DUKE COGEMA
STONE & WEBSTER

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U.S. Nuclear Regulatory Commission
Washington, DC 20555

08 January 2003
DCS-NRC-000124

Subject: Docket Number 070-03098
Duke Cogema Stone & Webster
Mixed Oxide Fuel Fabrication Facility
Criticality Validation Report – Revision 2 of Part I, Revision 1 of Part II and Original Issue of Part III

Reference: P. S. Hastings (DCS) letter to NRC Document Control Desk, DCS-NRC-000071, dated 11 December 2001, *Duke Cogema Stone & Webster Mixed Oxide Fuel Fabrication Facility Criticality Validation Report – Criticality Validation Report – Revision 1 of Part I and Original Issue of Part II*

This letter transmits the latest versions of Parts I, II, and III of the Criticality Validation Report for the Mixed Oxide Fuel Fabrication Facility. The referenced letter transmitted Revision 1 of Part I as well as the original issue of Part II.

The Criticality Validation Report documents the validation of the nuclear criticality safety codes to be used in the design of the MFFF, and are being transmitted at this time to provide justification for selection of administrative margin for construction authorization.

Part I validates Areas of Applicability (AOAs) related to AOA(1), Pu-nitrate aqueous solutions, and AOA(2), MOX pellets, fuel rods, and fuel assemblies. The enclosed revision addresses an issue related to non-normality of the benchmark results by performing non parametric analysis of AOA(1), and corrects a number of editorial and typographical errors.

Part II covers AOA(3), PuO_2 powders, and AOA(4), MOX powders. As mentioned in the referenced letter, the enclosed revision provides discussion of additional experiments using Oak Ridge National Laboratory (ORNL) sensitivity and uncertainty analysis and corrects a number of typographical and editorial errors.

The original issue of Parts III covers AOA(5), PuO_2 powder-polystyrene mixtures and Pu nitrate.

As stated in the original transmittal of Part I, the MOX Standard Review Plan states that the validation report should be maintained at DCS' facility, the implication being that, should the NRC Staff wish to review it, the review would take place at DCS' facility. However, DCS

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presumes that the Staff's review of the validation report will be facilitated by making the report available directly. DCS considers the attached Criticality Validation Report to be a technical report that backs up conclusions in the Construction Authorization Request (CAR) submitted to the NRC on 31 October 2002. DCS does not consider it to be part of the CAR.

DCS requests NRC review and comment on these reports, and will be prepared to discuss its conclusions at your convenience. If you have any questions, please feel free to contact me at (704) 373-7820.

Sincerely,

Peter S. Hastings, P.E.
Licensing Manager

Enclosures: as stated

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