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October 21, 2003

BY HAND DELIVERY

Mark Langer, Clerk of the Court
United States Court of Appeals for the
District of Columbia Circuit
E. Barrett Prettyman U.S. Courthouse
333 Constitution Avenue, N.W.
Washington, D.C. 20001-2866

Re: *Nevada v. Nuclear Regulatory Commission*, Case Nos. 02-1116 and 03-1058 (consolidated under lead Case No. 01-1258)

Dear Mr. Langer,

In the course of reviewing the final briefs filed by the Petitioners in the above-referenced matter, Petitioners recently discovered a small number of minor errors in the citations in Petitioners' Final Opening Brief to the Joint Appendix and the Supplemental Appendix. Petitioners have therefore prepared, and respectfully submit, the attached errata sheet correcting these errors.

Petitioners have also discovered that the page submitted as Page 3 of the Joint Appendix is not the page to which Petitioners intended to cite at Page 22, line 3 of Petitioners' Final Opening Brief. Rather, Plaintiffs intended to cite to a different page (not reproduced in the Joint Appendix) from the same document. Petitioners therefore attach the correct pages, as new Pages 268-70 of the Joint Appendix.

Please feel free to contact me should you have any questions.

Sincerely,

Vincent J. Colatriano

Vincent J. Colatriano

Enclosures

cc (w/enclosures, by facsimile and mail):

Joseph R. Egan, Esq.
Ronald M. Spritzer, Esq. and John A. Bryson, Esq.
Michael A. Bauser, Esq.
James Bradford Ramsay, Esq.
John F. Cordes, Esq. and Steven F. Crockett, Esq.
Jean V. MacHarg, Esq.
Geoffrey Fettus, Esq.

Nevada v. Nuclear Regulatory Commission, No. 02-1116, *et al.*

Petitioners' Final Opening Brief – Errata

Page of Brief	Line	Correction
22	20	Change "JA-3" to "JA-269"
23	10	Change "SuppApp-46" to "SuppApp-45"
33	4	Change "*Id.*" to "JA-27-28"
35	2	Change "SuppApp-54" to "JA-54"
51	footnote 15, line 16	Change "(SuppApp-29-34)" to "(SuppApp-502-21)"

The staff also notes that in proceeding from the proposed rule to the final rule the performance objectives have been stated with significantly more flexibility. The staff recognizes that a limit on the rate at which wastes can be released will depend on such factors as the nature of the waste, the properties of the geologic setting, and the uncertainties associated with all aspects of geologic disposal. Proper consideration of such factors must be a part of any requirement on release rates from the engineered barrier system.

Geologic Setting Groundwater Travel Time Requirement

Impact of Travel Time Requirement on Performance

Figures 15 and 16 also show the effect of groundwater travel time on the fraction of cases whose results fail to comply with the assumed standard for basalt and bedded salt. In each figure, groundwater travel times of several hundred years are required to reduce the fraction of cases which fail to 0.10 or less, without simultaneously requiring excessively low release rates from the underground facility. It is also seen that groundwater travel times approaching 10,000 years are needed to reach the region where rapid release rates from the engineered barrier system such as 1 part in 5,000 per year and faster can be tolerated. (This is intuitively reasonable since the model assesses repository performance over a 10,000 year interval and a 10,000 year groundwater travel time would prevent radionuclides from reaching the accessible environment during that time.)

It has already been demonstrated that a release rate from the underground facility of 1 part in 100,000 per year is appropriate, and a nominal groundwater travel time requirement should be consistent with it. Such a value could lie between several hundred and several thousand years for basalt and bedded salt, and a value of 1,000 years, in conjunction with reasonably achievable leach rates, can significantly increase confidence that the assumed EPA standard will be met.

The staff again notes that performance objectives have been stated with significantly more flexibility in the final rule than in the proposed rule. The staff recognizes that a minimal groundwater travel time will depend on such factors as the age and nature of the waste, the design of the engineered system, the properties of the geologic setting, and the uncertainties associated with all aspects of geologic disposal. Proper consideration of such factors must be a part of any minimal groundwater travel time requirement.

Engineered Barrier System Containment Time Requirement

Impact of Containment Time on Performance

The impact of a containment interval on repository performance is discussed from a different perspective than criteria on release rates from the engineered barrier system or groundwater travel time. Use of a long lived package to achieve containment is a means to compensate for, and to an extent avoid, uncertainties in the prediction of rates of release and migration of the individual radionuclides, particularly during the critical period when the hazard of the wastes is greatest and the heat generation rates are the highest. These uncertainties have been discussed in Chapter V, but for convenience, they are briefly reviewed below.

Temperature is one of the principal factors in calculating what the source term to the geologic setting is. During the initial period the uncertainties in predicting release rates for long times are very great. Even if we did understand the mechanisms completely, the data scatter increases with temperature so that test programs to gather the data to narrow the uncertainties to reasonable bounds are very cumbersome (Ref.7-18).

Additional uncertainties due to thermal effects influence radionuclide transport following release. Thermally induced convection near the underground facility may occur and may transport radionuclides in unanticipated ways. Thermomechanical effects may create pathways for groundwater to travel through the host rock in the disturbed zone. By containing the wastes until the repository temperatures have peaked and are spatially relatively uniform, much of the uncertainty associated with these effects can be avoided.