

## CHAPTER 62-673 PHOSPHOGYPSUM MANAGEMENT

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### 62-673.200 Definitions.

The following words, phrases or terms as used in this chapter, unless the context indicates otherwise, shall have the following meaning:

(1) "Aquifer" means a geologic formation, group of formations, or part of a formation capable of yielding a significant amount of groundwater to wells, springs or surface water.

(2) "Closing" means the time at which a phosphogypsum stack system ceases to accept wastes, and includes those actions taken by the owner or operator of the facility to prepare the system for any necessary monitoring and maintenance after closing.

(3) "Closure" means the cessation of operation of a phosphogypsum stack system and the act of securing such a system so that it will pose no significant threat to human health or the environment. This includes closing, long-term monitoring, maintenance and financial assurance.

(4) "Department" means the State of Florida Department of Environmental Protection.

(5) "Disposal" means the discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid waste into or upon any land or water so that such solid waste or any constituent thereof may enter other lands or be emitted into the air or discharged into any waters, including groundwaters, or otherwise enter the environment.

(6) "Facility" means all contiguous land and structures, other appurtenances and improvements on the phosphate fertilizer manufacturing complex.

(7) "Final cover" means the materials used to cover the top and sides of a phosphogypsum stack upon closure.

(8) "Geomembrane" means a low-permeability synthetic membrane used as an integral part of a system designed to limit the movement of liquid or gas in the system.

(9) "Lateral expansion" means the expansion, horizontally, of phosphogypsum or process wastewater storage capacity beyond the permitted capacity and design dimensions of the phosphogypsum stack, or cooling ponds, surge ponds, and perimeter drainage conveyances at an existing facility. Any phosphogypsum stack, cooling pond, surge pond, or perimeter drainage conveyance which is constructed within 2000 feet of an existing phosphogypsum stack system, measured from the edge of the expansion nearest to the edge of the footprint of the existing phosphogypsum stack system, is considered a lateral expansion.

(10) "Leachate" means liquid that has passed through or emerged from phosphogypsum.

(11) "Liner" means a continuous layer of low permeability natural or synthetic materials which controls the downward and lateral escape of waste constituents or leachate from a phosphogypsum stack system.

(12) "100-year floodplain" means the lowland and relatively flat areas adjoining inland and coastal waters, including flood-prone areas of offshore islands, that are inundated by the 100-year flood.

(13) "Phosphogypsum" means calcium sulfate and byproducts produced by the reaction of sulfuric acid with phosphate rock to produce phosphoric acid. Phosphogypsum is a solid waste within the definition of Section 403.703(13), F.S.

(14) "Phosphogypsum stack" means any defined geographic area associated with a phosphoric acid production facility in which phosphogypsum is disposed of or stored, other than within a fully enclosed building, container or tank.

(15) "Phosphogypsum stack system" means the phosphogypsum stack (or pile, or landfill), together with all pumps, piping, ditches, drainage conveyances, water control structures, collection pools, cooling ponds, surge ponds, auxiliary holding ponds, regional holding ponds and any other collection or conveyance system associated with the transport of phosphogypsum from the plant to the phosphogypsum stack, its management at the stack, and the process wastewater return to the phosphoric acid production or other process. This definition specifically includes toe drain systems and ditches and other leachate collection

systems, but does not include conveyances within the confines of the fertilizer production plant or emergency diversion impoundments used in emergency circumstances caused by rainfall events of high volume or duration for the temporary storage of process wastewater to avoid discharges to surface waters of the state.

(16) "Process wastewater" means any water which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, by-product, or waste product, along with any leachate or runoff from the phosphogypsum stack system. This term does not include contaminated nonprocess wastewater as that term is defined in 40 CFR 418.11(c).

(17) "Related parties" means affiliates of the enterprise; entities for which investments are accounted by the equity method by the enterprise; trusts for the benefit of employees, such as pension and profit-sharing trusts that are managed by or under the trusteeship of management; principal owners of the enterprise; its management; members of the immediate families of principal owners of the enterprise and its management; and other parties with which the enterprise may deal if one party controls or can significantly influence the management or operating policies of the other to an extent that one of the transacting parties might be prevented from fully pursuing its own separate interests. Another party also is a related party if it can significantly influence the management or operating policies of the transacting parties or if it has an ownership interest in one of the transacting parties and can significantly influence the other to an extent that one or more of the transacting parties might be prevented from fully pursuing its own separate interests.

(18) "Shallow water supply well" means any potable water well which pumps water from an unconfined water table aquifer.

(19) "Stack system configuration as of the end of its useful life" means the maximum physical dimensions of the phosphogypsum stack system as provided by the applicant in a general plan and schedule for closure or a closure plan submitted to the Department pursuant to Rule 62-673.600 or 62-673.610, F.A.C.

*Specific Authority 403.061, 403.4154, 403.704 FS. Law Implemented 403.4154, 403.703, 403.707 FS. History—New 3-25-93, Formerly 17-673.200, Amended 7-2-05, 7-19-06.*

#### **62-673.220 Applicability.**

(1) The provisions of this chapter apply to new phosphogypsum stack systems or lateral expansions of existing phosphogypsum stack systems for which a complete permit application or request for modification of an existing permit is submitted after 3-25-93.

(a) Except for incidental deposits of phosphogypsum entrained in the process wastewater, placement of phosphogypsum outside the phosphogypsum stack footprint is considered a lateral expansion of the phosphogypsum stack system. The footprint is defined as the outside edge of the starter dikes used to contain the placement of phosphogypsum in the stack.

(b) Storage or containment of process wastewater outside the footprint of the phosphogypsum stack, cooling ponds, surge ponds, or perimeter drainage conveyances existing on 3-25-93 is considered a lateral expansion of the phosphogypsum stack system. The footprint is defined as the outside edge of the dams, dikes or ditches used to store or contain process wastewater.

(2) Rule 62-673.500, F.A.C., shall also apply to existing active facilities after 3-25-93 at the time of permit renewal, or upon issuance of a temporary operating permit.

(3) Rules 62-673.600-.650, F.A.C., apply to all phosphogypsum stack systems, whether planned, active, or inactive as described in subsection 62-673.600(1), F.A.C.

(4) Lateral expansions of phosphogypsum stack systems are considered existing installations as defined in Chapter 62-522, F.A.C.

(5) Notwithstanding the provisions of paragraph (1)(a) of this rule, placement of phosphogypsum into an existing process wastewater area located adjacent to and extending to no more than 350 feet from the edge of the footprint of an existing phosphogypsum stack is not considered a lateral expansion if:

(a) By [3-25-93 + 3 months], the owner or operator of the phosphogypsum stack system submits to the Department an application for a construction permit for the additional placement area which demonstrates that such placement will not result in a violation of applicable Department ground water standards or criteria;

(b) By [3-25-93 + 3 months], the owner or operator of the phosphogypsum stack system submits to the Department an application, which includes detailed design features, for a permit to construct a new lined cooling pond which meets the design requirements of Rule 62-673.400, F.A.C., and this cooling pond is constructed within two years of the issuance of the construction permit; and

(c) No phosphogypsum is placed in any unlined area after [3-25-93 + 8 years].

*Specific Authority 403.061, 403.4154, 403.704 FS. Law Implemented 403.4154, 403.707 FS. History—New 3-25-93, Formerly 17-673.220.*

#### **62-673.300 Prohibitions.**

(1) No person shall dispose of, or store prior to disposal, any phosphogypsum except within a phosphogypsum stack system permitted by the Department in accordance with this chapter. This provision shall not be construed to prohibit any use or reuse of phosphogypsum not otherwise prohibited by law.

(2) Material subject to the licensure requirements of Chapter 404, F.S., and Chapter 64E-5, F.A.C., shall only be placed on a phosphogypsum stack in accordance with the terms of that license issued by the Department of Health and Rehabilitative Services.

*Specific Authority 403.061, 403.4154, 403.704 FS. Law Implemented 403.4154, 403.707, 403.708 FS. History—New 3-25-93, Formerly 17-673.300.*

#### **62-673.310 Alternate Procedures and Requirements.**

(1) Any person subject to the provisions of this chapter may request in writing a determination by the Department that a procedure or requirement shall not apply, and shall request approval of alternate procedures or requirements.

