

Sequoyah Fuel Assembly Inspection Program

Contributors:

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The inspection work was conducted at Sequoyah by an NSD crew. Jim Kisak, PPE contract engineer, supervised the crew. Various PPE engineers were responsible for the reduction and verification of individual portions of the inspection program. Their signatures on this document attest that (1) they have independently verified the sections assigned to them; and (2) they concur with the results documented herein. A listing of the individual data reduction and verification assignments is given below:

	<u>Inspection Program Section</u>	<u>Originating Engineer</u>	<u>Verifying Engineer</u>
1.0	Background & Objectives	D. Colburn	J. Halligan
2.0	Full Length RCCA Drag Tests	D. Davis	D. Colburn
3.0	Guide Thimble Plug Gage Exams	J. Halligan	D. Colburn
4.0	Summary	D. Colburn	D. Davis

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1.0 Background and Objectives

A RCCA insertion anomaly was experienced at Wolf Creek and South Texas Unit 1. During SCRAMs, several RCCAs failed to fully insert. Both plants conducted drop tests after the anomaly, and additional RCCAs did not fully insert. A subsequent inspection program a, b, c

The following tests were conducted during the inspection program:

- (1) RCCA Drag Tests;
- (2) Guide Thimble Plug Gage Exams (Single Tube Probe Tests);
- (3) Fuel Assembly Length Measurements; and
- (4) Fuel Rod-to-Nozzle Gap Measurements.

Fuel assembly length measurements and fuel rod-to-nozzle gap measurements were used to determine if the growth of the fuel assemblies and fuel rods was within the anticipated range. Items 3 and 4 will be reported in a separate report when the on-site data is available. Re-measurement is necessary because the adjusted assembly growth values measured during the first campaign are abnormally low.

2.0 Full Length RCCA Drag Tests

Fuel assemblies fabricated for seven (7) different contracts were drag tested in the spent fuel pool. The specific fuel features for each contract are shown below. Fourteen of the twenty-one fuel assemblies that were tested were fabricated with Vantage 5H fuel features.

a, b, c

The drag test results are tabulated in Table 2.1. The Sequoyah dashpot and guide thimble data are shown in Figure 2.1 with data from other plants. The lines in the figure represent

