



MAJOR FACILITY SITING ACT CERTIFICATE AMENDMENT FOR IMPLEMENTING DRY DISPOSAL TECHNOLOGY AT COLSTRIP UNITS 3 & 4

On May 23, 2016, the Department of Environmental Quality (DEQ) received a request from Talen Montana, LLC, (Talen) to amend the Certificate of Environmental Compatibility and Public Need (Certificate of Compliance) for the Colstrip Steam Electric Station (Colstrip), located in Rosebud County, Montana. The Certificate of Compliance was issued in 1976 under the Major Facility Siting Act (MFSA), Section 75-20-101, *et seq.*, MCA.

The proposed amendment would allow Talen, the operator of the Colstrip Steam Electric Station, to implement dry disposal technology for the disposal of coal ash from Colstrip Units 3 & 4.

Current Disposal of Coal Ash

Talen's disposal of coal ash at Colstrip is governed by Finding of Fact No. XXXI from the Board of Natural Resources and Conservation and the Board of Health and Environmental Sciences, issued on November 21, 1975 (adopted in the Board of Natural Resources and Conservation's Findings of Fact, Opinion, Decision, Order and Recommendations, which was issued on July 22, 1976). Finding of Fact No. XXXI provides as follows:

Much of the waste matter from the four units, such as ash from the scrubber and boiler systems, suspended solids, sediment, and other matter, will be disposed of by using water to convey them to their eventual destinations, the disposal ponds. In some instances the wastes will be further processed and clean water will be returned into the system in order to reduce the amount of water used. Waste ash from various systems and some other waste will be first sluiced to temporary retention ponds located in a 40-acre area just south of the plants. These wastes will eventually be moved to the ultimate disposal ponds by slurry pipeline. The first two permanent disposal areas developed will be located approximately 10,000 feet northwest from the plants in Sections 20, 21, 28 and 29, Township 2 North, Range 41 East. During the life of Units 3 and 4, it will be necessary to develop further disposal ponds to be located in Sections 5, 6, 7 and 8, Township 1 North, Range 42 East. After these ponds are filled with waste, they will be dried up, covered with dirt and reclaimed; the first permanent retention pond will contain a surface acreage of approximately 112 acres and it, like all the other retention ponds, will be sealed, using normal construction methods. The first permanent retention pond will have a useful life of approximately six years if the pond is utilized for all four units. Its useful life will be approximately 12 years in the event that it is utilized for the wastes from Units 1 and 2

only. (Labrie, 20-2625-2628, 21-2731--2733; Grimm 12-1701-1712; Berube, 22-2831-2838, 2860- 2861, 45-6474-6475, 6527-6530; (Applicants' Ex. 501A, 51.) (A-32)

In accordance with Finding of Fact No. XXXI, byproducts from the Units 3 and 4 flue gas scrubbers are currently slurried by pipeline to the Units 3 and 4 Effluent Holding Pond. The Units 3 and 4 Effluent Holding Pond is located approximately 5 miles southeast of Colstrip. The slurry is partially dewatered in the paste plant, located within the perimeter of the Units 3 and 4 Effluent Holding Pond towards its center between Cells C and J. An aerial photograph depicting the paste plant within the perimeter of the Units 3 and 4 Effluent Holding Pond is attached hereto.

At the paste plant, the slurry is dewatered to approximately 35 % moisture (from about 88% moisture) using paste technology. The resulting "paste," which actually maintains the characteristic of a liquid, is disposed of in the Units 3 and 4 Effluent Holding Pond, where the remaining liquid is evaporated.

Proposed Amendment

Talen is requesting the following modification of Finding of Fact No. XXXI. Proposed new language is underlined and language proposed to be deleted is ~~stricken~~.

