination of principal and emergency spillways designed and constructed to safely pass the design precipitation event. The design precipitation events are specified separately. These are discussed further below. The proposed provision was changed to clarify that all impoundments must have a combination of principal and emergency spillways. It should be noted that revised Section 816.46(c)(2)(ii) will allow certain sedimentation ponds to be constructed with only one spillway.

The Environmental Protection Agency (EPA) raised one concern regarding spillways. The EPA effluent limitations require zero discharge for new source preparation plant water circuits. The closed-loop water circuits sometimes include impoundments such as slurry ponds. Although impoundments at new source preparation plants must have spillways under these rules, their discharges should be recycled and flow back to the facility to meet EPA requirements.

SECTION 816.49(a)(9)

Final Section 816.49(a)(9), proposed in Section 816.49(b)(2)(iv)(H), requires that the vertical portion of any remaining highwall must be located far enough below the low-water line along the full extent of the highwall to provide adequate safety and access for the proposed water users. The proposed provision requiring excavated ponds to meet the requirements of Section 816.49(a) is unnecessary because excavated ponds are impoundments and thus already subject to such standards.

OSM has reworded the requirement from the proposed rule to clarify that the intent of the requirement is to ensure safety and access as well as stability and protection of exposed surfaces. OSM's proposal included language indicating that stability and problems from exposure and spalling were to be avoided. These will be assured if adequate safety and access are provided. The other performance standards of the rule will also protect against these concerns.

One State commenter found the requirement acceptable as long as "top of the highwall" is meant to be that portion that has not sloped to anticipated mean water elevation and the sloped upper section is not considered to be highwall. Another commenter agreed with the proposed version.

Other commenters suggested modifying the proposal to clarify that all of the vertical highwalls are to be covered. The commenters also suggested deleting language "far enough below" finding the remaining phrase, "the remaining vertical portion of the highwall shall be below the annual low-water line * * *," sufficient to ensure the proper coverage and stability of the highwall.

OSM has revised the provision in order to apply it only to the vertical portion of highwalls. OSM has retained the language "far enough below" to ensure that water coverage is adequate even during the low-water periods. One purpose of this provision is to prevent the exposure of vertical impoundment walls and, thus, ensure stability.

SECTION 816.49(a)(10)

OSM had proposed, in Section 816.49 (b)(2)(v)(B-E) and (b)(2)(vi), various requirements dealing with inspections and the qualifications of those who make inspections. Similar requirements have been adopted in final Section 816.49(a)(10)(i-iii).

Under final Section 816.49(a)(10), all impoundments must be inspected by a qualified registered professional engineer or other qualified professional specialist under the direction of a professional engineer. The person conducting the inspection must be experienced in the construction of impoundments. This final rule follows previous Section 816.49 (f) and (h) which required that inspections be conducted by qualified registered professional engineers.

SECTION 816.49(a)(10)(i)

Final Section 816.49(a)(10)(i) requires inspections be made regularly during construction, upon completion of construction, and at least yearly until removal or release of the performance bond. One commenter suggested that for those situations where the impoundment will be below the natural gradeline (as for example, at the site of a final pit in a low topographic area), the proposed requirement (Section 816.49 (b)(2)(v)(B)) that impoundments are to be inspected during construction could be interpreted to require inspection of normal mine "pit cuts" and in-pit spoil placement. The commenters requested that the rules state that professional certification is only required for the final regraded slopes at the time of creation of the permanent impoundment.

OSM has reworded the rules for clarity. The final rules require inspections of impoundments by a qualified registered professional engineer or other certified professional to ensure that all construction specifications are met. Normal pit cuts need not be inspected under this section because they will not be impoundments.

OSM had proposed in Section 816.49(b)(2)(v)(D) to require inspection by a qualified person of impoundments which do not meet the 30 CFR 77.216(a) criteria during construction and every 30 days thereafter, with certification required after construction and again at least annually. (Impoundments meeting the criteria of 30 CFR 77.216(a) must, under 30 CFR 77.216-3, be examined every seven days.)

Commenters on the proposal suggested that inspection every 30 days would be too often and unnecessary for small impoundments. One commenter suggested that quarterly inspections would suffice. Another suggested that "routine" inspections would be adequate. One commenter thought that the regulatory authority should establish inspection frequency. In the previous rules small impoundments were exempt from all inspection subsequent to construction. OSM also received comments and testimony from congressional hearings that suggested that impoundments too small to meet MSHA's criteria might nonetheless constitute a hazard.

Under final Section 816.49(a)(10)(i) OSM has also adopted a post-construction annual inspection requirement because the potential impact resulting from changing seasonal weather conditions, or changes of sediment volume for sedimentation ponds, might change the stability of the impoundment or suitability for its use. A requirement for a quarterly examination of small non-hazardous impoundments is adopted in final Section 816.49(a)(11).

OSM had proposed in Section 816.49(b)(2)(v)(D) that impoundments be inspected for water quality as well as for stability, maintenance and performance. A commenter noted that previous rules required only discharged water leaving the permit area to meet certain water quality standards and was confused as to which OSM rule governed the quality of water held in an impoundment.