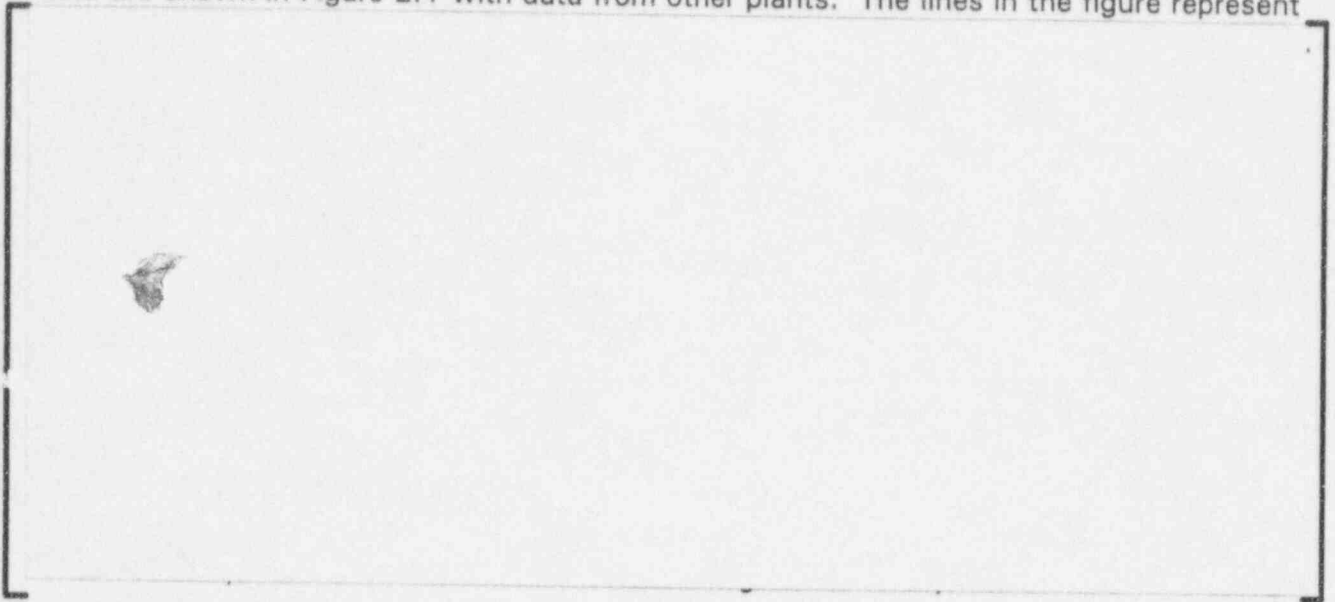
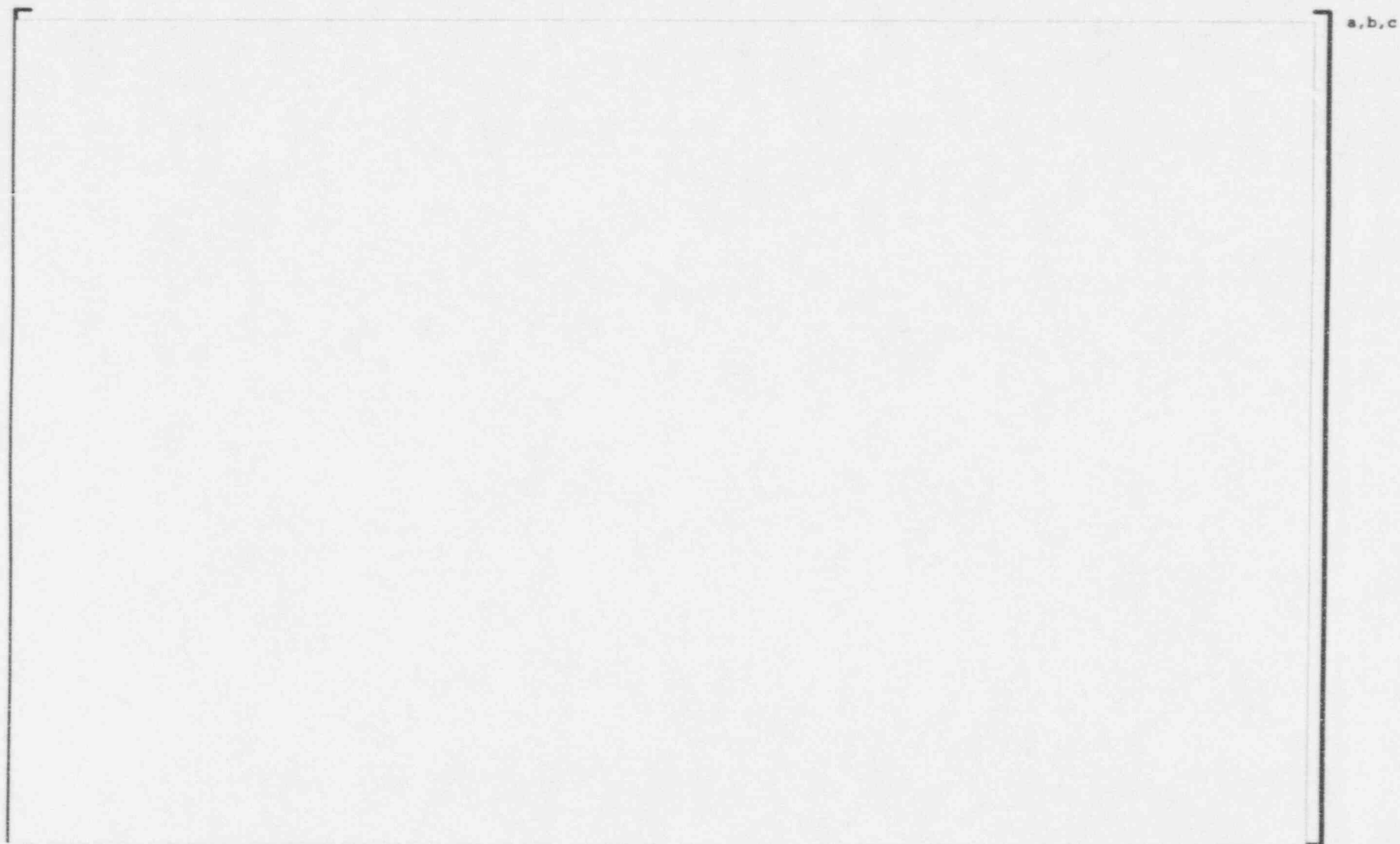


Table 2.1: Sequoyah Drag Test Data

a, b, c

Figure 2.1: Dashpot and Upper Guide Thimble Drag Data



3.0 Single Tube Probe

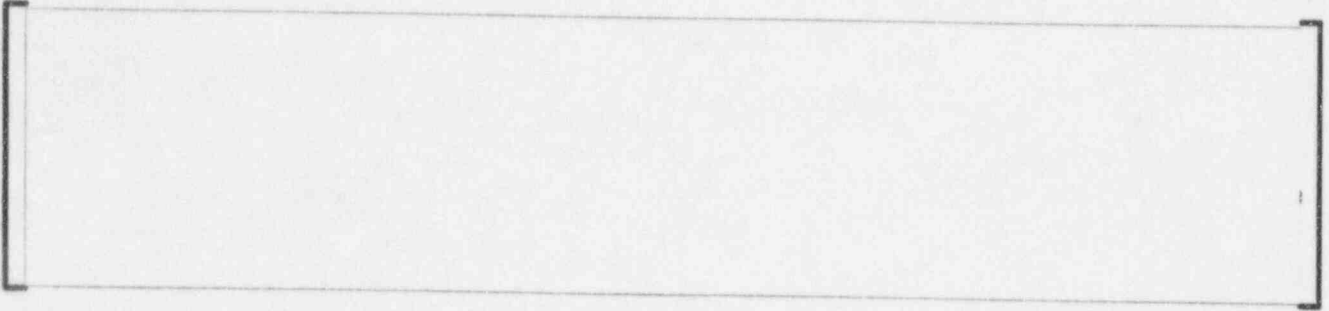
Single tube probing was conducted on three fuel assemblies at Sequoyah Unit 2. The assemblies were selected based on burnup and drag measurements, and are included in the table below. The objective of the test was to determine the extent and location of a, b, c