(2) The request shall set forth at a minimum the following information:

- (a) The specific facility or site for which an exception is sought;
- (b) The specific procedures or requirements from which an exception is sought;
- (c) The basis for the exception;

(d) The alternate procedure or requirement for which approval is sought and a demonstration that this alternate procedure or requirement provides an equal degree of protection for the public and the environment; and

(e) A demonstration of the effectiveness of the proposed alternative procedure or requirement.

(3) The department shall authorize by order each alternative procedure or requirement approved for an individual facility or site in accordance with this rule or shall deny by order the request for such approval.

(4) Requests for alternate procedures or requirements shall be accompanied by a fee of \$2000 in accordance with subparagraph 62-4.050(4)(m)4., F.A.C. Requests must be submitted to the Director of Water Facilities, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400.

*Specific Authority 403.061, 403.4154, 403.704 FS. Law Implemented 403.4154, 403.707 FS. History—New 3-25-93, Formerly 17-673.310.*

#### **62-673.320 Permitting of Phosphogypsum Stack Systems.**

(1) No phosphogypsum stack system shall be constructed, operated, expanded, modified or closed without an appropriate and currently valid permit issued by the Department in accordance with this chapter. Facilities operating without a permit on 3-25-93 shall, within 180 days, apply for a temporary operating permit from the Department.

(2) Permit application. The person making application for a permit for a phosphogypsum stack system shall submit to the respective Department district office having jurisdiction where the facility is located a minimum of four copies each of a permit application, engineering plans, and all supporting data and reports for the proposed construction, operation, or closure of the facility prepared by a professional engineer registered in the State of Florida in accordance with provisions of Chapter 471, F.S. Said engineer or another registered professional engineer shall be required to make periodic inspections during construction of the facility to ensure that design integrity is maintained.

(3) Preparation of application. The application for a permit shall be prepared and signed by the applicant on Form 62-673.900(1), Application for Permit to Construct/Operate a Phosphogypsum Stack System, effective 3-25-93, which is adopted and incorporated herein by reference. This form may be obtained by contacting the appropriate district office or by writing the Department of Environmental Protection, Bureau of Water Facilities Planning and Regulation, 2600 Blair Stone Road, MS3535, Tallahassee, Florida 32399-2400. The application shall include all information necessary for the Department to make an evaluation of the proposed facility to ensure that it will pose no significant threat to public health or the environment. The permit application and supporting information shall include the following:

(a) A letter of transmittal to the Department.

(b) A table of contents listing the main sections of the application.

(c) The permit fee specified in Rule 62-4.050, F.A.C., in check or money order payable to the Department.

(d) Engineer and/or geologist seal. Where required by Chapter 471 or 492, F.S., data presented in support of the application shall be signed and sealed by the professional engineer or professional geologist who prepared or approved the data.

(e) All construction, operation, closure, and ground water monitoring plans, data, drawings, photographs, and reports to support the application.

(f) All maps, plan sheets, drawings, isometrics, or cross-sections to support the application, which shall be legible and:

1. Signed and sealed by the registered professional engineer responsible for their preparation. Wherever possible drawings should be no larger than 24 by 36 inches, folded to 9 by 12 inches. Illustrations, tables or drawings reduced in size should be no smaller than 8 1/2 by 11 inches;

2. Of appropriate scale to show clearly all required details;

3. Numbered, referenced to the narrative, and titled, with a legend of symbols used, horizontal and vertical scales (where applicable), and drafting or origination dates; and

4. Use uniform scales as much as possible, contain a north arrow, and use National Geodetic Vertical Datum (NGVD) as a basis for all elevations.

(g) A map or aerial photograph of the area showing land use and zoning within one mile of the phosphogypsum stack system. This map, or photograph which shall be taken within one year of the permit application, shall be of sufficient scale to show all homes, industrial buildings, wells, water courses, dry runs, rock out-croppings, roads and other significant details. All significant features shall be indicated and labeled on the map or aerial photograph.

(h) A plot plan of the phosphogypsum stack system site showing dimensions, original elevations, proposed final contours and location of soil borings. Cross sections shall be included on the plot plan or on separate sheets showing both the original and proposed elevations. The scale of the plot plan shall not be greater than 200 feet to the inch.

(i) Topographic maps at a scale of not over 200 feet to the inch with five-foot contour intervals. These maps shall show at least: the proposed phosphogypsum stack system area; access roads; grades required for proper drainage; and a typical cross section of any phosphogypsum stacks, cooling ponds, and process wastewater drainage conveyances.

(j) A hydrogeological investigation in accordance with Rule 62-701.410, F.A.C., which is incorporated by reference herein.

(k) A geotechnical investigation in accordance with Rule 62-701.420, F.A.C., which is incorporated by reference herein.

(l) Evidence of an approved laboratory to do ground water monitoring in accordance with Rule 62-160, F.A.C.

(m) A demonstration of ownership or control of the property.

(n) Financial documents assigned to the Department which ensure the financial responsibility for the closing and long-term care of the phosphogypsum stack system.

(4) Notice of application. An applicant for a permit to construct, expand, or close a phosphogypsum stack system shall publish and provide proof of publication to the Department, at its own expense, a Notice of Application in a newspaper of general circulation in accordance with Rule 62-103.150, F.A.C.

(5) Construction, operation and closure permits. After receipt of a complete application to construct, operate, expand, or close a phosphogypsum stack system, the Department shall:

(a) Issue a construction and operation permit for a new or expanded phosphogypsum stack system. After all significant initial construction has been completed and before operation, the engineer shall complete a Certificate of Construction Completion, Form 62-673.900(2), Certification of Construction Completion for a Phosphogypsum Stack System, effective 3-25-93, which is adopted and incorporated herein by reference, and contact the Department to arrange for Department representatives to inspect the facility in the company of the permittee and the engineer. This form may be obtained by contacting the appropriate district office or by writing the Department of Environmental Protection, Bureau of Water Facilities Planning and Regulation, 2600 Blair Stone Road, MS3535, Tallahassee, Florida 32399-2400. The inspection is to ensure that the facility has been constructed in accordance with the approved permit. The facility shall not be operated or accept phosphogypsum or process wastewater except as necessary for construction and testing until the Department has found that all applicable submissions required for the permit, including financial responsibility documentation, have been received and found acceptable; or

(b) Issue an operation permit for a new or expanded phosphogypsum stack system that has been satisfactorily constructed, or to an existing system which is being operated in accordance with applicable portions of this chapter at the time for renewal of their permit; or

(c) Issue a closure permit for closing and long-term care of the system that has satisfied the requirements of Rules 62-673.600-.640, F.A.C. Permits shall be renewed in accordance with Rule 62-4.070, F.A.C.; or

(d) Deny the issuance of a permit if reasonable assurances are not provided that the applicable requirements of Chapters 62-4 and 62-673, F.A.C., will be satisfied.

(6) The design dimensions of a phosphogypsum stack system and the dimensions of the ground water vertical and horizontal zone of discharge shall be established in the permit for any new phosphogypsum stack system or lateral expansion of an existing system. A zone of discharge for an existing installation shall be established or modified in accordance with Rule 62-522.500, F.A.C., at the time of permit renewal, or at the time of issuance of a temporary operating permit.

*Specific Authority 403.061, 403.4154, 403.704 FS. Law Implemented 403.4154, 403.707 FS. History—New 3-25-93, Formerly 17-673.320, Amended 1-16-97.*

#### **62-673.340 Phosphogypsum Stack System General Criteria.**

(1) Performance standards. A phosphogypsum stack system shall be designed, constructed, operated, maintained, closed, and monitored throughout its design period to control the movement of waste and waste constituents into the environment so that ground water and surface water quality standards and criteria of Chapters 62-302 and 62-520, F.A.C., will not be violated beyond the applicable zone of discharge specified for the system.

(2) Location requirements.

(a) Set back distances shall be maintained between the phosphogypsum stack system and the property boundary of sufficient width to allow for location of ground water monitoring wells in a manner that will enable detection of ground water quality changes before contaminant transport to the boundary of the permittee's zone of discharge.

(b) No part of a phosphogypsum stack system shall be located in the 100-year flood plain where it will restrict the flow of the 100-year flood, reduce the temporary water storage capacity of the flood plain unless compensating storage is provided, or result in a washout of any part of the system.