OSM has not adopted the explicit requirement that inspections consider on-site water quality. Nonetheless, under

30 CFR 816.42 and final Section 816.49(b)(2), which is discussed below, the water quality standards for water discharged from impoundments, and for water remaining in permanent impoundments, must be achieved.

SECTION 816.49(a)(10)(ii)

Final Section 816.49(a)(10)(ii) states the qualified registered professional engineer must promptly, after each inspection, provide to the regulatory authority a certified report that the impoundment has been constructed and maintained as designed and in accordance with the approved plan and 30 CFR Chapter VII. The report must contain discussion of any appearance of instability, structural weakness or other hazardous conditions, depth and elevation of any impounded waters, existing storage capacity, any existing or required monitoring procedures or instrumentation and any other aspects of the structure affecting stability. The phrase "after each inspection" was added to final Section 816.49(a)(10)(ii) to clarify when certified reports are to be provided to the regulatory authority.

SECTION 816.49(a)(10)(iii)

Final Section 816.49(a)(10)(iii) requires a copy of the report to be kept at or near the minesite. This latter requirement has been adopted to enable those visiting or close to the site of the impoundment to become aware of any hazards, and to assist the regulatory authority and OSM in enforcement of the regulations.

SECTION 816.49(a)(11)

Instead of the 30-day inspection requirement proposed as Section 816.49(b)(2)(v)(D), OSM has adopted an examination requirement in final Section 816.49(a)(11). All impoundments must be examined. Those that meet the criteria of 30 CFR 77.216 must be examined in accordance with 30 CFR 77.216-3, i.e., at least every seven days. Under final Section 816.49(a)(11), small non-hazardous impoundments must be examined at least quarterly by a qualified person designated by the operator for any appearance of structural weakness or other hazardous conditions. Small impoundments generally pose less threat to safety and environment and a less frequent inspection will suffice. In addition, the quarterly examination required to be conducted by final Section 816.49(a)(11) will identify hazardous situations.

SECTION 816.49(a)(12)

Under final Section 816.49(a)(12), should any examination or inspection disclose a potential hazard, the person who examined the impoundment must notify the regulatory authority promptly of the finding, and of the emergency procedures formulated for public protection and of the remedial action taken. If procedures adequate to protect the public cannot be implemented by the operator, the regulatory authority must be notified immediately. The regulatory authority must then immediately notify the appropriate agencies that other emergency measures are required to protect the public.

Commenters objected to OSM's proposed Section 816.49(b)(2)(iii) which would have required that regulatory authorities ensure that operators develop emergency procedures to protect the public should potentially hazardous conditions develop, because that provision would have required emergency procedures for impoundments which were not subject to 30 CFR 77.216 and which were unlikely to present significant safety hazards.

The rules adopted herein provide for the implementation of emergency procedures at both large and small impoundments if a hazard develops. They will properly ensure protection of health and safety of all persons, as well as the protection of the environment. The requirement for periodic examination of all impoundments, and for implementation of procedures when hazards are discovered, will ensure that public, as well as miner, health and safety are protected. Should a hazard develop at any impoundment, large or small, emergency procedures must be immediately implemented. Thus, prudent operators will develop procedures commensurate with foreseeable risks.

Commenters were confused by two apparently conflicting OSM statements with regard to MSHA responsibility for health and safety. In the preamble accompanying proposed Section 816.49(b)(1)(iv), OSM noted that MSHA's regulatory scheme did not provide for the safety and health of the public during emergency situations. Later, in the

preamble accompanying proposed Section 816.49(c), OSM would have required operators to follow MSHA emergency procedures, even for those impoundments which do not meet MSHA criteria.

The statements do not conflict. In examining the design of impoundments, regulatory authorities must ensure not only that the MSHA standards will be met (which will ensure the health and safety of miners and will accomplish part of OSM's regulatory responsibility with regard to the protection of public health and safety), but also that the impoundment will meet the additional standards set out in Section 816.49. These additional standards are intended to protect public health and safety to the extent that MSHA standards alone may not.

Should a hazard actually develop, MSHA procedures provide for the notification of appropriate persons and implementation of emergency procedures which protect miners and the general public. In this regard, MSHA's rules are not limited to the protection of mine personnel. Accordingly, OSM had proposed that MSHA's procedures be followed in emergency situations. However, as discussed above, OSM has adopted an emergency procedure somewhat different from the one proposed, which does not reference MSHA's procedure but assures public protection.

Commenters noted that OSM asserted in the preamble to the proposed rules that MSHA's current regulatory scheme does not sufficiently address public safety during emergency situations. These commenters felt that OSM should coordinate with MSHA and arrange for MSHA to administer all safety programs in order to eliminate duplication.

While OSM agrees that the elimination of duplication is desirable, a completely centralized system is impossible to develop at this time. While MSHA's responsibilities may have some overlap with OSM's, this overlap has not been fully eliminated through this rulemaking.

SECTION 816.49(b) - PERMANENT IMPOUNDMENTS.

