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# State of Utah

DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

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December 17, 1992

TO: Pamela Grubaugh-Littig, Permit Supervisor

FROM: Jess Kelley, Reclamation Engineer *JK*

RE: Second Technical Deficiency Review of Permit Application Package, Sunnyside Cogeneration Associates, Sunnyside Refuse Pile, PRO/007/035, Folder #2, Carbon County, Utah

## SYNOPSIS

The writer has reviewed for technical adequacy the applicant's response to the Division's technical deficiency document of November 25, 1992. This memorandum contains the writer's comments and the deficiencies which are yet found in the Permit Application Package for this site.

## ANALYSIS

The writer has found the following technical deficiencies in the Permit Application Package for this site. Each deficiency is preceded by the applicable R645 regulation, which is in boldface print.

- 212.100** Plate 5-12 is mentioned on page 500-2 of the PAP, but no such plate exists.
- 512.140** Maps 7-2, 7-3, 7-5, 7-8c, 7-9, 7-9b, 7-11a, 7-11b and 7-12a all lack current certification by a qualified, registered, professional engineer or land surveyor.
- 512.150** Maps 6-1, 6-2, 6-4, 6-5 and 6-6 lack current certification by a qualified, registered, professional engineer or land surveyor.
- 513.200** The last line of page 500-4 says that all ponds other than the East and West Slurry Cells qualify as MSHA ponds. This is not correct.

**521.170** Plates 5-2a and 5-2b do not correctly depict the haul road. These plates should either be corrected or eliminated from the PAP, since they do not convey vital information.

**521.170** Plate 5-7 shows 2 access roads when only 1 is planned. This same plate also shows the Pasture Sediment Pond in the wrong location.

**521.124** There is uncertainty in the plan as to both the location and the configuration of the coarse refuse pile. On Plate 10-1, the refuse pile is divided into 2 areas: Area 1 is located on the west slope of the west embankment of the West Slurry Cell, and Area 2 is located on a point to the south of the West Slurry Cell. Plate 9-1a shows the refuse pile as a single facility which is located to the south of the West Slurry Cell.

**521.143** Appendix 9-2, 'Noncombustible Material Disposal Design,' is really just a slope stability analysis and nothing more. As mentioned below, refuse disposal requires more design work.

**540** In general, the reclamation plan is confused and impossible to follow. The confusion results, it would appear, from the failure of the applicant to understand that the plan must provide for 2 completely different reclamation scenarios: first, the worst case and, second, final reclamation according to the anticipated schedule. The worst case would occur if the site were abandoned and had to be reclaimed in essentially its present configuration. The other case is simply the final reclamation of the site after the full anticipated life of the operation. A separate, stand-on-its-own reclamation plan and reclamation cost estimate must be done for each scenario if the reclamation plan is to make any sense.

The reclamation plan also fails to take into account the fact that reclamation is done, by regulation, in 3 phases (see R645-301-880.300). The necessary sediment ponds are retained during the first phase. During the second phase, however, the ponds are removed and the drainage control scheme may change completely.

The following are more specific comments related to the reclamation plan.

- 542** Plate 5-15 is mentioned on page 1 of Appendix 8-1, but is not found anywhere in the PAP.
- 542.800** From Plate 8-1, the writer determined the areas of the West and East Slurry Cells to be, respectively, 34 acres and 3 acres. Since these areas are composed of coal refuse, and since the reclamation cost estimate must assume the worst case for reclamation, the reclamation cost estimate must anticipate that both areas be covered with at least 4 feet of suitable material (see 553.250). This changes the quantity in item 2 of Figure 8-1, 'Proposal for Bond Amount,' from 251,196 cubic yards to 161,656 cubic yards, and the quantity in item 4 of the same figure from 129,067 cubic yards to 367,840 cubic yards.
- 542.800** There is a small arithmetic error in item 8 of Figure 8-1, 'Proposal for Bond Amount.' The total cost should be \$4538 instead of the present \$4243.
- 542.800** A contingency cost of 10% of the total reclamation costs must be added to the total bond amount shown in Figure 8-1. This contingency is a standard which the Division requires of all reclamation cost estimates.
- 542.800** The total reclamation cost must be escalated over a period of 5 years by an annual escalation factor of 1.27% in order to obtain the total bond amount. The 1.27% factor is the Means cost escalation factor for 1992.
- 542.800** According to the John T. Boyd report, which makes up Chapter 9, 'Mining Plan,' noncombustible waste makes up about 5% of the total pile, or 460,000 tons (see page 3-5). Using the density of 3375 pounds per cubic yard given on page 3-6, this works out to be about 273,000 cubic yards of material--a considerable quantity! There is no demonstration in the PAP that this amount of material will even fit into the refuse disposal facility shown on Plate 9-1a. If, in fact, this amount of material were placed in the approximately 8.55 acres of the refuse disposal facility, it would have to be almost 20 feet deep. And this does not include the required 4 feet of cover material. Obviously, the disposal of this refuse material requires some more design work.

**542.800** No haul distances are incorporated into the reclamation cost estimate. Some of the haul distances for borrow material are fairly long (about 1800 feet) and could constitute a considerable addition to the total reclamation cost.

**542.800** How much borrow material will come from each borrow area? Is there enough in the present plan? It appears that nearly 670,000 cubic yards of material will be needed. If this quantity is divided up evenly among the present borrow areas, it requires that all areas be excavated to a depth of almost 11 feet.

**542.800** There is no substantiation in the PAP of the volumes of the topsoil stockpiles.

**542.800** There is no substantiation in the PAP of the volumes of the sediment ponds. This makes the quantity of 97,430 cubic yards shown in item 7 of Figure 8-1 impossible to verify.

**542.800** There is a discrepancy in the PAP regarding the acreage of the Reclamation Borrow Area. The acreage is shown as 30.14 acres on page 200-3 and as 22.0 acres in Table 8-1.

**542.800** There is a discrepancy in the PAP regarding the acreage of the disturbed area. Page 400-2 puts the disturbed acreage at 175 acres, while page 800-1 puts it at 202 acres.

**542.800** The PAP contains no provision for removal and storage of the 24 inches of material which now covers portions of the embankments of the East and West Slurry Cells. This material is mentioned at the bottom of Table 8-1.

#### RECOMMENDATIONS

It is recommended that the applicant correct the above deficiencies before the Permit Application can be approved.