(c) After completion of construction, phosphogypsum stack systems shall not be located within 200 feet of any natural or artificial surface water of the state, except bodies of water contained completely within the property boundaries of the facility which do not discharge from the site to surface waters unless special design features are used to assure that construction and operation of the system will not result in a violation of applicable water quality standards.

(d) Phosphogypsum stack systems shall not be located within 500 feet of an existing or approved shallow water supply well used for drinking water unless disposal takes place in a phosphogypsum stack system for which a complete permit application was filed, or which was originally permitted, before the shallow water supply well was in existence.

(3) Operation plan. The owner or operator of a phosphogypsum stack system shall have an operation plan that provides written, detailed instructions for the daily operation of the system. The operation plan shall be kept at or near the facility and shall be accessible to operators of the system.

(4) Ground water monitoring.

(a) Monitor well location, construction, and the collection and testing of samples shall be as specified in Rules 62-522.600 and 62-4.246, F.A.C., and Chapter 62-160, F.A.C.

(b) All ground water monitoring data shall be displayed in graphic form for analyzing trends in water quality.

(c) When requested by the Department the facility operator shall inform the Department of the next sampling schedule so that a representative of the Department may be present to collect a split sample.

(5) Surface water management. Phosphogypsum stack systems shall be operated to provide for the collection, control, recycling and treatment of surface runoff from the site as necessary to meet the applicable water quality standards of Chapters 62-520 and 62-302, F.A.C.

(6) Leachate management. Any leachate emanating from a phosphogypsum stack system shall be collected and routed to a cooling pond or surge pond, contained and treated as necessary to meet the applicable water quality standards of Chapters 62-302, 62-520, and 62-660, F.A.C.

(7) Interim Stack System Management Plan (ISSMP). The owner or operator of each phosphogypsum stack system shall submit a written ISSMP to the Department by July 1st following the effective date of these amendments (July 2, 2005). The ISSMP shall provide instructions for two years of operation and management of the specific phosphogypsum stack system should a shutdown occur such that no phosphoric acid will be produced at the facility for a two-year period. By July 1 of each following year, the owner or operator shall submit an updated ISSMP, taking into account the process wastewater levels and the existing stack system configuration as of June 1 of that year. The ISSMP shall include:

(a) A detailed description of process wastewater management procedures that will be implemented to insure that the stack system operates in accordance with all applicable Department permit conditions and rules. The procedures shall address the actual process wastewater levels present at the facility as of June 1 of each year and shall assume that the facility will receive average annual rainfall during the two year planning period;

(b) A detailed description of the procedures to be followed for the daily operation and routine maintenance of the stack system (including required environmental sampling and analyses) as well as for any maintenance or repairs recommended following annual inspections of the system;

(c) Identification of all machinery, equipment and materials necessary to implement the plan as well as actions that would be taken to assure the availability of these items during the planning period;

(d) Identification of the sources of power or fuel necessary to implement the plan as well as the actions that would be taken to assure the availability of power or fuel during the planning period; and

(e) Identification of the personnel necessary to implement the plan, including direct labor required for paragraphs (a) and (b) above, and any necessary direct supervisory personnel, as well as the actions that would be taken to assure their availability and any required training of these personnel.

(8) No ISSMP is required for phosphogypsum stack systems that are closed, that are undergoing closure, or for which an application for a closure permit has been submitted pursuant to Rule 62-673.600, F.A.C., as of July 2, 2005.

*Specific Authority 403.061, 403.4154, 403.704 FS. Law Implemented 403.4154, 403.707 FS. History—New 3-25-93, Formerly 17-673.340, Amended 12-11-96, 7-2-05.*

#### **62-673.400 Phosphogypsum Stack System Construction Requirements.**

(1) Minimum design standards. The requirements of this rule are the minimum standards for constructing a phosphogypsum stack system. Nothing in this rule shall be construed to prevent the Department from imposing more stringent standards if necessary to protect the environment and the public health and safety due to site specific conditions. An applicant whose system design meets the design standards of this rule will be presumed to provide reasonable assurance that the performance standards of subsection 62-673.340(1), F.A.C., will be met. This presumption may be overcome through a demonstration that site-specific or situation-specific circumstances require the imposition of stricter standards in order to provide such reasonable assurances.

(2) Liner and leachate control systems. Phosphogypsum stacks shall be constructed with composite liners and leachate control systems. Cooling ponds shall be constructed with composite liners.

(a) Liners shall be:

1. Constructed of materials that have appropriate physical, chemical, and mechanical properties to prevent failure due to physical contact with the phosphogypsum, process wastewater or leachate to which they are exposed, climatic conditions, the stress of installation, and other applied stresses and hydraulic pressures which are anticipated during the operational and closure period of the system. The supplier of materials for the liner components shall provide test information accepted by the engineer of record, that supports the capabilities of the materials to meet these needs;

2. Installed upon a base and in a geologic setting capable of providing structural support to prevent overstressing of the liner due to settlements and applied stresses;
3. Constructed so that the bottom of the liner system is not subject to fluctuations of the ground water so as to adversely impact the integrity of the liner system;
4. Designed to resist hydrostatic uplift if the liner is located below the seasonal high ground water table; and
5. Installed to cover all surrounding earth which could come into contact with the phosphogypsum, process wastewater or leachate.

(b) Liner design standards. The synthetic component of composite liners shall consist of a 60-mil or thicker geomembrane liner with a maximum water vapor transmission rate of .24 grams per square meter per day as determined by ASTM Method E96-80, procedure BW, "Test Methods for Water Vapor Transmission of Materials," Sections 04.06, 08.03, and 15.09, which document is incorporated herein by reference. The other component of the composite liner shall consist of either of the following:

1. A layer of compacted soil at least eighteen inches thick, placed below the geomembrane, with a maximum hydraulic conductivity of  $1 \times 10^{-7}$  centimeters per second, constructed in six-inch lifts. The geomembrane liner component shall be installed in direct and uniform contact with the compacted soil component to retard leachate migration if a leak in the flexible membrane liner should occur.
2. A layer of mechanically compacted phosphogypsum at least 24 inches thick, placed above the geomembrane, with a maximum hydraulic conductivity of  $1 \times 10^{-4}$  centimeters per second.

(c) Any proposed composite liner design shall be accompanied by a detailed construction quality assurance plan prepared in accordance with the requirements of subsection 62-701.400(8), F.A.C., describing in detail how the design will be properly constructed in the field. For composite liners using compacted phosphogypsum, the quality assurance plan shall place particular emphasis on protection of the geomembrane during placement and compaction of the phosphogypsum, and on prompt placement of phosphogypsum on the geomembrane.

(d) The following liner design standards are adopted by reference and incorporated herein:

1. Paragraph 62-701.400(3)(d), F.A.C., standards for geomembranes, except for subparagraphs 2. and 3.;
2. Paragraph 62-701.400(3)(e), F.A.C., specifications for geosynthetic components. In addition, the synthetic liner material shall be subjected to continuous spark testing at the production facility prior to delivery to the site for installation. If the continuous spark testing detects any defect, the tested material must be rejected and not delivered to the site;
3. Paragraph 62-701.400(3)(f), F.A.C., standards for soil components;
4. Subsection 62-701.400(7), F.A.C., liner systems construction quality assurance; and
5. Subsection 62-701.400(8), F.A.C., soil liner construction quality assurance.

(e) Leachate control system standards.

1. A perimeter underdrain system designed to stabilize the side slopes of the phosphogypsum stack shall be installed above the geomembrane liner.
2. Perimeter drainage conveyances used in the leachate control system shall either consist of covered or uncovered ditches which are lined continuously with the phosphogypsum stack liner, or of chemically compatible leachate collection pipes. Covered ditches shall have maintenance manholes installed at appropriate intervals. Piped systems shall have manholes or appropriate cleanout structures at appropriate intervals. In the event that unusual site specific hydrogeologic or structural conditions exist, the Department reserves the right to impose stricter standards consistent with obtaining appropriate reasonable assurance that ground water and surface water quality standards will be met.
3. All toe drain or leachate collection systems must be constructed within the lined system.

(f) Liquid containment and conveyance systems.

1. Composite liners shall be used on all liquid containments and conveyances associated with phosphogypsum transport, cooling water, and return of process wastewater. Exceptions are pumped flow systems contained in pipes.
2. Pump and piping systems associated with the transport of phosphogypsum or process wastewater and which cross surface waters must be double contained with chemically compatible materials in a manner that assures that all materials under pumped flow are contained within a lined system in the event of a leak or piping system failure.