Final Section 816.49(b), which was proposed as Section 816.49(a)(1), permits the creation of permanent impoundments of water, if authorized by the regulatory authority, provided certain demonstrations are made that are specified in section 515(b)(8) of the Act. These standards, proposed as Section 816.49(a)(1)(i)-(vii) and made final as Section 816.49(b)(1)-(7), do not apply to temporary impoundments. Under the final rules the regulatory authority must find that: (1) The size and configuration of the permanent impoundment will be adequate for its intended purpose; (2) the quality of the impounded water will be suitable on a permanent basis for its intended use and, after reclamation, will meet applicable State and Federal water-quality standards, and that discharges from the impoundment will meet applicable effluent limitations and will not degrade the quality of receiving water below State and Federal water-quality standards; (3) the water level will be sufficiently stable and capable of supporting the intended use; (4) final grading will provide for adequate safety and access for proposed water users; (5) the impoundment will not result in the diminution of the quality and quantity of water utilized by adjacent or surrounding landowners for agricultural, industrial, recreational or domestic uses (6) the impoundment will be suitable for the approved postmining land use; and (7) that the design precipitation event for the spillways for a permanent impoundment will be a 50-year, 6-hour event, or such larger event as the regulatory authority may require. The storm event requirement was proposed as Section 816.49(b)(iv)(A).

SECTION 816.49(b)(1)

One commenter suggested deletion of the requirement that the configuration of a permanent impoundment be adequate for its intended purpose, because "configuration" is not mentioned in section 515(b)(8) of the Act.

OSM has adopted language which requires regulatory authority approval of "configuration" in final Section 816.49(b)(1) because the determination of permanent impoundment suitability for intended use and stability, which are required to be considered under section 515(b)(8) of the Act, may require consideration of impoundment configuration. Further, the configuration of the permanent impoundment must be considered in relation to the surrounding postmining land uses and the water quality within the impoundment may be affected by its final

configuration. Thus, configuration can be an important factor in ensuring that the requirements of section 515 (b)(2) and (b)(8) of the Act are met.

SECTION 816.49(b)(2)

The Environmental Protection Agency was concerned that the OSM rules should assure that the quality of water in permanent impoundments would meet applicable State and Federal water-quality standards and that discharges would meet applicable effluent limitations. Final Section 816.49(b)(2) has been revised to reflect these concerns. In other respects, final Section 816.49(b)(2) is adopted essentially as proposed.

SECTION 816.49(b)(3)

Commenters were concerned about the requirement for a reasonably stable water Level proposed as Section 816.49(a)(1)(iii). The commenter felt that regional variations in water use and precipitation or recharge events could result in significant variations of water level. Commenters felt this should be acceptable so long as the quantity of water available would meet the intended use.

Section 515(b)(8)(D) of the Act explicitly requires that a finding be made prior to the authorization of permanent impoundments that a reasonably stable water level will be maintained. In designing impoundments, operators should take into account factors which might tend to cause variation in the water level, and plan to minimize these impacts.

Other commenters suggested deletion of the proposed requirement in Section 816.49(a)(1)(iii), that permanent impoundments have water levels capable of supporting the intended use, because that language was not found in sections 515(b)(8) of the Act. OSM has included the requirement that water levels be adequate for the intended use in final Section 816.49(b)(3). The inclusion of this requirement is authorized by section 515(b)(2) and 515(b)(8) of the Act.

SECTION 816.49(b)(4)

Final Section 816.49(b)(4) is adopted as proposed in Section 816.49(a)(1)(iv). No comments were received on this provision.

SECTION 816.49(b)(5)

OSM has adopted proposed Section 816.49(a)(1)(v) in final Section 816.49(b)(5).

One commenter suggested modifying and deleting portions of proposed Section 816.49(a)(1)(v) to allow diminutions of water quality so long as water met standards imposed by the appropriate State or Federal regulations. The commenter noted that all impoundments have the potential to diminish the quality and quantity of a downstream water supply. The suggestion has not been adopted. Final Section 816.49(b)(5) implements section 515(b)(8)(F) of the Act which requires that impoundments not result in the diminution of water quality or quantity used by adjacent or surrounding landowners.

SECTION 816.49(b)(6)

Final Section 816.49(b)(6) adopts proposed Section 816.49(a)(1)(vi). One commenter suggested the deletion of proposed Section 816.49(a)(1)(vi) which would have required a finding that impoundments be suitable for the approved postmining land use prior to approval. The commenter felt such specific conditions were not authorized by section 515(b)(8) of the Act and therefore were unauthorized and unsupportable. OSM has not adopted the suggestion. Section 515(b)(8) (A) and (C) of the Act specifically requires OSM to consider postmining land use in approving permanent impoundments. Furthermore, any change in the land use must be approved by the regulatory authority and meet the requirements of section 515(b)(2) of the Act.

SECTION 816.49(b)(7)

Final Section 816.49(b)(7) adopts part of the proposed requirement in Section 816.49(b)(2)(iv)(A) that permanent impoundments be designed for the 50-year, 6-hour event as part of the general requirements for impoundments. The design precipitation events for spillways, listed together in the proposed rule, are separately established for permanent impoundments in final Section 816.49(b) and for temporary impoundments in final Section 816.49(c). This was done to reflect their applicability more clearly. In addition, if any impoundment is a sedimentation pond meeting the criteria of 30 CFR 77.216(a), then the design event will be a 100-year, 6-hour precipitation event under revised Section 816.46, rather than the events prescribed under Section 816.49.