Much of the waste matter from the four units, such as ash from the scrubber and boiler systems, suspended solids, sediment, and other matter, will be disposed of by using water to convey them to their eventual destinations, the disposal ponds. In some instances the wastes will be further processed and clean water will be returned into the system in order to reduce the amount of water used. Such further processing may occur before or after the material is sent to the disposal ponds. If such further processing results in "non-liquid" material (as defined in 40 CFR 258.28(c)(1)) being placed in a landfill-like manner within the perimeter of the disposal ponds, then any potential air emissions issues associated with this material will be considered as part of the facility's Title V Operating Permit. Waste ash from various systems and some other waste will be first sluiced to temporary retention ponds located in a 40-acre area just south of the plants. ~~These wastes~~ Wastes from the scrubber system will eventually be moved to the ultimate disposal ponds by slurry pipeline. The first two permanent disposal areas developed will be located approximately 10,000 feet northwest from the plant in Sections 20, 21, 28, and 29, Township 2 North, Range 42 East. During the life of Units 3 and 4, it will be necessary to develop further disposal ponds to be located in Sections 5, 6, 7 and 8, Township 1 North, Range 42 East. After these ponds are filled with waste, they will be dried up, covered with dirt and reclaimed; ~~the first permanent retention pond will contain a surface acreage of approximately 112 acres and it, like all the other retention ponds, will be sealed, using normal construction methods. The first permanent retention pond will have a useful life of approximately six years; if the pond is utilized for all four units. Its useful life will be approximately 12 years in the event that it is utilized for the wastes from Units 1 and 2 only.~~ (Labrie, 20-2625-2628, 21-2731--2733; Grimm 12-1701-1712; Berube, 22-2831-2838, 2860- 2861, 45-6474-6475, 6527-6530; (Applicants' Ex. 501A, 51.) (A-32), 2016 "Dry Disposal" Amendment.

Under the proposed modification to Finding of Fact No. XXXI, byproducts from the Units 3 and 4 flue gas scrubbers would still be slurried by pipeline to the Units 3 and 4 Effluent Holding Pond. Talen would employ dry disposal technology located adjacent to the existing paste plant and within the perimeter of the Units 3 and 4 Effluent Holding Pond to further reduce the moisture of the waste matter. Dry disposal technology works by using filtration, vacuum, or other dewatering techniques to reduce the moisture of the paste plant material. The moisture in the paste plant material will be reduced by about an additional 15%, from approximately 35% down to about 20%. The target moisture is similar to that of moist soil.

After processing by the dry disposal technology, Talen would handle the dewatered slurry in a landfill-like manner. The material will be placed within the perimeter of the Units 3 and 4 Effluent Holding Pond using conveyors, trucks, or other conveying mechanisms and contoured and compacted as necessary to accomplish compliance with all regulations.

DECISION

1. Is an amendment to Talen's Certificate of Compliance required under ARM 17.20.1801

As a threshold matter, DEQ must determine whether an amendment to Talen's Certificate of Compliance is required. The changes or additions to a facility or an associated facility that require an amendment to a certificate of compliance are set forth in ARM 17.20.1801, which provides as follows:

NOTIFICATION OF PROPOSED CHANGE OR ADDITION TO A FACILITY OR ASSOCIATED FACILITY FOR WHICH A CERTIFICATE HAS BEEN GRANTED.

If a certificate holder desires to change or add to a facility or associated facility for which a certificate has been granted, the certificate holder shall file a notice for a certificate amendment with the department by certified mail or personal delivery. Changes or additions subject to these requirements include the following:

- (1) any change in location or design or any addition to a facility or an associated facility that could reasonably be expected to result in a material increase in any environmental impact;
- (2) any change in location or design or any addition to a facility or an associated facility that could reasonably be expected to result in impacts to new geographic areas or human, animal or plant populations that were not evaluated prior to the issuance of the certificate;
- (3) any change in or addition to a facility or an associated facility affecting compliance with a condition of the certificate; and
- (4) any change in or addition to a facility or associated facility that would materially change the basis of any finding required by subchapter 16.

