ENERGY*SOLUTIONS*

July 16, 2007 CD07-0231

Mr. James R. Park, Project Manager
Environmental Protection and Performance Assessment Directorate
Division of Waste Management and Environmental Protection
Office of Federal and State Materials and Environmental Management Programs
Mail Stop T8F5
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Re: Response to Request for Additional Information Concerning Modifications to NRC Order Exempting Energy*Solutions* From 10 CFR 70 Licensing Requirements

Dear Mr. Parks:

On June 14, 2007, Energy*Solutions* received a letter from the U.S. Nuclear Regulatory Commission requesting additional information concerning the above referenced modification to the Clive Facility SNM Exemption. The requested additional information is summarized below.

1. "Explain how the nuclear criticality safety evaluations (NCSEs) submitted by EnergySolutions (ES) are applicable to waste disposal and burial operations at the Clive facility.

   The NCSEs provided by ES are specific to operations at the former K-25 gaseous diffusion facility in Oak Ridge, Tennessee, and burial at a waste facility (the EMWMF) Oak Ridge, Tennessee. ES has provided no discussion about ES's operations or double contingency protection at its Clive, Utah facility."

2. "Explain how NCSEs for the K-25 facility can be used to demonstrate the safety basis for acceptance of waste packages from K-25 into the Clive Bulk Waste Facility (BWF), if the mass limitations (and other requirements specified in the NCSEs) are not used.

   The K-25 NCSE's have requirements required for double contingency protection that will not be used at ES. For example, the NCSE for burial at Oak Ridge, has mass limitations on waste packages (NCSE-ET-K25-1600 R1 08-07-06 PWP, "Burial of K-25 and K-27 Process Equipment and Building Debris at the EMWMF,"). In contrast, the exemption request from ES seeks to remove mass limitations instituted by the existing NRC Order, and thus, will not be using any mass limitations. Previous studies sponsored by the NRC have already shown that soluble uranium could be a criticality safety

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issue, if there are sufficient quantities, which is why Condition 4 of the Order was required."

3. "Explain how the study of polyurethane foam provided by ES demonstrates that foam encapsulation will prevent water intrusion into components with water soluble uranium.

   Polyurethane foam is planned for encapsulation of K-25 components with water soluble uranium. In support of this request, ES provided the document ANL-06/32, "Study on Degradation of a Commercial Rigid Polyurethane Foam Use for Filling of Process Gas Equipment (PGE) and Pipes and Corrosion Behavior of Pipes at K-25/K-27." For the purposes of the study, some foam (and not the foam with the components) was essentially buried to determine whether it would degrade under those conditions. No analyses were provided to show that the foam will keep water out of the K-25 components, if the foam did not perfectly adhere to the components. Provide an analysis that shows that the foam will stay affixed to what it is protecting to prevent water intrusion."

4. "Explain how the K-25 NCSEs provide an adequate double contingency analysis.

   The K-25 NCSEs do not have any contingencies for failure of the polyurethane foam. Explain how the NCSEs provide an adequate double contingency analysis without these contingencies being addressed."

Energy*Solutions* has decided to perform its own site-specific analyses to respond to the U.S. Nuclear Regulatory Commission questions; therefore, none of the NCSEs information from the Department of Energy or its contractors will be used. The U.S. Nuclear Regulatory Commission can expect this report by September 15, 2007.

Please call me at 1-801-649-2000 with any questions.

Sincerely,

Tye Rogers,
Senior Vice President of Regulatory Affairs

Cc: Mr. Scott C. Flanders, NRC
Mr. Dane L. Finerfrock, Director, Utah Division of Radiation Control