Commenters objected to OSM's proposed use of design storms for the sizing of impoundments, because these commenters felt that they were design criteria rather than performance standards. One suggested that the proposed provision be revised so that the discharge structure is designed for the intended use instead of a particular precipitation event.

OSM has continued to specify the storm events for which the combination of principal and emergency spillways must be designed. Any structure which is designed to hold water, or other liquids or semi-liquids, must be designed to accommodate the magnitude and frequency of the appropriate design storm in order to ensure safety, stability, and erosion control. While the discharge structure does have some effect on the retention volume, it does not affect the inflow volume characteristics. The sizing and location of the discharge structure principally determines the detention time and accordingly the quantity of water discharged. The combination of principal and emergency spillways must be such as to prevent over-topping of the embankment and subsequent erosion failure. This protection should be assured, in addition to compatibility with the intended use, and thus design events for such spillways have been specified.

Commenters suggested that specification of a design event would require operators to construct larger structures than necessary. One suggested replacing the proposed design storms with the following provision: "Excavations designed for less than a 25-year, 6-hour event may be incorporated into the postmining land use with approval of the regulatory authority." The commenter asserted that such a provision would allow the construction of small stock ponds.

Design precipitation events are necessary for the reasons explained above. OSM believes that the 50-year, 6-hour event provides the requisite safety margin for all permanent impoundments. However, in the context used in this rulemaking, the specified design events will not necessarily determine the holding capacity of the impoundment. Not all impoundments constructed in accordance with a particular design storm will be of the same size or complexity. Depending upon the intended use, the impoundment may or may not be constructed to hold the specified event. The impoundment must, however, be capable of handling the design storm event in terms of the spillway design.

A commenter wanted to limit the flexibility given to regulatory authorities in specifying larger storm events than those set forth in OSM's rules. It was suggested that, rather than allowing larger events "if site specific conditions warrant" as proposed in Section 816.49(a)(1)(iv)(A), that larger events be allowed only if "based on medium to high hazard potential with respect to loss of life as defined by the National Dam Inspection Act (Pub. L. 92-367)."

The final rules provide broad discretion to the regulatory authority. Under section 505(b) of the Act, States may prescribe laws or regulations that are more stringent than OSM's rules. Thus, an attempt to circumscribe the regulatory authority's discretion to set more stringent standards would be inappropriate.

SECTION 816.49(c) - TEMPORARY IMPOUNDMENTS.

Final Section 816.49(c) provides for the regulation of temporary impoundments. It was proposed as Section 816.49(a)(2). Temporary impoundments may be authorized by the regulatory authority as part of the surface coal mining operation under the approved permit. Temporary impoundments must meet the requirements for all impoundments set out in paragraph (a). In addition, the design event for spillways for temporary impoundments will be the 25-year, 6-hour storm event or such larger event as the regulatory authority may require. As with permanent

impoundments, the design event for temporary impoundments meeting the criteria of 30 CFR 77.216(a) that are sedimentation ponds will be a 100-year, 6-hour precipitation event under revised Section 816.46.

OSM received various comments on its proposed rule with regard to temporary impoundments. One commenter applauded OSM's proposal to subject temporary impoundments to the same design standards as permanent impoundments. Other commenters felt that temporary impoundments should not be regulated at all.

Without proper design and construction, even temporary structures may cause environmental, health or safety problems. Thus, the standards in final Section 816.49(a) are applicable to all impoundments because these fundamental standards are necessary to ensure the protection of the environment and public health and safety. OSM has not subjected temporary impoundments to all the requirements in Section 816.49(b) because these standards relate to permanent structures, such as suitability for the postmining land use, and thus are inappropriate to temporary impoundments.

SECTIONS 816.56 AND 817.56 - POSTMINING REHABILITATION OF SEDIMENTATION PONDS, DIVERSIONS, IMPOUNDMENTS, AND TREATMENT FACILITIES.

Final Sections 816.56 and 817.56 address the requirements for sedimentation ponds, impoundments, diversions and treatment facilities after reclamation is completed. It amplifies the requirements of the previous rules and is similar to the proposed rule, but does not include the certification in proposed Section 816.56.

Under final Section 816.56, before abandoning a permit area or seeking final bond release, the operator must ensure that all temporary structures are removed and reclaimed, and that all permanent sedimentation ponds, diversions, and treatment facilities meet the requirements for permanent structures, have been maintained properly, and meet the requirements of the approved reclamation plan for permanent structures and impoundments. The operator must renovate such structures if necessary to meet the requirements of this chapter and to conform to the approved reclamation plan.

Commenters made reference to OSM's proposed rules permitting certain small depressions after backfilling and grading (see 30 CFR 816.102(c)). The commenter questioned whether it was possible to treat a permanent impoundment which did not meet the design storm size requirements as a small depression, subject only to the Section 816.102(c) requirements.

Section 816.102(c) provides a limited exception to the approximate original contour restoration requirements for small depressions. Small depressions are not expected to hold water and must be revegetated. A small depression which is capable of holding water would be an impoundment. Thus, it would not be possible for any impoundment to be treated only as a small depression. In order to allow a permanent impoundment, Sections 816.49, 816.56 and 816.133 or Sections 817.49, 817.56 and 817.133 must be satisfied.