Talen is requesting a modification to the Certificate of Compliance to allow Talen the latitude to use dry disposal technology in the disposal of coal ash generated by Colstrip Units 3 and 4. If Talen elects to convert to the dry disposal of coal ash, compliance with Finding of Fact No. XXXI would be affected. As indicated above, Finding of Fact XXXI authorizes Talen to slurry coal ash waste to the Units 3 and 4 Effluent Holding Pond for final disposal. Prior to being

disposed of in the pond, the slurry is processed at a paste plant located within the perimeter of the Units 3 and 4 Effluent Holding Pond. At the paste plant, the slurry is dewatered from approximately 88% moisture to approximately 35% moisture. As contemplated by Finding of Fact XXXI, the coal ash waste is then disposed of as a nonsolid material in the Units 3 and 4 Effluent Holding Pond.

Talen is requesting the latitude to potentially use a dry disposal technology to dispose of coal ash generated by Colstrip Units 3 and 4. The coal ash would still be slurried to the paste plant located within the perimeter of the Units 3 and 4 Effluent Holding Pond, where the slurry would still be dewatered to approximately 35% moisture. If dry disposal technology is implemented, however, the material generated by the paste plant would be further dewatered to about 20% moisture. The moisture level of the material would be that of moist soil and would satisfy the definition of a "non-liquid" material set forth in 40 CFR 258.28(c)(1). This material would be placed within the perimeter of the Units 3 & 4 Effluent Holding Pond in a landfill-like manner, using conveyors, trucks or other conveying mechanisms. Thus, if Talen implements a dry disposal technology, the coal ash would not be disposed of as a slurry and would not be disposed of in a pond as contemplated by Finding of Fact No. XXXI of the Certificate of Compliance. Rather, the slurry would be processed to a "non-liquid" state and would be landfilled within the perimeter of the Units 3 and 4 Effluent Holding Pond. Because the potential conversion to a dry disposal technology would affect Talen's compliance with Finding of Fact No. XXXI, an amendment to Talen's Certificate of Compliance is required under ARM 17.20.1801

2. DEQ's decision on the proposed amendment

DEQ's decision criteria for an amendment application is set forth in Section 75-20-219, MCA, which provides in relevant part as follows:

Amendments to certificate. (1) Within 30 days after notice of an amendment to a certificate is given as set forth in 75-20-213(1), including notice to all active parties to the original proceeding, the department shall determine whether the proposed change in the facility would result in a material increase in any environmental impact of the facility or a substantial change in the location of all or a portion of the facility as set forth in the certificate. If the department determines that the proposed change would result in a material increase in any environmental impact of the facility or a substantial change in the location of all or a portion of the facility, the department shall grant, deny, or modify the amendment with conditions as it considers appropriate.

(2) In those cases in which the department determines that the proposed change in the facility would not result in a material increase in any environmental impact or would not be a substantial change in the location of all or a portion of the facility, the department shall automatically grant the amendment either as applied for or upon the terms or conditions that the department considers appropriate.

Material Increase in any Environmental Impact. The change in the Colstrip facility proposed by Talen would not result in a material increase in any environmental impact. The addition of dry disposal technology is only an enhanced way of handling the current byproducts of the Colstrip scrubbing process. This technology does not change the amount or chemical

characteristics of the material transported and disposed in the Units 3 and 4 Effluent Holding Pond. The dry disposal technology would decrease the amount of liquid contained in the material to be disposed. All of the liquid that will be extracted from the coal ash slurry by the dry disposal technology will be sent to the clearwell section of the Units 3 & 4 Effluent Holding Pond from which it will be sent back to the scrubbers for re-use. The clearwell has a synthetic liner with leachate collection.

Because less liquid would be ultimately disposed in the Units 3 and 4 Effluent Holding Pond, the dry disposal technology would reduce the potential for pond seepage. Due to the potential reduction in seepage from the Units 3 and 4 Effluent Holding Pond, the dry disposal technology should aid in the protection of the ground water in the area.