*Specific Authority 403.4154, 403.704, 403.061 FS. Law Implemented 403.4154, 403.707 FS. History—New 3-25-93, Formerly 17-673.400.*

### **62-673.600 Closure of Phosphogypsum Stacks.**

(1) Applicability. Rules 62-673.600-.650, F.A.C., are applicable to all existing phosphogypsum stack systems, active or inactive, except those closed or required to be closed under a Department permit or pursuant to a consent order in effect before 3-25-93. These rules also apply to all construction permit applications for new phosphogypsum stack systems.

(2) By September 21, 1993, owners or operators of inactive phosphogypsum stack systems shall submit a closure permit application to the Department on Form 62-673.900(3), Application for Permit to Close a Phosphogypsum Stack System, effective 3-25-93, which is adopted and incorporated herein by reference. This form may be obtained by contacting the appropriate district office or by writing the Department of Environmental Protection, Bureau of Mine Reclamation, 2051 East Dirac Drive, Tallahassee, Florida 32310-3760. The application shall include a closure plan as specified in Rule 62-673.610, F.A.C.

(3) By December 29, 2005, owners or operators of phosphogypsum stack systems shall submit general plans and schedules for closure of its phosphogypsum stack systems. This requirement shall not apply to systems that are closed, are undergoing closure, or for which an application for a closure permit has been submitted as of July 2, 2005. The general plans and schedules shall include:

(a) A description of the physical phosphogypsum stack system configuration as of the end of its useful life;

(b) A site-specific water management plan describing the procedures to be employed during closure of the system to manage the anticipated volume of process wastewater in accordance with Chapters 62-620, 62-672, and 62-673, F.A.C. The plan shall address the management, treatment, and disposal of ponded and pore process wastewater, both during closing activities and long-term care;

(c) An estimate of all costs associated with closure of the system, including the costs of closing, long-term care, and implementation of the site-specific water management plan, in accordance with subsection 62-673.640(2), F.A.C.; and

(d) A description of all construction work necessary to properly close the system in accordance with Rule 62-673.610, F.A.C.

(4) Applicants for construction permits for new phosphogypsum stack systems or lateral expansions of existing systems shall include in the application general plans and schedules for closure of the facility, and shall comply with Rule 62-673.640, F.A.C.

(5) At least 90 days before the deactivation of a phosphogypsum stack system, the owner or operator shall submit a closure permit application including a closure plan to the Department to comply with Rule 62-673.610, F.A.C. For purposes of this rule, a phosphogypsum stack system is considered inactive when it is no longer receiving phosphogypsum and when the owner or operator does not intend to, and in fact does not, deposit any significant quantity of phosphogypsum there within one year.

(6) The owner or operator of a phosphogypsum stack system may request in writing a determination by the Department that the provisions of subsection (5) of this rule shall not apply, and shall request approval of a temporary deactivation of the phosphogypsum stack system on a yearly basis. The Department shall authorize by order each temporary deactivation approved for an individual phosphogypsum stack system in accordance with this subsection or shall deny by order the request for such approval. Each request shall set forth at least the following information:

(a) The specific phosphogypsum stack system or phosphogypsum stack for which approval is sought;

(b) A demonstration that current economic conditions justify a temporary deactivation of the phosphogypsum stack system;

(c) An estimate of the duration of the temporary deactivation of the phosphogypsum stack system, and a demonstration that the stack system is reasonably expected to become active within this estimated time period; and

(d) A description of the measures to be taken to assure that the phosphogypsum stack system will pose no significant threat to the public health and the environment during the temporary deactivation.

*Specific Authority 403.061, 403.4154, 403.704 FS. Law Implemented 403.4154, 403.707 FS. History—New 3-25-93, Formerly 17-673.600, Amended 1-16-97, 7-2-05.*

### **62-673.610 Closure Plan Requirements.**

All closure plans shall address the following requirements, or shall contain an explanation of why the requirement is not applicable. Valid information on record in an existing permit or approved groundwater monitoring plan may be used to satisfy the applicable requirements of this rule.

(1) General information report. This report shall contain:

(a) Identification of the phosphogypsum stack system;

(b) Name, address and phone number of primary contact persons;

(c) Identification of persons or consultants preparing this report;

(d) Present property owner and phosphogypsum stack system operator;

(e) Location by township, range and section, and latitude and longitude of the phosphogypsum stack system;

(f) Total acreage of the phosphogypsum stack system and total acreage of the facility property;

(g) Legal description of the property on which the phosphogypsum stack system is located; and

(h) History of the phosphogypsum stack system, including construction dates and a general description of operations.

(2) Area information report. A report on the area in which the phosphogypsum stack system is located shall be included in the closure plan. The report may use verifiable information available from published documents. The term “area” means that area which may affect or be affected by the phosphogypsum stack system, and at a minimum includes the land within a one-mile radius of the phosphogypsum stack system. The report shall be supplemented by maps and cross-section drawings. The following topics shall be addressed in the report:

(a) Topography;

(b) Hydrology, including surface water drainage patterns and hydrologic features such as surface waters, springs, drainage divides and wetlands;

(c) Geology, including the nature and distribution of lithology, unconsolidated deposits, major confining units and sinkholes;

(d) Hydrogeology, including depth to groundwater table, groundwater flow directions, recharge and discharge areas used by public and private wells within one mile of the phosphogypsum stack system;

(e) Ground and surface water quality;

(f) Land use information. The report shall include a discussion and maps indicating:

1. Identification of adjacent landowners;

2. Zoning;
3. Present land uses; and
4. Roads, highways, right-of-ways, or other easements.

(3) Groundwater monitoring plan and site specific information. The closure plan shall include an approved groundwater monitoring plan containing site specific information which meets the criteria specified in subsection 62-522.600(3), F.A.C.

(4) Assessment of effectiveness of existing phosphogypsum stack system design and operation. Based on the area information report and the groundwater monitoring plan, an assessment shall be prepared which discusses the effects of the phosphogypsum stack system on adjacent ground and surface waters, and the phosphogypsum stack system area. Specific concerns to be addressed are:

- (a) Effectiveness and results of the groundwater investigation; and
- (b) Effects of surface water runoff, drainage patterns, and existing storm water controls.

(5) Closure plan performance standards. The closure plan and closure design plan shall be developed to meet the following performance standards.

(a) Closure plans for phosphogypsum stack systems shall be designed to:

1. Control, minimize or eliminate, to the extent necessary to protect human health and the environment, the post closure escape of phosphogypsum, process wastewater, leachate, and contaminated runoff to ground and surface waters;

2. Minimize leachate generation;

3. Detect, collect, and remove leachate and process wastewater efficiently from the phosphogypsum stack system, and promote drainage of process wastewater from the phosphogypsum stack;

4. Be compatible with any required ground water or surface water corrective action plan;

5. Minimize the need for further maintenance.

(b) Closure plans for phosphogypsum stacks shall include a final cover system designed to:

1. Promote drainage off the stack;

2. Minimize ponding;

3. Minimize erosion;

4. Minimize infiltration into the phosphogypsum stack;

5. Function with little or no maintenance.

(c) Closure plans for ponds and drainage conveyances storing process wastewater shall be designed to:

1. Treat or remove from the ponds and drainage conveyances all process wastewater as soon as practical, either through return of the process wastewater to the manufacturing process, transfer of process wastewater to another pond permitted in accordance with this rule, in-situ treatment, or by treatment and subsequent discharge of the process wastewater under an appropriate discharge permit;

2. Place any sludges removed from a pond or drainage conveyance into an active phosphogypsum stack permitted in accordance with this rule, or an inactive stack undergoing closure in accordance with this rule. The closure plan shall contain a detailed description of procedures for removing or treating the sludges, methods for sampling and testing surrounding soils, and criteria for determining the extent of removal required to satisfy the closure performance standards.

(6) Closure design plan. A closure design plan shall be prepared to meet the closure plan performance standards and shall be based on the area information report, groundwater monitoring plan, and assessment of the effectiveness of the existing phosphogypsum stack system design and operation. The closure design plan shall consist of engineering plans and a report on closing procedures which shall apply to the closing of the phosphogypsum stack system and the monitoring and maintenance during the long-term care period. The closure design plan shall include the following information:

(a) A plan sheet showing phases of site closing.

