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PRELIMINARY TEST SPECIFICATION FOR
AN ORGANIC MATERIALS IRRADIATION TEST
TO BE CONDUCTED AT THE PLUM BROOK REACTOR
(37/W301).

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Prepared By:
H. O. Blinn

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Approved By:

J. R. Coombe
J. R. Coombe, Supervisor
Radiation Test Program

S. S. Stein
S. S. Stein, Manager
Radiation Effects Programs

F. R. Lorenz per Ed
F. R. Lorenz, Manager
Materials Development

INFORMATION CATEGORY

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J. Coombe 4/28/65

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Westinghouse Electric Corporation
Astronuclear Laboratory
Pittsburgh, Pennsylvania

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I. Experiment Identification

A. Test Plan Reference Number	37/W301
B. Sponsor	WANL
C. Testing Agency	PBRF
D. Test Date	July, 1965

 II. Purpose of the Experiment

To obtain characteristics of irradiated organic sealants and cements for use in the NERVA reactor. Eight coated specimens and eight cemented tensile specimens as specified below will be irradiated.

Orifice Specimens

<u>Quantity</u>	<u>Sealant</u>	<u>Description</u>
2	AFR-151	PBI-Derivative
2	RTV-891	Silicone Rubber
2	RK-692	Polyimide Resin
2	R-5071	Silicone Resin

Cemented Tensile Specimens

<u>Quantity</u>	<u>Cement</u>	<u>Description</u>
4	P-514	Cured
4	P-514	Carbonized

 III. Drawings

A. Test Items	Figure 1
B. Test Fixture	Figure 2
C. Dosimeters	WANL Dwg. 387D519, Rev. D

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H. Integrated Exposures

Neutron Fast	Not applicable
Neutron (Thermal)	Not applicable
Gamma Dose	3.0×10^{11} ergs/gm(C)

I. Fluid Environment

Test Specimens	Helium - 3% hydrogen gas
Test Fixture	Water

J. Duration 5.57 hours at the rate specified by V-G above.

VI. Analytical

To be provided in final test specifications.

VII. Facility Requirements

A. Electrical	None
B. Pneumatic	Helium gas doped with 3% hydrogen
C. Hydraulic	HT-1 primary water

VIII. Dosimetry

Two neutron dosimeters will be mounted on the test fixture. The dosimeters will be as shown in WANL Dwg. 387D519, Revision D.

IX. Data Handling Requirements

A. None

X. Test Procedure

- A. The temperature will be observed during irradiation and controlled with charging machine by changing capsule position.
- B. The flow of helium/hydrogen gas for the specimen environment will be regulated during the test.

XI. Hazards

The hazards evaluation will be included in the design manual and hazards report which will be issued prior to the test.

