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Mr. Mike Utley, Esq., PE
Intermountain Power Service Corporation (IPSC)
850 West Brush Wellman Road
Delta, UT 84624

Cc: Emily Shilling and Ashley Peck (Holland & Hart)

Re: 2018 CCR Compliance, Unstable Areas Evaluation, IPSC Landfill Facility, near Delta, Utah

Dear Mr. Utley,

INTRODUCTION

This document presents an engineering evaluation of coal combustion residual (CCR) landfill facilities at the Intermountain Power Plant (IPP), near Delta, Utah. More specifically, this evaluation is made for the Combustion By-Product Landfill, relative to the "Location Restrictions" requirements of Section 257.64 ("Unstable Areas") of the Code of Federal Regulations (CFR) Title 40 "Protection of Environment", Part 257 "Criteria for Classification of Solid Waste Disposal Facilities and Practices," Subpart D "Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments." Section 257.64(a) provides that an existing CCR landfill must not be located in an unstable area unless the owner or operator demonstrates that the CCR landfill has been designed to ensure that the integrity of the structural components of the CCR landfill will not be disrupted

The Intermountain Power Plant is owned by Intermountain Power Agency (IPA) and operated by Intermountain Power Service Corporation (IPSC). The Combustion By-Products Landfill, located in the north portion of the facility was initially commissioned in 1986. We understand that the major sources of materials placed in the landfill include dewatered blowdown from the scrubbers mixed with fly ash from the baghouse, and settled-out solids from both the Bottom Ash Basin and Waste Water Basin. The landfill consists of approximately 271 acres within a nearly square footprint. It is surrounded by the "Ash Truck Haul Road." The landfill is informally divided into seven sections running north-south, each being approximately 480 feet wide. Sections are numbered 1 through 7, starting from east to west. The landfill area has been unevenly utilized, with a majority of the landfilled CCR material located in Sections 1 through 4, reaching a height of approximately 40 to 60 feet above the surrounding (original) grade. Side slopes of the landfill vary from approximately 1.3H:1V along the active west face to approximately 4 to 5H:1V along the non-active (but not closed) south, east, and north faces.

The CCR rule defines an "Unstable Area" as a "location that is susceptible to natural or human-induced events or forces capable of impairing the integrity, including structural

components of some or all of the CCR unit that are responsible for preventing releases from such unit. Unstable areas can include poor foundation conditions, areas susceptible to mass movements, and karst terrains." Factors typically considered when determining whether an area is unstable or not include: "(1) on-site or local soil conditions that may result in significant differential settling; (2) on-site or local geologic or geomorphologic features; and (3) on-site or local human-made features or events (both surface and subsurface)" 40 CFR 257.53. In our professional opinion, this definition requires an assessment of the site conditions relevant to the design and placement of the landfill, and we have conducted our evaluation accordingly.

EVALUATION

Conditions which could potentially constitute an unstable area relative to the Combustion By-Products Landfill include weak, soft, collapsible, or expansive soils, present in such manner as to cause excessive settlement or shear (bearing capacity) failure of the foundation soil beneath the landfill. Other potential conditions include mass movement such as landslides, debris slides and falls, and rock falls; erosion due to scour; natural and human activities such as cutting, inadequately engineered filling, underground mining, and subsidence due to groundwater extraction; the presence of karst terrain; and active volcanism.

Based on our review of the results of previous geotechnical/geologic assessments (which include geotechnical study reports from original design of the IPP facility as well as our CCR-related studies performed in 2013 and 2016) together with our previous site visits and overall experience in the general area, we are of the opinion that the above described conditions do not affect the site, relevant to the design and operation of the landfill. We therefore conclude, pursuant to 40 CFR 257.64(a), that the Combustion By-Products Landfill is not located in an Unstable Area.

In evaluating the landfill relative to the provisions of Section 257.64 Unstable Areas, we note that seismic issues such as potential ground shaking and ground rupture are not explicitly included in the CCR Rule definition of Unstable Area. Such issues are addressed in other sections of Part 257 (Sections 257.62 (Fault Areas) and 257.63 (Seismic Impact Zones)), but these two sections only apply to new CCR landfills, existing and new CCR surface impoundments, and lateral expansions of (i.e., new) CCR units. Although Section 257.64 does not directly identify seismic issues, we have nonetheless conducted an evaluation of seismic-related issues as presented in the following paragraph.

With respect to potential seismic issues, there are mapped faults of undetermined activity within the IPP site. The closest distance from a mapped fault to the landfill facility (toe of fill) is more than 1,400 feet. At this distance, it is our professional opinion that ground rupture will not adversely affect the landfill. Relative to other potential issues such as liquefaction and attendant effects, it is our opinion that the landfill is not susceptible to such. Given the subsurface conditions, together with the relative flat slopes (4 to 5H:1V) along the non-active faces (and containment inherent within the landfill area near the active face) as well as the

natural cementation of the CCR material once placed, we are of the opinion that seismic stability is sufficient to prevent releases from the unit.

SUMMARY

In summary, it is our professional opinion that the Combustion By-Product Landfill is not located within an Unstable Area. In making this conclusion, we have assessed site conditions in the context of the design and anticipated performance of the landfill. We are of the opinion that the integrity of structural components of the CCR unit will not be disrupted as a result of the phenomena evaluated.

CLOSURE AND LIMITATIONS

The assessments and recommendations presented in this document are based on limited field studies and laboratory testing performed by both ourselves and others, as well as our understanding of the project's design, manner of construction, operation, and maintenance. If conditions are found later that are different from those described, we should be notified immediately so that we can make revisions as necessary.

This document was prepared solely for the use of the addressee (our Client) and may not contain sufficient information for other parties or uses.

We represent that our services are performed within the limitations prescribed by our Client, in a manner consistent with the level of care and skill ordinarily exercised by other professional consultants under similar circumstances. No other representation, expressed or implied, and no warranty or guarantee is included or intended. We do not assume responsibility for the accuracy of information provided by others.

Respectfully submitted,
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