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# EnergySolutions' Statement to the Nuclear Regulatory Commission on Reprocessing and the Disposition of Used Nuclear Fuel

EnergySolutions has the experience and capabilities to handle, store, reprocess and dispose of used nuclear fuel (UNF). We are very keen to continue to take an active part in the Blue Ribbon Commission's (BRC) recommended path forward, including the setting up of one or more Consolidated Storage Facilities for UNF in the USA, and also the pursuit of UNF reprocessing.

We are currently contracted with DOE to carry out several studies related to the BRC recommendations, including producing design concepts for one or two CSFs, and the development of standardized transportation, aging and disposal canisters for UNF. We strongly support the setting up of one or more CSFs in the USA and the progressive movement of UNF from the shutdown and operating reactor sites to these CSFs. Our CSF design concepts study first looked at UNF transportation issues from both shutdown and operational sites, the need for repackaging some UNF prior to transport, the difficulties with transport access to certain shutdown sites, the lead time to acquire suitable cask and railroad cars, and the licensing requirements for all equipment and transport methods. It went on to identify, cost and compare 6 options, covering one or two CSFs, differing UNF receipt rates, UNF pickup orders, operational start dates and geological repository operational dates. These scenarios were illustrative only at this stage but the model we developed enables all possible options to be compared and provides the basis for production of a full conceptual design.

EnergySolutions supports the reprocessing of UNF in the USA because it (i) minimizes the volume of high level waste (HLW) that ultimately will require geologic disposal, (ii) provides a vitrified HL Waste form that is more robust than irradiated nuclear fuel assemblies that were not originally designed for long term storage, and (iii) enables the removal from the HLW of long-lived heat emitting transuranics such as americium so that these can be separately destroyed. During the Global Nuclear Energy Partnership (GNEP) period we produced a conceptual design, technology roadmap and business plan for a UNF reprocessing facility capable of reprocessing 1500 MT of UNF per year and future expansion up to 3000 MT/year. During that period we actively engaged with the NRC on its gap analysis of the regulatory framework for analyzing a reprocessing facility. We support the continuation of that process and ultimately a rulemaking for the creation of a Part 7X. At the end of the GNEP period our conceptual design provided all that was required for an immediate move into the detailed design process.

We believe there are significant synergies between a CSF and a reprocessing facility. Each requires a receipt facility and temporary storage for the UNF, a hot cell or pool facility for the removal of UNF from canisters so that it can be reprocessed or re-packaged for repository storage, and an R&D facility. Establishing a CSF and a reprocessing plant on the same site would allow economies to be realized by the common use of these facilities. Such a combined site would also potentially be more attractive than a standalone CSF to a prospective host community because of the much larger range of high quality jobs that it would offer. This could help the identification of volunteer communities for such a site, as recommended by the BRC. EnergySolutions is actively engaged with potential host communities for a CSF and we believe that the CSF will ultimately be tied to a Reprocessing Plant, an R&D facility and, potentially also the Geologic Repository.

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