CMU Wall Evaluation of the FMO, FMOX, and DCP Buildings

Prepared for Global Nuclear Fuels - America

by

Atkins Energy

Atkins-TR-GNF-16-02

Revision 0

October 2016

Dr. Frank Hand, PE

Brandon Jones

Revision Log

Rev	Date	Revision Description
0	10-31-2016	Original issue.

Table of Contents

List of Figures

List of Tables

1.0 PURPOSE, SCOPE, AND LIMITATIONS

1.1 Purpose

This report was prepared to support Global Nuclear Fuels – America (GNF-A and GNF) Wilmington, North Carolina Facility management in its response to Nuclear Regulatory Commission (NRC) requests concerning the seismic performance of the concrete masonry unit (CMU) walls in the FMO, FMOX, and DCP facilities.

1.2 Scope

The scope of work reported herein follows the general approach identified in NRC NUREG-1520 (Ref. 1) in addressing natural hazard risk assessments for nuclear fuel fabrication facilities and the application of DOE-STD-1020 (Ref. 2) for specifics regarding the seismic structural analysis. Following DOE-STD-1020 guidance, the FMO, FMOX, and DCP structures were designated as "essential" facilities and evaluated in accordance with the International Building Code (IBC) (Ref. 3). As a result of the facility designation, the CMU walls are also designated as "essential" and evaluated in accordance with the IBC. The report presents the results of the seismic evaluation of the CMU walls in the FMO, FMOX, and DCP Buildings.

1.3 Limitations

The results reported represent a seismic evaluation of existing CMU walls, not an analysis of new CMU walls. The significant difference is that the existing CMU walls are evaluated against current codes, and it is assumed *a priori* that the CMU walls may not "pass" every code check. If this was a new design, the CMU walls would be required to "pass" all code checks, and the design would be changed accordingly. In the present evaluation case, the desired result is to identify which CMU walls "pass" the code check, and for those that do not pass to identify their stress state and to assess whether those CMU walls can still perform their original intended functions.

[[

Pages 2 – 41 REDACTED

]]