PROPERTY OF
LIBRARY
TESTING HOUSE ELECTRIC CORP.
ASTRONUCLEAR LABORATORY
PITTSBURGH, PA.

WANL-TMI-1901

INFORMATION CATEGORY

Unclassified
E. Watjen 4/16/68
Authorized Classifier --- Date

From: Engineering Mechanics

Date: April 17, 1968

Subject: Tensile Strength of
GEM and GED Coated
Fuel Elements

RECEIVED

ASTRONUCLEAR LABORATORY

APR 18 1968

TO: C. L. Meuche, Manager
Engineering Mechanics

ASTRONUCLEAR LAB
LIBRARY

cc: S. A. Aducci	J. S. Karbowski	W. G. Roman
A. Bournia	R. F. Lampe	W. J. Rowan
J. A. Burgess	E. L. Layland	R. H. Singleton
G. W. Ellenburg	J. J. Lescisin	P. A. Stancampiano
M. J. Ettenson	H. S. McCreary	F. R. Spurrier
J. W. Fisch	J. L. McKee	J. A. Swanson
L. L. France	D. F. Miller	F. G. Tauch
J. G. Gallagher	M. J. Manjoine	D. C. Thompson
J. E. Johnson	A. M. Poindexter	E. A. Watjen
I. E. Kanter	F. D. Retallick	B. C. Wells
C. A. Andersson	K. L. Rieke	P. H. Wilks

Tension tests were performed on ten-inch long sections of GEM and GED coated elements at room temperature in a short bundling test fixture. A description of the test fixture and its operation can be found in WANL-TME-1555 and WANL-TMI-1707.

The GEM coated elements failed at strains slightly in excess of 2000 micro-strain; the GED coated elements did not fail at strains of 4000 microstrain. The results are tabulated in Table I.

Testing was not continued beyond the 4000 microstrain level. In an attempt to apply higher axial loads on the bundling elements, which in turn would impose greater strain on the specimen, several of the bundling elements failed; and the test was stopped.

MASTER

E. L. Brickman
E. L. Brickman
Core Components & Thermal Experiments

/m

NOTICE
This report was prepared as an account of work sponsored by the United States Government. Neither the United States nor the United States Energy Research and Development Administration, nor any of their employees, nor any of their contractors, subcontractors, or their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness or usefulness of any information, apparatus, product or process disclosed, or represents that its use would not infringe privately owned rights.

DISTRIBUTION OF THIS DOCUMENT UNLIMITED

DISCLAIMER

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency Thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

DISCLAIMER

Portions of this document may be illegible in electronic image products. Images are produced from the best available original document.

WNL-TIT-1901

TABLE I

Element Serial Number	Location (Station)	Coating	Ultimate Strain (Micro-Inch/Inch)
525-10-57132	15 - 25	GEM	2140
525-10-57241	$21\frac{1}{2}$ - $31\frac{1}{2}$	GEM	2100
525-10-57069	$21\frac{1}{2}$ - $31\frac{1}{2}$	GEM	2400
525-10-57057	15 - 25	GEM	2070
525-10-57247	$17\frac{1}{2}$ - $27\frac{1}{2}$	GED	4105 *
525-10-57191	$17\frac{1}{2}$ - $27\frac{1}{2}$	GED	4230 *
525-10-57090	$17\frac{1}{2}$ - $27\frac{1}{2}$	GED	4120 *
525-10-57148	$17\frac{1}{2}$ - $27\frac{1}{2}$	GED	**

* Maximum strain obtained - specimen did not fail.

**Clustering elements failed attempting to impose higher axial loads. Specimen not tested.