The dry disposal technology doesn't eliminate all of the moisture in the material. The material will either be conveyed or trucked to its final disposal location within the perimeter of the pond and then compacted. The moisture content of the material after dry disposal technology and the compaction of the material will control fugitive dust emissions. Moreover, the process ponds are already identified as potential emitting units in Talen's Title V air quality permit, requiring Talen to have a dust monitoring and control program in place. The dry disposal technology and conveyors, if used to landfill the material, will be powered by electricity. If vehicles are used to landfill the material, the vehicles will be equipped with emission control devices required by the Environmental Protection Agency.

There will be no noise increase because dry disposal technology is a quieter technology than the paste plant and evaporators that are already operating at the Units 3 and 4 Effluent Holding Pond. The process equipment associated with the dry disposal technology will not be a significant visual addition to the paste plant or other structures and features currently in the pond area. Although the ponds are located in general sage grouse habitat, the pond area for Units 3 & 4 is completely built out and conversion to dry stacking would not increase impacts on sage grouse. As indicated below, conversion may reduce or eliminate a need for additional wells that could impact sage grouse. Finally, conversion to dry disposal technology would not require a change in the final reclamation practices applicable to the Units 3 and 4 Effluent Holding Pond.

Substantial Change in the Location of All or a Portion of the Facility. The change in the Colstrip facility proposed by Talen would not result in a substantial change in the location of any part of the facility. The byproducts of the Colstrip scrubbing process would continue to be slurried to the paste plant using the existing slurry facilities. The slurry would continue to be dewatered at the paste plant to approximately 35% moisture. As depicted on the attached map, the paste plant is located towards the center of the pond between Cells C and J. The material will then be processed by dry disposal technology for further dewatering to approximately 20% moisture. The dry disposal technology will be immediately adjacent to the paste plant, well within the perimeter of the Units 3 and 4 Effluent Holding Pond. Because the dry disposal technology will be co-located with the paste plant toward the center of the Units 3 and 4 Effluent Holding Pond, the addition of the dry disposal technology does not constitute a substantial change in the location of all or a portion of the facility. Finally, the dewatered material, which will have a final moisture level comparable to that of moist soil, will be landfilled throughout the existing footprint of the Units 3 and 4 Effluent Holding Pond. The addition of dry disposal technology will not change the location or size of the Units 3 and 4 Effluent Holding Pond. Nor

will the addition of dry disposal technology change the location of any groundwater capture or monitoring wells that have been installed around the Units 3 and 4 Effluent Holding Pond. To the extent that dry disposal technology may reduce the potential for pond seepage, dry disposal technology may reduce the potential need to install additional ground water capture or monitoring wells to address seepage from the Units 3 and 4 Effluent Holding Pond.