(b) Drawings showing existing topography and proposed final elevations and grades.

(c) For phosphogypsum stacks, final cover installation plans showing the sequence of applying final cover, including thickness and type of material that will be used. All phosphogypsum stacks shall have a final cover designed to meet the performance standards. Final cover shall be placed over the entire surface of the phosphogypsum stack. The final cover shall be vegetated with drought-resistant species to control erosion, whose root systems will not penetrate any low-permeability barrier layer. Water balance calculations, based on available climatic data, shall be prepared which estimate the rates and volumes of water infiltrating the cover systems, collected by any leachate control system, and migrating out of the bottom of the stack or liner system. Final cover may consist of synthetic membranes, soils, or chemically or physically amended soils or phosphogypsum.

1. Side slopes and all other grades shall be designed to minimize erosion of the final cover material. Such designs shall consider the erosion susceptibility of the material proposed for final cover relative to historical rainfall patterns for the area, the ability to establish and maintain vegetation and special maintenance procedures proposed to insure that infiltration and erosion are minimized. If the side slopes of any stack are steeper than a two-foot horizontal run to one foot vertical rise, the closure design plan shall include a stability analysis demonstrating the longterm stability of the area.

2. Top gradients of final cover on phosphogypsum stacks shall be designed to prevent ponding or low spots and minimize erosion.

a. The final cover on the top gradient shall consist of a barrier soil layer at least 18 inches thick, emplaced in 6-inch thick lifts. A final, 18-inch thick layer of soil or amended phosphogypsum that will sustain vegetation to control erosion shall be placed on top of the barrier layer. For unlined stacks, the barrier layer shall have a maximum permeability of  $1 \times 10^{-7}$  cm/sec; for lined stacks, the barrier layer shall have a maximum permeability of  $1 \times 10^{-5}$  cm/sec. If less permeable soils are used, the thickness of the barrier layer may be decreased to 12 inches provided that infiltration is minimized to an equivalent degree.

b. A geomembrane may be used as an alternative to the low-permeability soil barrier for a final cover, constructed to preclude rainfall infiltration into the stack. A geomembrane used in final cover shall be a semi-crystalline thermoplastic at least 40 mils thick, or a non-crystalline thermoplastic at least 30 mils thick, with a maximum water vapor transmission rate of 2.4 grams per square meter per day, have chemical and physical resistance to materials it may come in contact with, and withstand exposure to the natural environmental stresses and forces throughout the installation, seaming process, and settlement of the phosphogypsum during the closure and long-term care period. A protective soil layer at least 24 inches thick shall be put on top of the geomembrane. Material specifications, installation methods, and compaction specifications shall be adequate to protect the barrier layer from root penetration, resist erosion, and remain stable on the final design slopes. This layer shall include soils or amended phosphogypsum that will sustain vegetative growth.

3. The closure design plan shall describe provisions for cover material for long-term care erosion control, filling other depressions, maintaining berms, and general maintenance of the phosphogypsum stack, and shall specify the anticipated source and amount of material necessary for proper closure of the stack.

(d) The type of leachate control system proposed. The leachate control system shall be designed to prevent leachate from causing violations of water quality standards beyond the approved zone of discharge for the phosphogypsum stack system in accordance with Chapters 62-520 and 62-522, F.A.C.

(e) Compliance with groundwater protection requirements. The closure design plan shall show how the phosphogypsum stack system will meet the water quality standards of Chapter 62-520, F.A.C. The groundwater monitoring plan and sampling schedule may be adjusted for a phosphogypsum stack system where groundwater contamination is not evident or corrective measures have been taken to correct contamination.

(f) The proposed method of stormwater control. This shall include control of stormwater occurring on the phosphogypsum stack system. Stormwater or other surface water which mixes with leachate shall be considered to be leachate and shall be treated to meet the applicable water quality standards of Chapter 62-302, F.A.C., at the point of discharge. The stormwater control plan shall meet the requirements of Chapter 62-25, F.A.C.; however, nothing herein shall be construed to preclude application of the requirements of the appropriate water management district.

(g) The proposed method of access control. The closure design plan shall describe how access to the closed phosphogypsum stack system shall be restricted to prevent any future waste dumping or use of the phosphogypsum stack system by unauthorized persons. Restricted access shall remain in force until the phosphogypsum stack system is stabilized and there is no evidence that the property is being used as an unauthorized dump site.

(h) A description of any proposed final use of the phosphogypsum stack system.

(i) Closure construction quality assurance plan. A detailed construction quality assurance plan shall be developed for construction activities associated with the closure of the phosphogypsum stack system, including each component of the final cover system. The plan shall specify quality assurance test procedures and sampling frequencies. Records shall be kept to document construction quality and demonstrate compliance with plans and specifications. Upon completion of closure activities a final construction quality assurance report shall be submitted to the Department, prepared by a registered professional engineer. The final report shall include at least the following information:

1. Listing of personnel involved in closure construction and quality assurance activities;
2. Scope of work;
3. Outline of construction activities;
4. Quality assurance methods and procedures;
5. Test results (destructive and non-destructive, including laboratory results); and
6. Record drawings.

(7) Closure operation plan. A closure operation plan shall be included in the closure plan, and shall:

(a) Describe the actions which will be taken to close the phosphogypsum stack system, such as placement of cover, grading, construction of berms, ditches, roads, retention-detention ponds, installation or closure of wells and boreholes, installation of fencing or seeding of vegetation, protection of on-site utilities and easements;

(b) Provide a time schedule for completion of the closing and long-term care;

(c) Contain appropriate references to the closure design plan, area information report, groundwater monitoring plan, and other supporting documents;

(d) Describe the proposed method of demonstrating financial responsibility for the long-term monitoring and maintenance;

(e) Indicate any additional equipment and personnel needed to complete closure of the phosphogypsum stack system; and

(f) Describe any proposed use of the system for water storage or water management.

(8) Certification by registered professional engineer. Information, plans, and drawings presented in support of a closure plan shall be prepared under the direction of, and certified by, a registered professional engineer authorized to practice in the State of Florida in accordance with the provisions of Chapter 471, F.S. A letter of appointment shall be submitted by the proper company official confirming that the engineer is authorized to prepare plans and specifications. The professional engineer or another qualified engineer shall be required to make periodic inspections during the closing of the phosphogypsum stack system to insure closure is being accomplished according to the closure plan.

(9) Nothing in the section is intended to preclude the construction of a lined cooling pond on top of an inactive phosphogypsum stack, as long as the pond is constructed in accordance with the applicable provisions of this chapter, and as long as the design is included in the closure plan. Within such a cooling pond, the requirements for minimizing ponding and establishing vegetation cover are not applicable.

*Specific Authority 403.061, 403.4154, 403.704 FS. Law Implemented 403.4154, 403.707 FS. History—New 3-25-93, Formerly 17-673.610.*

#### **62-673.620 Closure Procedures.**

(1) Closing inspections. The Department shall specify in the closure permit or closure plan which particular closing steps or operations must be inspected and approved by the Department before proceeding with subsequent closure actions.

(2) Final survey and record drawings. A final survey shall be performed after closure is complete by an engineer or a registered land surveyor to verify that final contours and elevations of the phosphogypsum stack system are in accordance with the plan as approved in the permit. Aerial mapping techniques which provide equivalent survey accuracy may be substituted for the survey. The survey or aerial mapping information shall be included in a report along with information reflecting the record drawings of the phosphogypsum stack system. Contours should be shown at no greater than five-foot intervals. The owner or operator shall submit this report to the Department in accordance with the closing schedule.

(3) Certification of closure construction completion. A certification of closure construction completion, signed, dated and sealed by the engineer of record, shall be provided to the Department upon completion of closure.

(4) Official date of closing. Upon receipt of the documents required in subsections (2) and (3) of this rule, the Department shall, within 30 days, acknowledge by letter to the facility operator that notice of termination of operations and closing of the phosphogypsum stack system has been received. The date of this letter shall be the official date of closing for purposes of determining the long-term care period.

(5) Use of closed phosphogypsum stack systems. Closed phosphogypsum stack systems, if disturbed, are a potential hazard to public health, groundwater and the environment. The Department retains regulatory control over any activities which may affect the integrity of the environmental protection measures such as the final cover, drainage, liners, monitoring system, or leachate and stormwater controls. Consultation with the Department is required before conducting activities at the closed phosphogypsum stack systems.