One commenter anticipated problems with reconstruction of existing permanent structures to meet original design standards for permanent existing diversions. Previous Section 816.56 required renovation of all structures. It did not specifically state that temporary structure had to be removed and reclaimed. The new final rule only requires renovation of the structures if renovation or reconstruction is necessary to meet OSM's requirements or to conform to the approved reclamation plan.

This revision makes clear that renovation of structures will not be required where the structures are already in compliance with the applicable rules and conform to the approved reclamation plans. These rules will ensure that the ponds and other permanent facilities will be suitable for the intended postmining land use and allow bond release.

One State suggested that proposed Section 816.56 implied that the regulatory authority would be able to devise criteria needed to determine when the impoundment is ready for bond release. The commenter is correct to the extent that under 30 CFR Part 800, bond release is allowed for any aspect of reclamation only after a determination by the regulatory authority that reclamation is complete.

EPA has asked OSM to clarify that these rules do not supersede EPA's regulations pertaining to non-coal mining waste under the Resource Conservation and Recovery Act of 1976, as amended (RCRA), *42 U.S.C. 6921* et seq. Operators are required to comply where applicable. As for coal mining waste, 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 mining waste under Subtitle C of RCRA.

REFERENCE MATERIALS:

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

BOM (U.S. Bureau of Mines), 1973, analysis of coal refuse dam failure, Middle Fork, Buffalo Creek, Saunders, W. VA.; (Prepared by W.A. Wahler and Association.) U.S. Bureau of Mines Contract S0122084, vol. 1, test; vol. 2, appendices (various pagings).

BOR (U.S. Bureau of Reclamation), 1973, (reprinted 1977), Design of small dams -- A water resources technical publication, 2d edition: U.S. Government Printing Office, Washington, D.C., 816 pp.

Cedergren, H.R., 1977, Seepage, drainage, and flow nets; John Wiley and Sons, Inc., New York, 534 pp.

Griffiths, D.H. and King, R.F., 1965, Applied geophysics for engineers and geologists: Pergamon Press, London, 223 pp.

Harr, M.E., 1962, Groundwater and seepage: McGraw-Hill Book Co., New York City, 315 pp.

MESA (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, various pagings.

MESA (U.S. Mining Enforcement and Safety Administration), 1976, Design guidelines for coal refuse piles and water, sediment, or slurry impoundments and impounding structures: U.S. Mining Enforcement and Safety Administration report, 7 pp.

Morgenstern, N.R., and Price, V.E., 1965, The analysis of the stability of general slip surfaces; Geotechniques, vol. 15, No. 1, pp. 78-93.

MSHA (U.S. Mine Safety and Health Administration), 1979, Design guidelines for coal refuse piles and water, sediment, or slurry impoundments and impounding structures: Information Report 1R1109, 29 pp.

Naval Facilities Engineering Command, 1971 (revised 1974), Soil mechanics, foundations, and earth structures: U.S. Naval Facilities Engineering Command report NAVFAC DM-7, various pagings.

NCB (National Coal Board -- Great Britain), 1970, Spoil heaps and lagoons: National Coal Board, London, Technical Handbook, 232 pp.

Newmark, N.M. 1965, Effects of earthquakes on dams and embankments: Fifth Rankins Lecture, Geotechnique, June, pp. 139-160.

OSM (U.S. Office of Surface Mining), 1981, Manual for planning and management of mine-cut lakes at surface coal mines, 2d draft, September 1981: Prepared by R. Wayne Nelson and Associates under OSM Contract No. J5101646.

SCS (U.S. Soil Conservation Service), 1972, National Engineering handbook. Section 4, Hydrology.

SCS (U.S. Soil Conservation Service), 1976, (revised 1981), Earth dams and reservoirs: Technical Release No. 60.

SCS (U.S. Soil Conservation Service), 1977, Pond: Practice Standard 378, 8 pp.

SCS (U.S. Soil Conservation Service), 1978, Rating soils for selected uses, 403 in Section 400, Application of soil survey information, in Part II, Procedure guide, Conservation Service National Soils Handbook, various pagings.

Sherard, J. L., Woodward, R. J., Gizienski, S. F., and Clevenger, W. A., 1963, Earth and earth-rock dams: John Wiley and Sons, Inc., New York, 725 pp.

III. PROCEDURAL MATTERS.

Executive Order 12291

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 this is not a major rule and does not require a regulatory impact analysis because it will impose only minor costs on the coal industry and coal consumers.

Regulatory Flexibility Act

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

Paperwork Reduction Act

OSM has received approval from the Office of Management and Budget under *44 U.S.C., 3507* for the information collection requirements in Parts 816 and 817 and have been assigned clearance Nos. 1029-0047 and 1029-0048. These approvals have been codified under Sections 816.10 and 817.10.

The information required by 30 CFR Parts 816 and 817 will be used by the regulatory authority in monitoring and inspecting impoundments associated with surface and underground mining. The obligation to respond is mandatory.

