

## Diablo Canyon 2 Fuel Assembly Inspection Program

### Contributors:

D. J. Colburn  
D. D. Davis  
J. R. Halligan  
T. R. Freeman  
H. Kunishi

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Inspection work was conducted at Diablo Canyon 2 by an NSD crew under the direction of PPE contract engineer Jim Kisak. Responsibility for the reduction and verification of individual portions of the inspection program was assigned to various PPE engineers. 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 Guide Thimble Plug Gage Exams	D. Colburn	J. Halligan
3.0 F/A Length Measurements	H. Kunishi	T. Freeman
4.0 Fuel Rod Growth Data	H. Kunishi	T. Freeman
5.0 Overall Summary	D. Colburn	D. Davis

### Signatures On File

\_\_\_\_\_  
D. J. Colburn  
Product Performance Engineering

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D. D. Davis  
Product Performance Engineering

\_\_\_\_\_  
H. Kunishi  
Product Performance Engineering

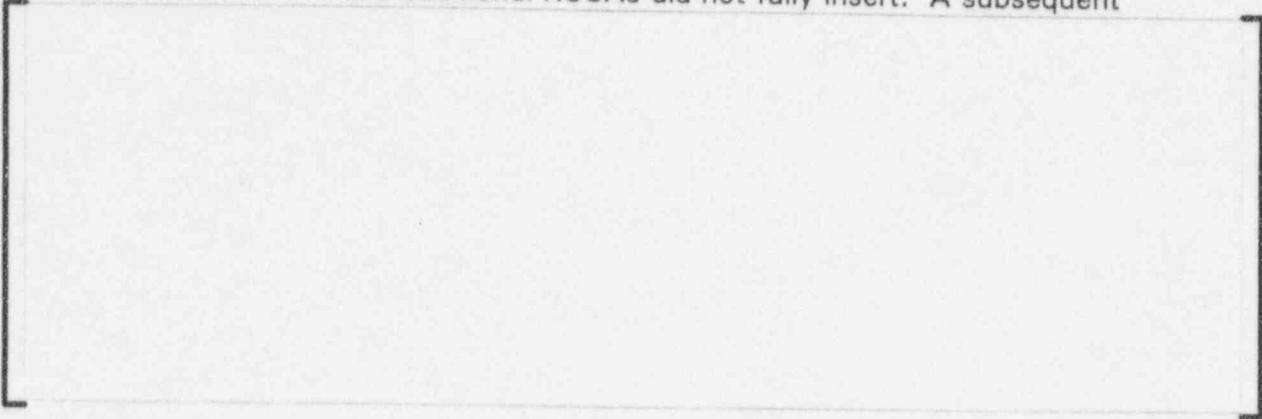
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T. Freeman  
Product Performance Engineering

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J. R. Halligan  
Product Performance Engineering

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PDR TOPRP EMVWEST  
B PDR

## 1.0 Background and Objectives

An RCCA insertion anomaly was experienced at Wolf Creek and South Texas Unit 1. During trips, several RCCAs did not fully insert. Wolf Creek conducted cold drop tests after the event and additional RCCAs did not fully insert. A subsequent a, b, c



The following tests were conducted during the inspection program:

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

Fuel assembly length measurements and fuel rod-to-nozzle gap measurements were needed to determine if the growth of the fuel assemblies and fuel rods was within the anticipated range.

## 2.0 Single Tube Probe

a, b, c



a, b, c

\*\* (MWD/MTU)

### 3.0 Fuel Assembly Growth Data

Fuel assembly length measurements were performed on 16 assemblies (11 assemblies from Region T, 2 assemblies from Region U and 3 assemblies from Region S). The

a, b, c

Figure 3.1: Recent Fuel Assembly Growth Data

a, b, c

#### 4.0 Fuel Rod Growth Data

The axial gaps between the peripheral rods and the assembly nozzles were measured from the low magnification TV tapes of 16 Diablo Canyon 2 assemblies to determine fuel rod growth. The assemblies were S01, S65H, S68H, T13, T14, T15, T21, T23, T27, T35, T39, T41, T78H, T80H, U77H AND U84H.