*Specific Authority 403.061, 403.4154, 403.70 FS. Law Implemented 403.4154, 403.707 FS. History—New 3-25-93, Formerly 17-673.620.*

#### **62-673.630 Long-Term Care.**

(1) Long-term care period. The owner or operator of any phosphogypsum stack system subject to the requirements of Rules 62-673.600-.620, F.A.C., shall be responsible for monitoring and maintenance of the facility in accordance with an approved closure plan for 50 years from the date of closing. Before the expiration of the long-term care monitoring and maintenance period the Department may extend the time period if the closure design or closure operation plan is found to be ineffective.

(2) Reduced long-term care period. The owner or operator of a phosphogypsum stack system may apply to the Department for a reduced long-term care schedule if reasonable assurance is provided to the Department that there is no significant threat to human health or the environment and if the phosphogypsum stack system:

(a) Has been constructed and operated in accordance with approved standards, has a leachate control system and a liner;

(b) Was closed with appropriate final cover, vegetative cover has been established, and a monitoring system has been installed;

(c) Has a 20-year history after closure of no violations of water quality standards or criteria detected in the monitoring system, and no increases over background water for any monitoring parameters which may be expected to result in violations of water quality standards or criteria; and

(d) Has had no detrimental erosion of cover.

(3) Right of access. The owner or operator of the phosphogypsum stack system shall possess or acquire a sufficient interest in, or a right to use, the property for which a permit is issued, including the access route onto the property to carry out the requirements of this rule. The permittee shall retain the right of entry to the phosphogypsum stack system for the long-term care period, after termination of disposal operations, for inspection, monitoring and maintenance of the site.

(4) Successors in interest. Any person acquiring rights or ownership, possession or operation of a permitted phosphogypsum stack system through lease or transfer of property shall be subject to all requirements of the permit for the facility and shall provide any required proof of financial responsibility to the Department in accordance with this rule. Any lease or transfer of property shall include specific conditions to delineate:

(a) The previous owner or operator is responsible for closure and shall maintain any required proof of financial responsibility until the person acquiring ownership, possession or operation of the phosphogypsum stack system establishes the required proof of financial responsibility with the Department;

(b) Responsibility for the continuance of monitoring, maintenance, and correction of deficiencies or problems; and

(c) Mineral rights attached to the property and the rights to any recoverable materials that may be buried on the property. A Department permit shall be required if any on-site operations subsequent to closure involve disturbing the phosphogypsum stack system.

(5) Transfer of permit. Transfer of the phosphogypsum stack system permit shall be in accordance with the provisions of Rule 62-4.120, F.A.C., and this rule.

(6) Replacement of monitoring devices. If a monitoring well or other device required by the monitoring plan is destroyed or fails to operate for any reason, the phosphogypsum stack system owner or operator shall, immediately upon discovery, notify the Department in writing. All inoperative monitoring devices shall be replaced with functioning devices within 60 days of the discovery of the malfunctioning unit unless the owner or operator is notified otherwise in writing by the Department.

*Specific Authority 403.061, 403.4154, 403.704 FS. Law Implemented 403.4154, 403.707 FS. History—New 3-25-93, Formerly 17-673.630.*

### **62-673.640 Financial Assurance.**

(1) Applicability. As a condition for the issuance of a permit to construct, operate, expand, modify, or close a phosphogypsum stack system, the owner or operator shall provide proof of financial assurance for the cost of closure of the system, as estimated in accordance with subsection (2) of this rule, by using one or more of the financial assurance mechanisms listed in subsections (4) and (5) of this rule (in any combination). Such proof of financial assurance must be submitted within 60 days of the owner or operator's fiscal year end, and annually thereafter.

(2) Closure cost estimates.

(a) The owner or operator shall estimate and report separately the costs of terminal closure, including closing, long-term care, and water management, for the phosphogypsum stack system, based on the stack system configuration as of the end of its useful life. The annual cost of long-term care shall be multiplied by 50 years for a total long term care cost. If the phosphogypsum stack system is undergoing closure or has been closed in accordance with a closure permit pursuant to Rule 62-673.600, F.A.C., the annual cost of long-term care shall be multiplied by the number of years remaining in the 50 year period to reflect the number of years that the stack has been closed. Owners or operators using the financial assurance mechanism identified in subparagraph 62-673.640(4)(a)8., F.A.C., additionally shall estimate and report closure costs for its Florida phosphogypsum stack systems in accordance with the methodology established by Statement of Financial Accounting Standard No. 143. The owner or operator shall submit the estimates on Form 62-673.900(4)(j), together with all supporting documentation, to the Department for approval along with the proof of financial assurance. The costs shall be estimated by a professional engineer registered in the State of Florida in accordance with provisions of Chapter 471, F.S., for a third party performing the work, on a per unit basis, with the source of estimates indicated.

(b) Closing costs shall include estimated costs of cover material, topsoil, seeding, fertilizing, mulching, labor, and any other costs of compliance with Rules 62-673.610 and 62-673.620, F.A.C.

(c) Long-term care costs shall include land surface care, surface water and groundwater monitoring, collection and analysis, and any other costs of compliance with Rule 62-673.630, F.A.C.

(d) Water management costs shall include the costs of implementing the site-specific water management plan specified in paragraph 62-673.600(3)(b), F.A.C. These costs shall be calculated on the basis of the cost of treatment and subsequent disposal of the process wastewater under an appropriate permit.

(3) Required financial assurance submittals.

(a) During the life of the phosphogypsum stack system, the owner or operator shall submit annually a closure cost estimate that is adjusted for inflation and changes in the closing, water management, and long-term care plan. Such adjustments shall be made either by recalculating the cost of closure, water management, and long-term care, in current dollars, or using an inflation factor derived from the most recent Implicit Price Deflator for Gross National Product published by the U.S. Department of Commerce in its Survey of Current Businesses. Owners or operators using the financial assurance mechanism identified in subparagraph 62-673.640(4)(a)8., F.A.C., also shall estimate and report closure costs for its Florida phosphogypsum stack systems in accordance with the methodology established by Statement of Financial Accounting Standard No. 143. The owner or operator shall re-estimate the closure costs in conjunction with the issuance or renewal of the permit.

1. If the owner or operator, or any entity providing the corporate guarantee no longer meets the requirements of the financial test being used, or another financial mechanism being used no longer remains valid, then the owner or operator must notify the Department of its intent to establish an alternate financial assurance within 10 days of failure of the financial assurance mechanism provided. Within 30 days of failure to meet the financial assurance mechanism provided, the owner or operator, or the entity providing the corporate guarantee, shall provide alternate financial assurance as specified in this rule. The Department may require reports of financial condition in addition to those specified in this rule based on a reasonable belief that the owner or operator, or any entity providing the corporate guarantee, no longer meets the requirements of the financial test being used, or another financial mechanism being used no longer remains valid. If the Department finds, on the basis of such reports or other information, that the

requirements of the financial test being used are no longer being met, or that another financial mechanism being used does not remain valid, then the owner or operator, or the entity providing the corporate guarantee, shall provide alternate financial assurance as specified in this rule within 30 days after notification of such finding.

2. If the owner or operator demonstrates to the Department that the value of the financial mechanism (excluding seasonal, cyclical or periodic changes in value) exceeds the total amount of the closure cost estimate, then the Department will allow the owner or operator to reduce the value of the financial mechanism to reflect the new estimate.

(b) The owner or operator, and any entity providing a corporate guarantee, shall prepare balance sheets, income statements, and cash flow statements, according to generally accepted accounting principles within the United States and reported in United States dollars. The owner and operator, and any entity providing a corporate guarantee, shall submit such information to the Department quarterly within 65 days of the end of each fiscal quarter. Cash flow for purposes of confirming quarterly qualification of the financial test shall be based on the sum of the most recent four quarters' cash flow from operations.

(c) The owner or operator, and any entity providing a corporate guarantee, shall submit an audited financial statement annually along with the annually adjusted closure cost estimate within 90 days of the entity's fiscal year end. When an owner or operator and its corporate guarantor file consolidated financial statements, the audited annual financial statements of the parent guarantor shall constitute responsive audited financial statements of each for purposes of this paragraph.