National Environmental Policy Act

OSM has analyzed the impacts of these final rules in the final supplement to "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 from Mark Boster, Chief, Branch of Environmental Analysis, Room 134, Interior South Building, U.S. Department of the Interior, Washington, D.C. 20240. The preamble serves as the record of decision under NEPA. This final rule differs from the draft final rule set forth in Volume III of the FEIS in the following respects:

A number of grammatical or editorial changes have been made which do not alter the substance of the rules. The rules have also been reorganized for clarity.

An introductory statement has been added to Section 816.49(a) which clarifies the applicability of the paragraph to all impoundments.

In the draft final rules published in the FEIS, the plans for impoundments meeting the criteria of 30 CFR 77.216(a) were to be submitted to MSHA and to OSM concurrently. The final rule requires that such plans be submitted to OSM as part of permit applications. In some cases this would require earlier submission to OSM; in others it would be later. This change will not have any environmental effects.

In addition to the design certification requirement included in the draft final rules, which has been reworded, the final rule requires that the design be certified as meeting the requirements of Part 816. In addition, the qualified

registered professional engineer must be experienced both in the design and construction of impoundments, rather than just design. These changes are not expected to have any environmental impacts.

The word "static" has been added to the stability requirement, to indicate that the static safety factor must meet or exceed 1.5. This was intended by the draft final rule, and assumed in the FEIS analysis.

In final Section 816.49(a)(7), OSM has adopted the requirement that areas surrounding faces of embankments be vegetated. This is comparable to the previous rules governing sedimentation ponds and temporary impoundments and is thus covered under Alternative B in the FEIS.

Final Section 816.49(a)(9) does not include the statement that excavated ponds must meet the requirements of paragraph (a). The phrase was redundant and its elimination has no effect.

In final Section 816.49(a)(10)(i), OSM has adopted language requiring inspections yearly until removal of the structure or release of the performance bond. The draft final rules included the language "abandoning the permit area," rather than "release of the performance bond." Since abandonment of the permit area prior to release of the performance bond is not allowed, this change will have no impacts.

In final Section 816.49(a)(12), the emergency procedures requirement has been reworded to more accurately reflect that either examinations or inspections might trigger the requirements for emergency actions. This was intended by the draft final rules and contemplated in the FEIS analysis. The words "from the coal processing waste area" have been removed. They were included by mistake.

Under final Section 816.49(b)(2), water impounded in permanent impoundments after reclamation must meet applicable State and Federal water quality standards. Under the draft final rules impounded water quality was only required to be suitable for the post-mining land use. This is expected to have a beneficial environmental impact.

The draft final rules would have required permanent impoundments to be designed, constructed, and maintained on the basis of 50-year, 6-hour events or such larger events as the regulatory authority would require. Final Section 816.49(b)(7) requires that spillways be sufficient to discharge that event. The difference is not expected to have any impact, since design and construction of impoundments in accordance with the other performance standards will ensure stability and environmental protection.

The draft final rules with regard to temporary impoundments would have required that they be designed, constructed, and maintained on the basis of the 25-year, 6-hour event or such larger event as the regulatory authority would require. Final Section 816.49(c) requires that spillways for those impoundments be designed for those events. This is not expected to have any impacts based on the reasoning discussed above concerning the same change in final Section 816.49(b)(7).

The changes to Section 817.49 are identical to those of Section 816.49.

Agency Approval

Section 516(a) of the Act requires that, with regard to rules directed toward the surface effects of underground mining, OSM must obtain written concurrence from the head of the department which administers the Federal Mine Safety and Health Act of 1977. OSM has obtained the written concurrence of the Assistant Secretary for Mine Safety and Health, U.S. Department of Labor.

One commenter cautioned OSM to carefully coordinate with MSHA officials with respect to proposed automatic incorporation of MSHA rules which were not appropriate or applicable. As discussed elsewhere OSM has established contact with several agencies, including MSHA, and discussed the effect of OSM's reference to their rules. Thus, OSM has accepted the suggestion by the commenter.

Under Section 501(a)(B) of the Act the Secretary may not promulgate and publish regulations relating to water quality standards promulgated under the authority of the Federal Water Pollution Control Act, as amended *33*

U.S.C. 1151-1175, until he has obtained the written concurrence of the Administrator of the Environmental Protection Agency (EPA). The written concurrence has been received with respect to these rules.

LIST OF SUBJECTS

30 CFR Part 701
Coal mining, Law enforcement, 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. Section 701.5 is amended by adding definitions of "MSHA," "permanent impoundments," and "temporary impoundments" in alphabetical order and revising the definitions of "impoundments" and "sedimentation ponds" to read as follows:

SECTION 701.5 - DEFINITIONS.

* * * * *
IMPOUNDMENTS means all water, sediment, slurry or other liquid or semi-liquid holding structures and depressions, either naturally formed or artificially built.

* * * * *

MSHA means the Mine Safety and Health Administration.

* * * * *

PERMANENT IMPOUNDMENT means an impoundment which is approved by the regulatory authority and, if required, by other State and Federal agencies for retention as part of the postmining land use.

* * * * *

SEDIMENTATION POND means an impoundment used to remove solids from water in order to meet water quality standards or effluent limitations before the water leaves the permit area.

* * * * *

TEMPORARY IMPOUNDMENT means an impoundment used during surface coal mining and reclamation operations, but not approved by the regulatory authority to remain as part of the approved postmining land use.