a, b, c

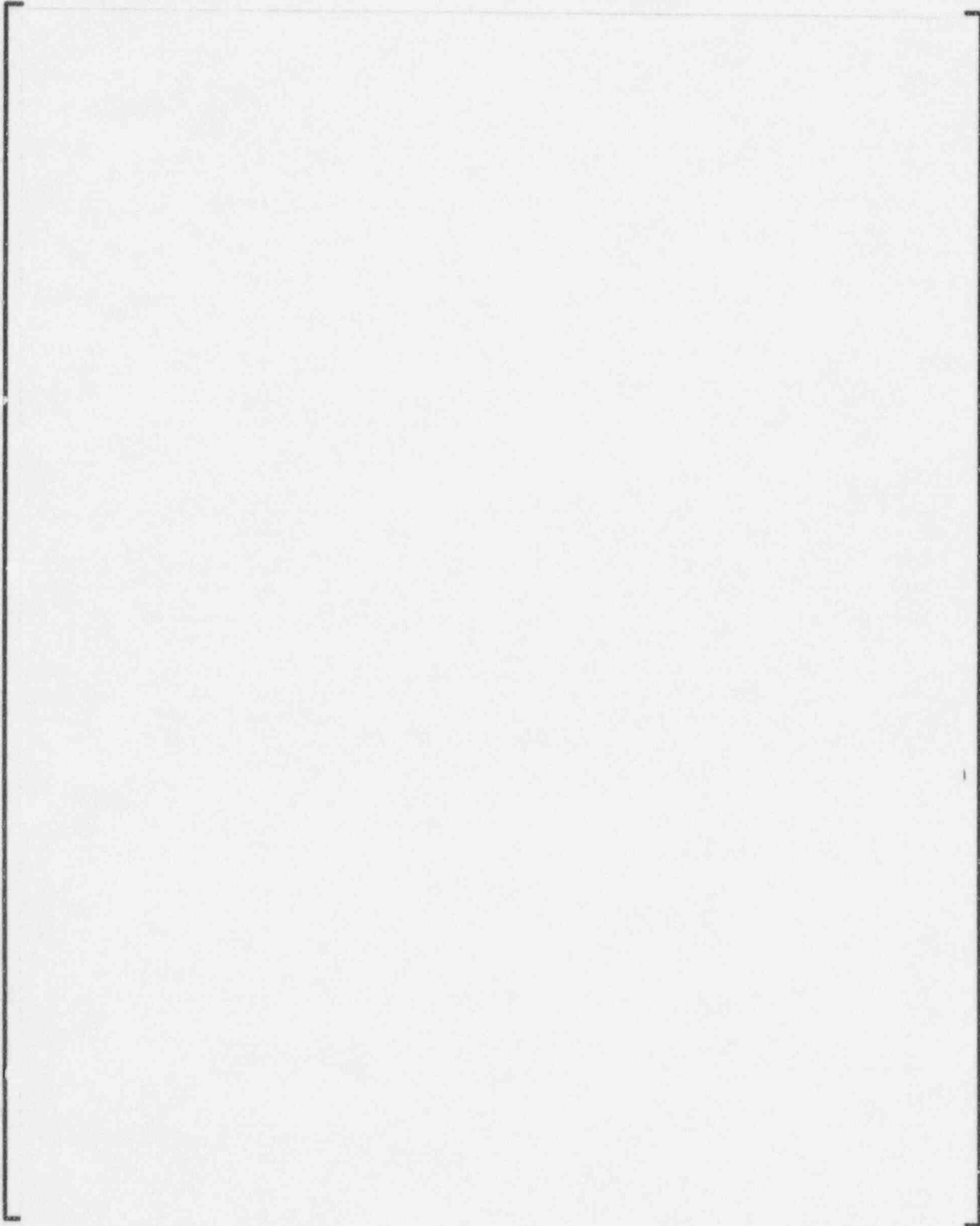


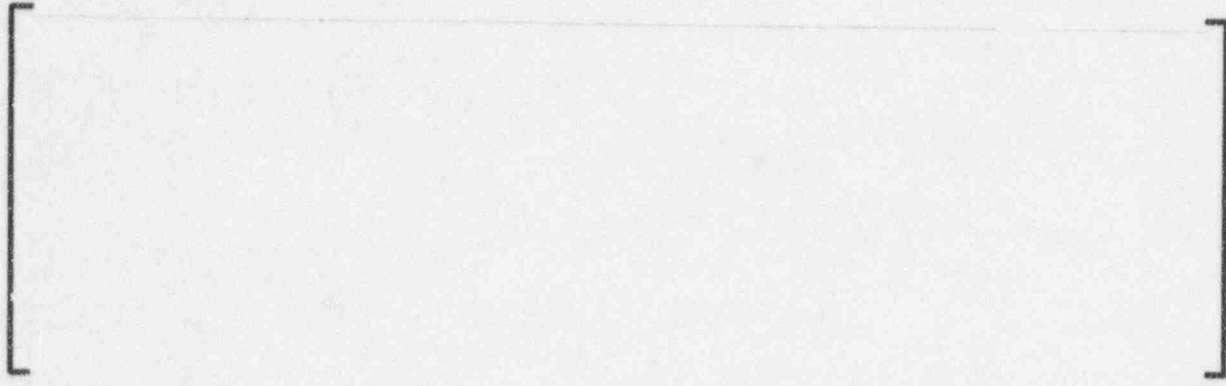


Figure 4.1: Recent Rod Growth Data



## 5.0 Summary

a,b,c



## Appendix A

### Diablo Canyon 2 Assembly Growth Data

a, b, c

**Appendix B**  
**Fuel Rod Growth Data**  
**for**  
**Diablo Canyon 2**



DIABLO CANYON 2

a, b, c

DIABLO CANYON 2

2.2.2

DIABLO CANYON 2

4.5.2

DIABLO CANYON 2

A.D. 2

DIALEO CANYON 2

2 D 2

DIABLO CANYON 2

20

DIABLO CANYON 2

8 C 2

DIABLO CANYON 2

1.0.2



DIABLO CANYON 2

8 2 2

DIABLO CANYON 2

8 2 2

DIABLO CANYON 2

a b c

DIABLO CANYON 2

a b c

DIABLO CANYON 2

8 2 2

DIABLO CANYON 2

S.D.C.

DIABLO CANYON 2

a.b.c

DIABLO CANYON 2

A.D.C.



November 5, 1996

The attached memo NSD-NRC-96-4846 was previously delivered on October 21 by Sumit Ray of Westinghouse Electric Corporation. At that time, only the proprietary version was received by the NRC. Attached is the non-Proprietary version of the Westinghouse preliminary report on Incomplete Rod Cluster Control Assembly (RCCA) Insertion.

Also attached is a page which was inadvertently omitted from the Proprietary version. Ten copies of this page is included to be inserted into the ten copies already sent to the Document Control Room. The placement is noted by the blue tab indicated in the first copy of the non-proprietary version.

Note - attached Proprietary Page  
is to be placed in the  
Proprietary Version delivered  
10/21/96.

TO BE INSERTED IN THE  
PROP VERSION OF THE  
WESTINGHOUSE PRELIM  
REPORT ON ROCA  
INSERTION MEMO -  
NSC NRC-96-4946  
(10/16/96) -  
SEE BLUE TAB IN NUM.  
PROP FOR PLACEMENT