XII. Data Reduction Required

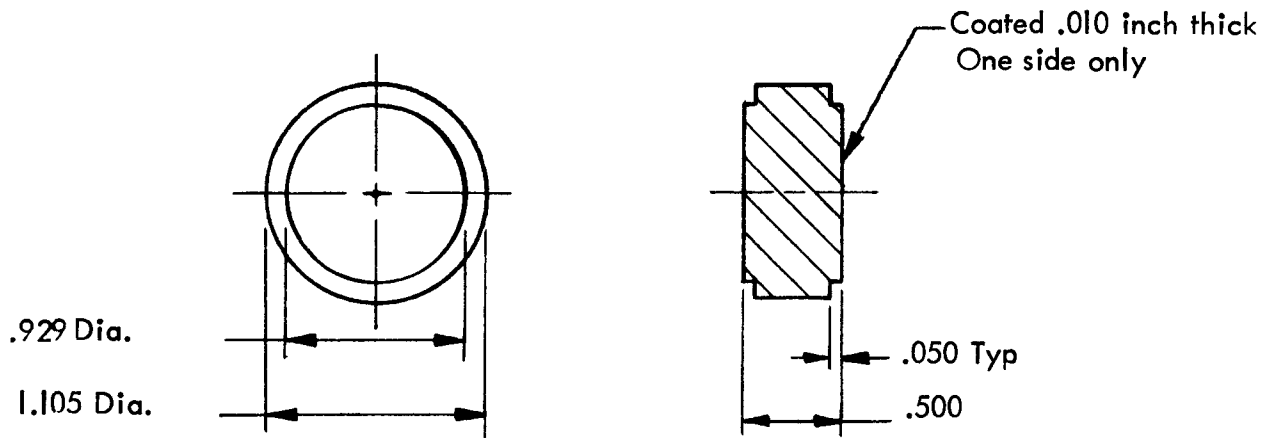
None

XIII. Disposition of Hardware

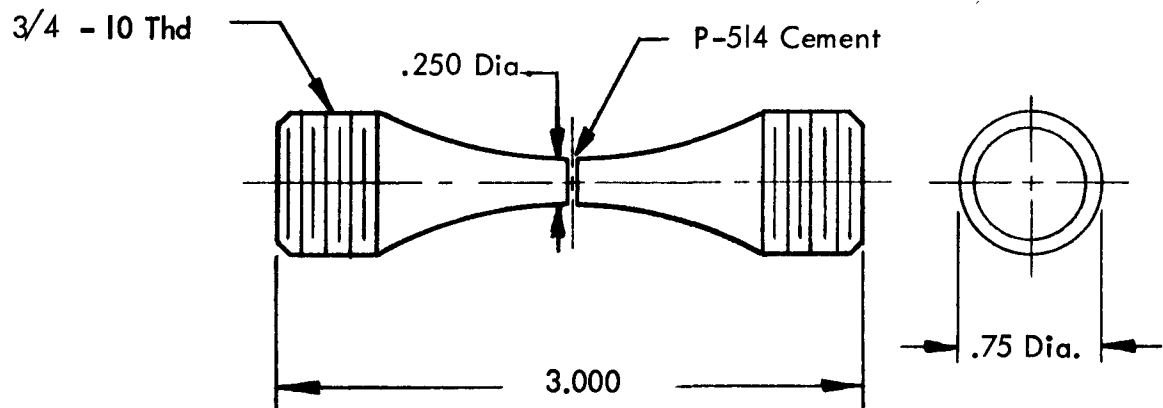
Remove specimens and ship to WANL Materials Department for evaluation.

XIV. Shipping and Receiving Instructions

The test fixture including the test specimens will be shipped to E. Llewellyn, PBRF.



ORGANIC COATED ORIFICE SPECIMEN



CEMENTED TENSILE SPECIMEN

FIGURE I

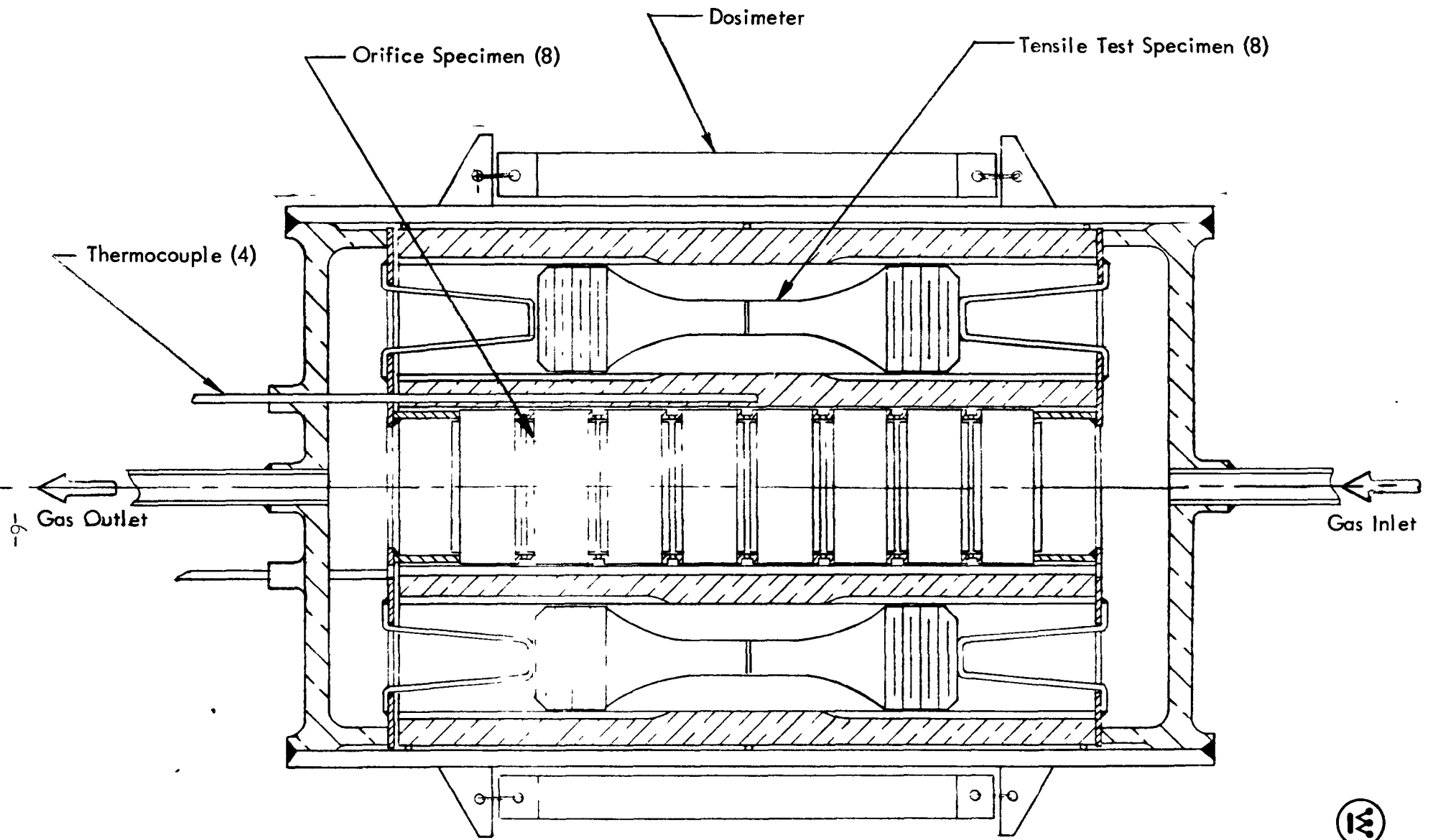


Figure 2. Test Fixture