* * * * *

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

2. Section 816.49 is revised to read as follows:

SECTION 816.49 - IMPOUNDMENTS.

(a) General requirements. The requirements of this paragraph apply to both temporary and permanent impoundments.

(1) Impoundments meeting the criteria of Section 77.216(a) of this title shall comply with the requirements of Section 77.216 of this title and this section. The plan required to be submitted to the District Manager of MSHA under Section 77.216 of this title shall also be submitted to the regulatory authority as part of the permit application.

(2) Design certification. The design of impoundments shall be certified by a qualified registered professional engineer as designed to meet the requirements of this part using current, prudent engineering practices, and any design criteria established by the regulatory authority. The qualified registered professional engineer shall be experienced in the design and construction of impoundments.

(3) Stability. Impoundments shall have a minimum static safety factor of 1.5 for the normal pool with steady seepage saturation conditions, and a seismic safety factor of at least 1.2.

(4) Freeboard. Impoundments shall have adequate freeboard to resist overtopping by waves and by sudden increases in storage volume.

(5) Foundation.

(i) Foundation and abutments for the impounding structure shall be designed to be stable under all conditions of construction and operation of the impoundment. Sufficient foundation investigations and laboratory testing shall be performed in order to determine the design requirements for foundation stability.

(ii) All vegetative and organic materials shall be removed and foundations excavated and prepared to resist failure. Cutoff trenches shall be installed if necessary to ensure stability.

(6) Slope protection shall be provided to protect against surface erosion at the site and protect against sudden drawdown.

(7) Faces of embankments and surrounding areas shall be vegetated, except that faces where water is impounded may be riprapped or otherwise stabilized in accordance with accepted design practices.

(8) Impoundments shall include a combination of principal and emergency spillways which shall be designed and constructed to safely pass the design precipitation event specified in paragraph (b) or (c) of this section.

(9) The vertical portion of any remaining highwall shall be located far enough below the low-water line along the full extent of highwall to provide adequate safety and access for the proposed water users.

(10) Inspections. A qualified registered professional engineer or other qualified professional specialist, under the direction of the professional engineer, shall inspect the impoundment. The professional engineer or specialist shall be experienced in the construction of impoundments.

(i) Inspections shall be made regularly during construction, upon completion of construction, and at least yearly until removal of the structure or release of the performance bond.

(ii) The qualified registered professional engineer shall promptly, after each inspection, provide to the regulatory authority a certified report that the impoundment has been constructed and maintained as designed and in accordance with the approved plan and this chapter. The report shall include discussion of any appearances of instability, structural weakness or other hazardous conditions, depth and elevation of any impounded waters, existing storage capacity, any existing or required monitoring procedures and instrumentation and any other aspects of the structure affecting stability.

(iii) A copy of the report shall be retained at or near the minesite.

(11) Impoundments subject to Section 77.216 of this title must be examined in accordance with Section 77.216-3 of this title. Other impoundments shall be examined at least quarterly by a qualified person designated by the operator for appearance of structural weakness and other hazardous conditions.

(12) Emergency procedures. If any examination or inspection discloses that a potential hazard exists, the person who examined the impoundment shall promptly inform the regulatory authority 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.

(b) Permanent impoundments. A permanent impoundment of water may be created, if authorized by the regulatory authority in the approved permit based upon the following demonstration:

(1) The size and configuration of such impoundment will be adequate for its intended purposes.

(2) The quality of impounded water will be suitable on a permanent basis for its intended use and, after reclamation, will meet applicable State and Federal water quality standards, and discharges from the impoundment will meet applicable effluent limitations and will not degrade the quality of receiving water below applicable State and Federal water quality standards.

(3) The water level will be sufficiently stable and be capable of supporting the intended use.

(4) Final grading will provide for adequate safety and access for proposed water users.

(5) The impoundment will not result in the diminution of the quality and quantity of water utilized by adjacent or surrounding landowners for agricultural, industrial, recreational, or domestic uses.

(6) The impoundment will be suitable for the approved postmining land use.

(7) The design precipitation event for the spillways for a permanent impoundment will be a 50-year, 6-hour precipitation event, or such larger event as the regulatory authority may require.

(c) Temporary impoundments.

(1) The regulatory authority may authorize the construction of temporary impoundments as part of a surface coal mining operation.

(2) The design precipitation event for the spillways for a temporary impoundment is a 25-year, 6-hour precipitation event, or such larger event as the regulatory authority may require.

3. Section 816.56 is revised to read as follows:

SECTION 816.56 - POSTMINING REHABILITATION OF SEDIMENTATION PONDS, DIVERSIONS, IMPOUNDMENTS, AND TREATMENT FACILITIES.

Before abandoning a permit area or seeking bond release, the operator shall ensure that all temporary structures are removed and reclaimed, and that all permanent sedimentation ponds, diversions, impoundments, and treatment facilities meet the requirements of this chapter for permanent structures, have been maintained properly, and meet the requirements of the approved reclamation plan for permanent structures and impoundments. The operator shall renovate such structures if necessary to meet the requirements of this chapter and to conform to the approved reclamation plan.

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

4. Section 817.49 is revised to read as follows:

SECTION 817.49 - IMPOUNDMENTS.

