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Norman H. Bangerter
Governor
Dee C. Hansen
Executive Director
Dianne R. Nielson, Ph.D.
Division Director

State of Utah

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203
801-538-5340

June 11, 1990

TO: Pamela Grubaugh-Littig, Permit Supervisor

FROM: Jesse Kelley, Reclamation Engineer JWK

RE: **Technical Analysis, Utah Power and Light Company, Cottonwood/Wilberg Waste Rock Storage Facility, ACT/015/019, Folder #2, Emery County, Utah**

R614-301-500 Engineering-(JK)

510. Introduction

511. General Requirements

The PAP contains descriptions, maps, cross sections and plans of the proposed operation and its attendant reclamation plan.

Compliance

The operator is in compliance with this section.

Stipulations

None.

512. Certification

All cross sections, maps, plans, engineering designs, geologic cross sections and maps, waste disposal plans, impoundment plans and road plans in the Permit Application Package (PAP) have been examined and certified by a qualified, registered professional engineer (page 4-5).

Compliance

The operator is in compliance with this section.

Stipulations

None.

513. Compliance with MSHA Regulations and MSHA Approval

Nothing in the PAP necessitates compliance with the MSHA regulations cited in this section.

Compliance

The operator is in compliance with this section.

Stipulations

None.

514. Inspections

A professional engineer will periodically inspect the waste rock pile, the road, and the sedimentation pond during construction, operation, and reclamation. The inspecting engineer will, within two weeks of each inspection, submit to the Division a certified report stating whether or not the waste rock pile, the road, or the sedimentation pond, has been constructed and maintained as designed and in accordance with the approved plan (pages 2-15, 2-19).

Compliance

The operator is in compliance with this section.

Stipulations

None.

515. Reporting and Emergency Procedures

If operations cease temporarily, the facility will be maintained as if it were in operation. As soon as it is known that temporary cessation of operations will exceed 30 days, a Notice of Intent to Cease or Abandon Operations will be sent to the Division. The notice will contain: (1) the measured area of the permit area; (2) the extent and kind of reclamation already accomplished; and (3) a description of backfilling, regrading, revegetation, environmental monitoring, and water treatment that will continue during temporary cessation (pages 2-19 and 2-20).

The operator commits to notify the Division, by the quickest possible means, of any slide or immiment impoundment hazard (page 2-19).

Compliance

The operator is in compliance with this section.

Stipulations

None.

516. Prevention of Slides in Surface Coal Mining and Reclamation Activities

Not applicable.

520. Operation Plan

521. General

The operator has included in the PAP an operation plan with maps, cross sections, narrative, descriptions, and calculations which show how the relevant requirements will be met (Chapter II).

Compliance

The operator is in compliance with this section.

Stipulations

None.

521.100 Cross Sections and Maps

The operator has included in the PAP a set of maps which show existing surface facilities and features, landowners, rights-of-entry, public interests, permit areas, land surface configuration, proposed features for the permit area, and transportation facilities. All maps have been prepared by or under the supervision of a qualified, registered, professional engineer, and have been thus certified, in accordance with R614-301-512 (page 4-5).

Compliance

The operator is in compliance with this section.

Stipulations

None.

521.200 Signs and Markers Specifications

A facility permit identification sign will be placed at each point of access. Each sign will measure 40 inches by 18 inches. Each sign will state the facility's name, the owner/operator, address and telephone number, the Utah Reclamation Permit number, the MSHA ID number, and the UPDES permit number.

The operator commits to post, maintain and remove appropriate signs and markers. All signs and markers will be made of a durable material such as thin sheet metal. Perimeter and topsoil markers will measure 10 inches by 14 inches, be post mounted, and read "Perimeter - Do Not Disturb", or "Topsoil", as the case may be (pages 2-18, 2-21 and 2-22).

Compliance

The operator is in compliance with this section.

Stipulations

None.

522. Coal Recovery

Not applicable.

523. Mining Methods

Not applicable.

524. Blasting and Explosives

Warning and all-clear signals will be given before and after blasting. Access to the blasting area will be restricted so as not to jeopardize the safety of the public or of those involved in construction of the waste rock storage facility.

Complete records of all blasts will be compiled and kept on file at the Utah Power and Light Mining Division office in Huntington, Utah.

All blasting will be conducted by persons who have been trained, examined, and certified as provided by 30 CFR 850 and the applicable regulations of the Utah State Industrial Commission. No pre-blasting surveys are necessary since there are no dwellings or structures within one-half mile of the permit area. All blasting will be conducted between sunrise and sunset (pages 2-15, 2-16 and 2-17).

Compliance

The operator is in compliance with this section.

Stipulations

None.

525. Subsidence

Not applicable.

526. Mine Facilities

Not applicable.

527. Transportation Facilities

The only transportation facility within the permit area is the primary access road which will carry waste rock from Utah State Road 57 to the actual storage facility. The road will be located so as to disturb the natural topography as little as possible.

The road will consist of 10 inches of compacted road base gravel overlain by a six-inch thick surface of crushed stone. During construction and use of the road, water will be used to control fugitive dust as well as aid in compaction of the grade material (pages 2-1, 2-8, 2-9, 4-1, 4-2, 4-16 and 4-17).

Compliance

The operator is in compliance with this section.

Stipulations

None.