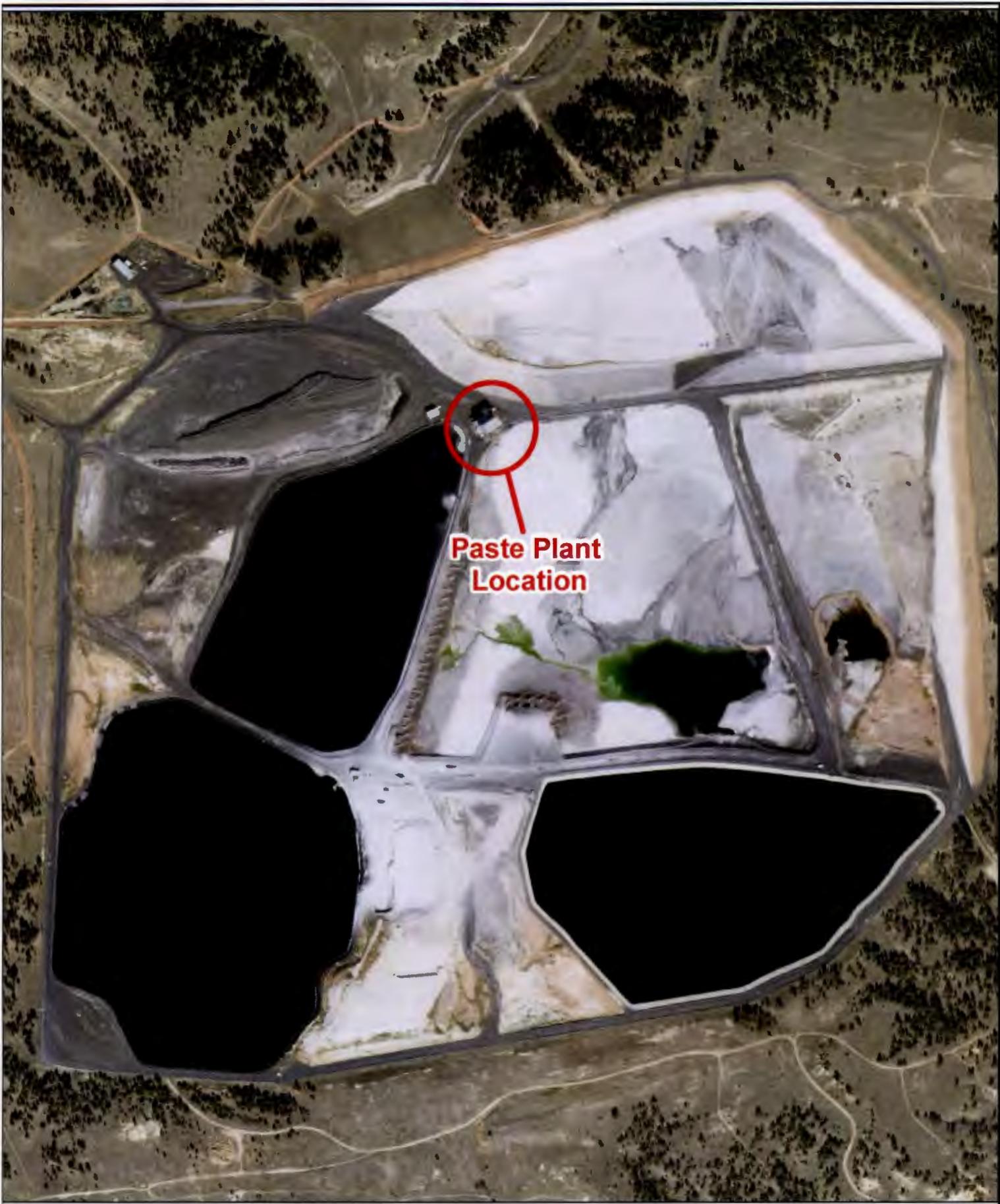
Indeed, as can be inferred from the above discussion, the addition of dry disposal technology will not result in any new impacts to undisturbed lands at Colstrip. Byproducts from the Colstrip scrubbing process will be slurried to the Units 3 and 4 Effluent Holding Pond using the existing conveyance facilities. The slurry will be dewatered at the existing paste plant and the dry disposal technology facility located immediately adjacent to the paste plant, toward the center and well within the perimeter of the Units 3 and 4 Effluent Holding Pond. The dewatered material will be landfilled within the existing footprint of the Units 3 and 4 Effluent Holding Pond. The pond will not be increased in size. The addition of dry disposal technology will not result in any changes to the existing ground water capture and monitoring well network that has been constructed to address seepage from the Units 3 and 4 Effluent Holding Pond. The addition of dry disposal technology may reduce the potential need to construct additional ground water capture or monitoring wells to address the seepage.

Because the amendment proposed by Talen to facilitate the possible conversion to dry disposal technology would not result in a material increase in any environmental impact and would not be a substantial change in the location of all or a portion of the facility, DEQ automatically grants the amendment as applied for pursuant to Section 75-20-219(2), MCA.

Approved by:

Warren D. McCullough
Warren D. McCullough, Chief
Hard Rock Mining Bureau

6/20/14
Date



**Paste Plant
Location**

Talen Energy's
Units 3 & 4 EHP