Single Tube Probe Test Results

a, b, ca, b, c

4.0 Summary

a, b, c



Appendix A

Sequoyah Fuel Assembly Drag Data

Figure A.1: Dashpot Drag and Fast Fluence Data

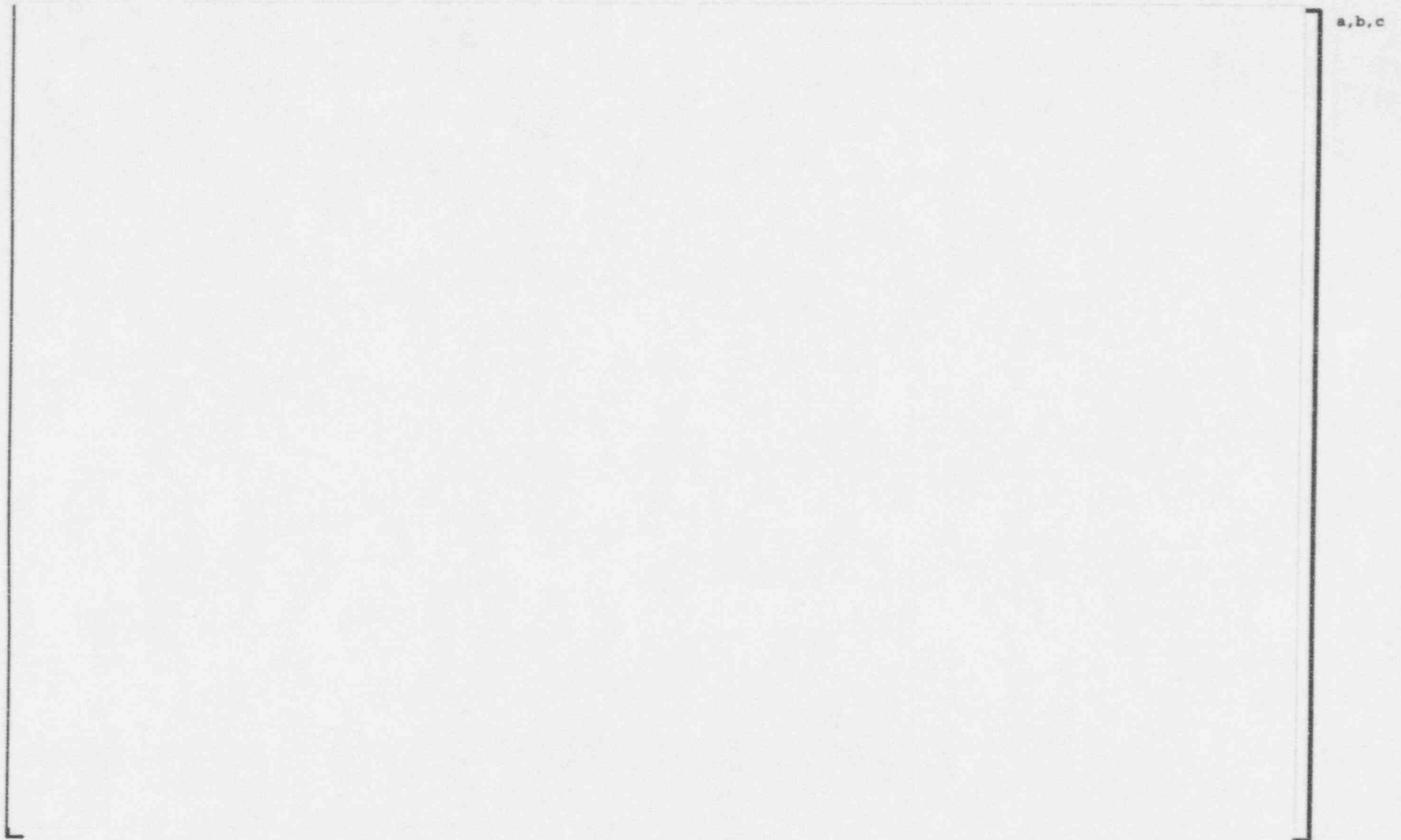


Figure A.2: Upper Guide Thimble Drag and Fast Fluence Data