528. Handling and Disposal of Coal, Overburden, Excess Spoil and Coal Mine Waste

In order to facilitate contemporaneous reclamation, the waste rock storage facility will be constructed in phases. First, a berm of waste rock approximately 10 feet high will be constructed around the outer edge of the waste rock pile. Then, waste material will be placed and compacted inside the berm until the entire area is filled. Then, another berm will be constructed around the edge of the area thus created, and the entire process will be repeated.

Reclamation of the outslope of the waste rock pile will thus proceed berm by berm, the outslope of each berm being reclaimed as its inner area is being filled and compacted. The entire cycle of berm construction, filling and compaction, and contemporaneous outslope reclamation will be repeated until the waste rock pile is completed (pages 2-10, 2-10.1 and 2-10.2).

Compliance

The operator is in compliance with this section.

Stipulations

None.

529. Management of Mine Openings

Not applicable.

530. Operational Design Criteria and Plans

531. General

532. Sediment Control

Two ditches, designated "DA" and "DB", encircle the entire waste rock pile. These ditches will receive runoff from the waste rock pile, from one side of each of the two topsoil storage piles, and from the area above the waste rock pile, and will transport the runoff to the sedimentation pond at the lower end of the permit area.

The runoff from the outside slopes of the topsoil storage piles and from the outslope of the road will not go to the sedimentation pond. Instead, it will be treated with straw bales or silt fences or a combination of the two (pages 2-1 through 2-8, 4-7 through 4-14 and 4-14.1).

Compliance

The operator is in compliance with this section.

Stipulations

None.

533. Impoundments

The only impoundment in the permit area will be the sedimentation pond. It will have a capacity of less than 20 acre-feet and will measure less than 20 feet from toe to crest and need not, therefore, meet the requirements of MSHA, 30CFR77.216.

The operator has found the static, steady-state seepage safety factor and the seismic safety factor for the sedimentation pond to be 1.9 and 1.3, respectively. These values are well above the respective required values of 1.5 and 1.2 (pages 2-19, 4-15.1, 4-15.2, 4-15.3 and Map 4-5).

Compliance

The operator is in compliance with this section.

Stipulations

None.

534. Roads

There will be one primary access road in the permit area (see Section 527-Transportation Facilities). It will be located on a stable part of the permit area in such a way as to create as little disturbance of the naturual topography as possible. Both its surface and its subgrade will consist of crushed gravel. Its outslopes, which have a grade of 1v:1.5h, will have a safety factor of 1.5. It will be watered to control dust and aid compaction and will be bladed and otherwise maintained as necessary (pages 2-1, 2-4, 2-4.1, 2-5 through 2-9, 4-1, 4-16 and 4-17).

Compliance

The operator is in compliance with this section.

Stipulations

None.

535. Spoil

535.100 Disposal of Excess Spoil

Excess spoil will be disposed of in the waste rock pile in 10-foot thick lifts. The outslopes of the waste rock pile will have a slope of 1v:2h, which will result in a static safety factor for the pile of at least 1.5. The operator has included in the PAP a geotechnical investigation of both the permit area and the engineering designs which was done by a private consulting firm (pages 2-9, 2-10, 2-10.1, 2-10.2, 2-11, 2-12, 2-12.1, 2-12.2, 2-13, 2-14 and 4-3).

Compliance

The operator is in compliance with this section.

Stipulations

None.

536. Coal Mine Waste

Coal mine waste will be placed in the waste rock pile along with spoil and development waste. Coal mine waste will be mixed with other waste, as necessary, in order to maintain a ratio of coal to non-combustible waste material of 50 percent or less. Any acid- or toxic-forming material, as determined by semi-annual sampling of the top of the waste rock pile, will be covered with at least four feet of inert material (pages 2-9, 2-10, 2-10.1, 2-10.2, 2-11, 2-12, 2-12.1, 2-12.2, 2-13, 2-14 and 4-3).

Compliance

The operator is in compliance with this section.

Stipulations

None.

537. Regraded Slopes

The operator will restore the site of the access road to its original contour. The waste rock pile, of course, will constitute a major alteration of the original contour. This is allowed because (1) the pile will not be detrimental to the environment, to public health or safety, or to the approved postmining land use; (2) the stability of the pile is assured by sound design and by a thorough geotechnical investigation; and (3) the surface of the pile will be revegetated and surface runoff controlled (pages 2-3, 2-4, 3-3, 3-4 and 3-4.1).

Compliance

The operator is in compliance with this section.

Stipulations

None.

540. Reclamation Plan

541. General

542. Narratives, Maps and Plans

The PAP includes a reclamation timetable (see pages 3-15 and 3-15.1), final configuration (Maps 4-6 and 4-7), maps and cross sections, and final road reclamation plans and cross sections. Also included in the PAP is a detailed estimate of reclamation costs (pages 3-16 to 3-24).

Compliance

The operator is in compliance with this section.

Stipulations

None.

550. Reclamation Design Criteria and Plans

551. Casing and Sealing of Underground Openings

Not applicable.

552. Permanent Features

Not applicable.

553. Backfilling and Grading

The operator is committed to grade and backfill all disturbed areas so as to (1) achieve the approximate original contour; (2) achieve a postmining slope with a long term static safety factor of at least 1.3 and prevent slides; (3) minimize erosion and water pollution; and (4) support the approved postmining land use (pages 3-3, 3-4 and 3-4.1).

Compliance

The operator is in compliance with this section.

Stipulations

None.