(a) General requirements. The requirements of this paragraph apply to both temporary and permanent impoundments.

(1) Impoundments meeting the criteria of Section 77.216(a) of this title shall comply with the requirements of Section 77.216 of this title and this section. The plan required to be submitted to the District Manager of MSHA under Section 77.216 of this title shall also be submitted to the regulatory authority as part of the permit application.

(2) Design certification. The design of impoundments shall be certified by a qualified registered professional engineer as designed to meet the requirements of this part using current, prudent engineering practices and any design criteria established by the regulatory authority. The qualified registered professional engineer shall be experienced in the design and construction of impoundments.

(3) Stability. Impoundments shall have a minimum static safety factor of 1.5 for the normal pool with steady seepage saturation conditions, and a seismic safety factor of at least 1.2.

(4) Freeboard. Impoundments shall have adequate freeboard to resist overtopping by waves and by sudden increases in storage volume.

(5) Foundation.

(i) Foundation and abutments for the impounding structure shall be designed to be stable under all conditions of construction and operation of the impoundment. Sufficient foundation investigations and laboratory testing shall be performed in order to determine the design requirements for foundation stability.

(ii) All vegetative and organic materials shall be removed and foundations excavated and prepared to resist failure. Cutoff trenches shall be installed if necessary to ensure stability.

(6) Slope protection shall be provided to protect against surface erosion at the site and protect against sudden drawdown.

(7) Faces of embankments and surrounding areas shall be vegetated, except that faces where water is impounded may be riprapped or otherwise stabilized in accordance with accepted design practices.

(8) Impoundments shall include a combination of principal and emergency spillways which shall be designed and constructed to safely pass the design precipitation event specified in paragraph (b) or (c) of this section.

(9) The vertical portion of any remaining highwall shall be located far enough below the low-water line along the full extent of highwall to provide adequate safety and access for the proposed water users.

(10) Inspections. A qualified registered professional engineer or other qualified professional specialist, under the direction of the professional engineer, shall inspect the impoundment. The professional engineer or specialist shall be experienced in the construction of impoundments.

(i) Inspections shall be made regularly during construction, upon completion of construction, and at least yearly until removal of the structure or release of the performance bond.

(ii) The qualified registered professional engineer shall promptly, after each inspection, provide to the regulatory authority, a certified report that the impoundment has been constructed and maintained as designed and in accordance with the approved plan and this chapter. The report shall include discussion of any appearances of instability, structural weakness or other hazardous conditions, depth and elevation of any impounded waters, existing storage capacity, any existing or required monitoring procedures and instrumentation and any other aspects of the structure affecting stability.

(iii) A copy of the report shall be retained at or near the minesite.

(11) Impoundments subject to Section 77.216 of this title must be examined in accordance with Section 77.216-3 of this title. Other impoundments shall be examined at least quarterly by a qualified person designated by the operator for appearance of structural weakness and other hazardous conditions.

(12) Emergency procedures. If any examination or inspection discloses that a potential hazard exists, the person who examined the impoundment shall promptly inform the regulatory authority 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.

(b) Permanent impoundments. A permanent impoundment of water may be created, if authorized by the regulatory authority in the approved permit based upon the following demonstration:

(1) The size and configuration of such impoundment will be adequate for its intended purposes.

(2) The quality of impounded water will be suitable on a permanent basis for its intended use and, after reclamation, will meet applicable State and Federal water quality standards, and discharges from the impoundment will meet applicable effluent limitations and will not degrade the quality of receiving water below applicable State and Federal water quality standards.

(3) The water level will be sufficiently stable and be capable of supporting the intended use.

(4) Final grading will provide for adequate safety and access for proposed water users.

(5) The impoundment will not result in the diminution of the quality and quantity of water utilized by adjacent or surrounding landowners for agricultural, industrial, recreational, or domestic uses.

(6) The impoundment will be suitable for the approved postmining land use.

(7) The design precipitation event for the spillways for a permanent impoundment will be a 50-year, 6-hour precipitation event, or such larger event as the regulatory authority may require.

(c) Temporary impoundments.

(1) The regulatory authority may authorize the construction of temporary impoundments as part of underground mining activities.

(2) The design precipitation event for the spillways for a temporary impoundment is a 25-year, 6-hour precipitation event, or such larger event as the regulatory authority may require.

5. Section 817.56 is revised to read as follows:

SECTION 817.56 - POSTMINING REHABILITATION OF SEDIMENTATION PONDS, DIVERSIONS, IMPOUNDMENTS, AND TREATMENT FACILITIES.

Before abandoning a permit area or seeking bond release, the operator shall ensure that all temporary structures are removed and reclaimed, and that all permanent sedimentation ponds, diversions, impoundments, and treatment facilities meet the requirements of this chapter for permanent structures, have been maintained properly, and meet the requirements of the approved reclamation plan for permanent structures and impoundments. The operator shall renovate such structures if necessary to meet the requirements of this chapter and to conform to the approved reclamation plan.

Authority: Pub. L. 95-87, *30 U.S.C. 1201* et seq.

[FR Doc. 83-25662 Filed 9-22-83; 8:45 am]
BILLING CODE 4310-05-M