(d) Any owner or operator, or any entity providing a corporate guarantee, in default on any of its financial obligations shall report such default to the Department within ten business days of discovery, notice or determination. Financial obligations shall include loans, bonds, or other credit instruments.

(4) Approved financial assurance mechanisms. An owner or operator may use one or more of the following financial assurance mechanisms, in any combination, to meet the requirements of subsection (1) of this rule: letter of credit, insurance, guarantee bond, performance bond, cash deposit arrangement, or financial test or corporate guarantee as defined in subsection (5) of this rule. Proof of financial assurance shall be submitted annually within 90 days of the end of the fiscal year, unless otherwise required more frequently elsewhere by Rule 62-673.640, F.A.C. The financial information shall be submitted on forms provided by the Department in accordance with the requirements of subsection (6) of this rule.

(a) Cash Deposit Arrangement.

1. A cash deposit arrangement, as used in this subsection, means a trust fund, business or statutory trust, escrow account, or similar cash deposit entity whereby a fiduciary holds and invests funds deposited by the owner or operator, which funds shall be expended upon direction or approval from the Department, and only for the purpose of directly implementing all or some portion of phosphogypsum stack system closure requirements of that particular owner or operator. If the cash deposit arrangement is a trust fund, it must be submitted on Form 62-673.900(4)(a).

2. If the owner or operator uses a cash deposit arrangement as a financial assurance mechanism, the trustee, escrow agent, or other fiduciary of such an arrangement shall be an entity that has the authority to act as a trustee and whose trust operations are regulated and examined by a federal or state agency. The owner or operator may either fund the trust through (a) monthly, quarterly, or annual cash deposits in accordance with subparagraph (4)(a)8. of this rule, or (b) by a single cash deposit to the extent that payment of the costs of closure are not covered by any other means. If the financial test is used in conjunction with the cash deposit arrangement, the amount in the cash deposit arrangement shall be credited against the costs of closure used in the financial test.

3. Any cash deposit arrangement must be established for the sole benefit of the Department and qualify to be free of claims of or against the owner or operator in a bankruptcy case or proceeding. A cash deposit arrangement may not be pledged or hypothecated for any other debt or obligation.

4. The trustee of any cash deposit arrangement shall discharge his duties with the care, skill, prudence, and diligence under the circumstances that a prudent person acting in a like capacity and familiar with such matters would use in the conduct of an enterprise of a like character and with like aims.

5. Neither the fund entity nor the trustee thereof shall be a related party to the owner, operator, or any affiliate thereof.

6. The existence of a cash deposit arrangement shall not affect the primary responsibility and obligation of the owner or operator to fund and perform closure of the facility.

7. Subject to pre-approval by the Department, the owner or operator may use funds in a cash deposit arrangement to reimburse or to pay directly the costs of closure; and to the extent the costs of closure have been paid or otherwise reduced, the aggregate amount of the cash deposit arrangement shall be reduced.

8. The owner or operator of a phosphogypsum stack system may demonstrate financial assurance for the cost of closure of the system by making deposits into a cash deposit account in accordance with the following schedule:

a. Within 60 days of the fiscal year end following July 2, 2005, the owner or operator shall make an initial cash deposit in an amount equal to at least 20% of the funding obligation.

b. Within one year after the initial cash deposit, the owner or operator shall deposit an amount sufficient to bring the balance in the cash deposit account to at least 36.5% of the funding obligation.

c. Within two years after the initial cash deposit, the owner or operator shall deposit an amount sufficient to bring the balance in the cash deposit account to at least 50.5% of the funding obligation.

d. Within three years after the initial cash deposit, the owner or operator shall deposit an amount sufficient to bring the balance in the cash deposit account to at least 62% of the funding obligation.

e. Within four years after the initial cash deposit, the owner or operator shall deposit an amount sufficient to bring the balance in the cash deposit account to at least 70% of the funding obligation.

f. Within five years after the initial cash deposit, the owner or operator shall deposit an amount sufficient to bring the balance in the cash deposit account to at least 75% of the funding obligation.

g. Within six years after the initial cash deposit, the owner or operator shall deposit an amount sufficient to bring the balance in the cash deposit account to at least 80% of the funding obligation.

h. Within seven years after the initial cash deposit, the owner or operator shall deposit an amount sufficient to bring the balance in the cash deposit account to at least 85% of the funding obligation.

i. Within eight years after the initial cash deposit, the owner or operator shall deposit an amount sufficient to bring the balance in the cash deposit account to at least 90% of the funding obligation.

j. Within nine years after the initial cash deposit, the owner or operator shall deposit an amount sufficient to bring the balance in the cash deposit account to at least 95% of the funding obligation.

k. Within ten years after the initial cash deposit, the owner or operator shall deposit an amount sufficient to bring the balance in the cash deposit account to at least 100% of the funding obligation.

l. Annually thereafter, the owner or operator shall maintain a balance in the cash deposit account in an amount equal to 100% of the funding obligation. For purposes of this subparagraph, the term "funding obligation" shall mean the asset retirement obligation calculated for the Florida phosphogypsum stack system in accordance with the methodology established by Statement of Financial Accounting Standards No. 143.

9. Once the Department determines that the purpose of such cash deposit arrangement has been accomplished, the Department shall authorize the trustee to return to the grantor any funds remaining in the trust, escrow account, or other cash deposit arrangement.

10. The owner or operator may terminate the cash deposit arrangement upon providing a substitute financial assurance mechanism that has been approved and accepted by the Department. The trustee of the cash deposit arrangement may disburse the funds to the owner or operator, once the Department accepts a substitute financial assurance mechanism.

(b) Surety Bond. If the owner or operator uses a performance or guarantee bond as a financial mechanism, the surety must be listed as an approved surety under the U.S. Treasury Department's Circular 570. If the status of the surety changes to "suspended" or "terminated" under Circular 570, the owner or operator shall notify the Department within 10 days of such event.

(c) Insurance. If the owner or operator uses insurance as a financial mechanism, neither the owner nor operator, nor any affiliate thereof, shall be a related party to the insurer. Further, any such insurer must have a "secured" financial strength rating of B+ or better by A.M. Best.

(d) If the owner or operator uses a letter of credit as a financial assurance mechanism, neither the owner nor operator, nor any affiliate thereof, shall be a related party to the issuer. The letter of credit shall be provided by a financial institution that is federally insured.

(e) Any owner or operator using one of the mechanisms listed in this section is required to notify the Department within 10 days of the cancellation, disqualification, revocation or failure of the instrument, mechanism or issuing authority, and provide alternative financial assurance within 30 days thereafter. Nothing herein shall relieve a financial institution of its obligation to provide the Department with notice when it intends to cancel a financial assurance mechanism.

(5) Financial test or corporate guarantee.

(a) In lieu of, or in addition to, the financial mechanisms described in subsection (4) of this rule, an owner or operator may use a financial test or corporate guarantee to meet the requirements of subsection (1) of this rule. These shall be submitted on forms provided by the Department in accordance with the requirements of subsection (6) of this rule. For purposes of this subsection, "total liabilities" shall equal those reported on the applicable balance sheet, "tangible net worth" shall equal net worth less any intangible assets reported on the applicable balance sheet, "total assets" shall equal those reported on the applicable balance sheet, and "asset retirement obligation" shall equal the total amount of the liability for asset retirements as reported on the balance sheet. For purposes of this subsection, "closure obligation" means either the estimated cost of closure as required by this subsection, or the total asset retirement obligation reported on the permittee's annual financial statement, whichever is greater. An owner or operator may use the financial test as a financial mechanism if the asset retirement obligation reported on the balance sheet includes the current closure cost estimate as required by this subsection, including the cost to implement the site specific water management plan, and if the asset retirement obligation includes all retirement obligations of the owner or operator in Florida and the rest of the world. To pass the financial test, the owner, operator or guarantor shall meet the criteria of either subparagraph 62-673.640(5)(a)1. or 2., F.A.C., as follows, for that portion of the closure obligation not covered by another financial assurance mechanism:

1. The owner, operator or guarantor must have:

a. A ratio equal to or less than 1.50 comparing total liabilities to tangible net worth;

b. A ratio equal to or greater than 0.10 comparing cash flow from operations to total liabilities for the current year, a ratio equal to or greater than 0.10 comparing cash flows from operations to total liabilities, averaged over the current and preceding fiscal year, or a ratio of current assets to current liabilities greater than 1.5 for the current fiscal year;

c. Tangible net worth at least six times the closure obligation; and

d. Tangible assets located in the United States totaling at least ten times the closure obligation.

2. The owner, operator or guarantor must have:

a. A current bond rating applicable to the most recently issued unsecured bond, with a remaining maturity of at least five years and a cumulative maturity value of the greater of \$100 million or 5% of the company's total assets, of the owner or operator, that has an investment grade rating defined as a BBB- rating or better, from Standards and Poor's or Fitch IBCA/Duff & Phelps bond rating service or a Baa3 rating or better from Moody's bond rating service, as determined and assigned by at least one of these bond rating services;

b. Tangible net worth at least two times the closure obligation; and

c. Tangible assets located in the United States totaling at least five times the closure obligation.

(b) All reported figures shall be in United States dollars, determined in accordance with generally accepted accounting principles within the United States. All entities using the financial test shall provide the Department with a copy of their audited financial statements together with the required financial assurance statements. Financial assurance statements and audited financial statements shall be submitted to the Department within 90 days of the entity's fiscal year end. Failure to meet these requirements shall disqualify the entity from using the financial test in subsection (6) for the next four quarters. No entity that has received an adverse opinion, a disclaimer of opinion or a "going concern qualification" to the opinion on the subject audited financial statements shall qualify to use the financial test. Any entity that has qualified for the financial test, but which subsequently no longer meets the test or receives a revision to its audit opinion that would disqualify the entity from using the financial test, shall report the same to the Department within ten days and provide alternative financial assurance within 30 days thereafter.

(c) If the Department determines that specific events have occurred that make it reasonable to expect that the owner or operator no longer meets the requirements above, it shall require the owner or operator to demonstrate that it continues to meet the requirements of the financial test. These events include default under a financial obligation or an adverse change in the bond rating that lowers the rating below investment grade of any of the owner's obligations. If the owner or operator submits two consecutive quarterly financial statements, as required in paragraph (3)(b) of this rule, each indicating that the owner or operator does not meet the financial test, it shall prepare and submit an audited financial statement covering the previous 12 months or provide an alternate financial assurance mechanism. If the Department finds that the owner or operator does not meet the financial test, the Department shall require that a financial mechanism other than the financial test be used. Any entity using the financial test shall notify the Department within 10 days of any event of default under its financial obligations, any waiver, restructuring or deferral of loan or bond provisions to prevent or avoid an event of default, or downgrading of the bond rating of any bond of the owner or operator.

(d) An owner or operator using the financial test may ask to supplement its financial assurance by one or more of the financial mechanisms specified in subsection (4) of this rule if it cannot meet one of the financial test criteria. If the financial test is used along with another financial assurance mechanism, the closure obligation to be met by the financial test will be reduced by the amount assured by the other financial mechanisms.

(6) 40 C.F.R. Part 264 Subpart H (revised as of July 1, 2000), which contains EPA's rules on financial requirements for owners and operators of hazardous waste facilities is hereby adopted and incorporated by reference, except:

(a) The following sections of 40 C.F.R. Part 264 Subpart H are specifically not adopted as part of this rule:

1. 264.140(a); 264.140(b); 264.140(d); 264.141(a); 264.141(e); 264.142(b); 264.142(c); 264.144(b); 264.144(c); 264.147; 264.149; 264.150 and 264.151.

2. All references to 40 C.F.R. Part 265.

3. All references to sections or subparts of 40 C.F.R. 264 not contained in Subpart H.

4. All references to EPA Regions.

5. All references to RCRA or Section 3008 of RCRA.

(b) References to 40 C.F.R. 264.143(f)(1) and 264.145(f)(1) shall mean subsection 62-673.640(5), F.A.C. References in 40 C.F.R. 264 Subpart H to the United States Environmental Protection Agency (EPA) shall mean the State of Florida Department of Environmental Protection; to Regional Administrator shall mean the Secretary of the Department; to RCRA permits shall mean phosphogypsum stack system permits; to post-closure care/post-closure cost estimate shall mean long-term care/long-term cost estimate; to EPA identification number shall mean the Department identification number; to hazardous waste shall mean phosphogypsum; to hazardous waste treatment, storage or disposal facilities shall mean phosphogypsum stack systems; to Section 3008 of RCRA shall mean Department Agency Action; and to one or more states means in the State of Florida.

(c) The series of financial assurance forms, Forms 62-673.900(4)(a)-(j), which are adopted and incorporated herein by reference, shall be used when submitting proof of financial assurance under this rule. These forms may be obtained by contacting the appropriate district office or by writing the Department of Environmental Protection, Bureau of Mine Reclamation, 2051 East Dirac Drive, Tallahassee, Florida 32310-3760.

1. Form 62-673.900(4)(a), Phosphogypsum Stack System Trust Fund Agreement to Demonstrate Closure, Water Management and/or Long-Term Care Financial Assurance, effective 7-2-05.

2. Form 62-673.900(4)(b), Phosphogypsum Stack System Standby Trust Fund Agreement to Demonstrate Closure, Water Management and/or Long-Term Care Financial Assurance, effective 7-2-05.

3. Form 62-673.900(4)(c), Phosphogypsum Stack System Irrevocable Standby Letter of Credit, effective 7-2-05.

4. Form 62-673.900(4)(d), Phosphogypsum Stack System Insurance Certificate to Demonstrate Closure, Water Management and/or Long-Term Care Financial Assurance, effective 7-2-05.

5. Form 62-673.900(4)(e), Phosphogypsum Stack System Financial Guarantee Bond to Demonstrate Closure, Water Management and/or Long-Term Care Financial Assurance, effective 7-2-05.

6. Form 62-673.900(4)(f), Phosphogypsum Stack System Performance Bond to Demonstrate Closure, Water Management and/or Long-Term Care Financial Assurance, effective 7-2-05.

7. Form 62-673.900(4)(g), Phosphogypsum Stack System Letter from Chief Financial Officer to Demonstrate Closure, Water Management and/or Long-Term Care Financial Assurance, effective 7-2-05.

8. Form 62-673.900(4)(h), Phosphogypsum Stack System Corporate Guarantee, effective 7-2-05.

9. Form 62-673.900(4)(i), Financial Assurance Tests for Closure, Water Management and/or Long-Term Care Costs, effective 7-2-05.

10. Form 62-673.900(4)(j), Phosphogypsum Stack System Closure, Water Management and Long-Term Care Cost Estimate, effective 7-2-05.

*Specific Authority 403.061, 403.4154, 403.704 FS. Law Implemented 403.4154, 403.707 FS. History—New 3-25-93, Formerly 17-673.640, Amended 1-16-97, 7-2-05.*

#### **62-673.650 Closure of Unlined Systems.**

(1) Closure of existing systems. No phosphogypsum or process wastewater shall be placed in an unlined phosphogypsum stack system after March 25, 2001; however, such systems may be used for water storage and water management purposes to facilitate closure. Final closure of each unlined system shall be completed as expeditiously as practicable and no later than five years after it ceases accepting phosphogypsum. For purposes of this subsection, “unlined” means that the phosphogypsum stack or cooling pond was constructed without an installed liner made of synthetic materials, soils, or a combination of these and approved by the Department at the time of construction.

(2) The provisions of subsection (1) of this rule shall not apply to a phosphogypsum stack system, or any portion of that system, if the owner or operator of that system demonstrates to the Department that:

(a) Such system was not causing any violation of a Department water quality standard or criterion on March 25, 1993, and is not reasonably expected to cause any such violation after March 25, 1993; or

(b) The owner or operator will implement corrective measures which will contain seepage from the stack system at or within the permitted zone of discharge and, through further corrective measures or as a result of natural processes, ground water quality at the edge of the permitted zone of discharge will be in compliance with all applicable Department standards and criteria by March 25, 2001.

(3) The demonstrations authorized by subsection (2) of this rule may be made through a permit application or through submittals required by a consent order or an amendment to an existing consent order issued by the Department.

(4) Nothing in this rule shall be construed to limit the Department’s authority to require closure of any phosphogypsum stack system as part of an enforcement action as necessary to protect the public health or the environment.

*Specific Authority 403.061, 403.4154, 403.704 FS. Law Implemented 403.4154, 403.707 FS. History—New 8-1-93, Formerly 17-673.650.*