

September 20, 1996

Donald F. Schnell  
Senior Vice President  
Nuclear

U.S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Mail Station P1-137  
Washington, D.C. 20555

Gentlemen:

ULNRC-03447

**DOCKET NUMBER 50-483**

**CALLAWAY PLANT**

**CONTROL ROD INSERTION PROBLEMS**

References: 1) ULNRC-3360, dated April 4, 1996  
2) NRC letter dated September 4, 1996

In response to NRC Bulletin 96-01, "Control Rod Insertion Problems", Union Electric submitted, in Reference 1, its planned control rod testing activities for the Refuel 8 outage at the Callaway Plant. As indicated in Reference 2, the NRC considers Union Electric's testing plan inadequate. However, NRC acknowledges that, with appropriate justification and staff review and approval, certain testing requirements may be relaxed on a plant specific basis.

Union Electric has therefore modified its planned Refuel 8 control rod testing activities to the following:

1. The reactor will be tripped manually at low power to obtain rod drop time information for all RCCAs. (Trace information for recoil assessment will not be obtained.)
2. The Digital Rod Position Indicator will be monitored to assess rod insertion travel.
3. Drag tests will be performed in the reactor vessel for the 13 RCCAs in fuel assemblies with burnups exceeding 30,000 MWD/MTU.

9609240167 960920  
PDR ADDCK 05000483  
G PDR

240009

IE577,

Callaway Plant operates on an 18-month cycle using Westinghouse VANTAGE 5 fuel with intermediate flow mixing grids (V5/IFM). At least 6 plants using similar V5/IFM fuel have participated in the Westinghouse Owners Group effort to identify the root cause of RCCA insertion problems or have conducted testing in response to Bulletin 96-01. All of these plants operate on 18-month cycles with reload batches exceeding 1/3 of the core, and, therefore, have similar power histories. Four of the plants have core outlet temperatures similar to Callaway.

Westinghouse data provided in Figure 1 show that during recent testing at 10 plants, over 1,000 RCCA's in VANTAGE 5/IFM fuel assemblies inserted fully and promptly with no exceptions. Note that 322 RCCA's were tested in fuel assemblies having burnups of 27,500 MWD/MTU or higher.

Westinghouse data presented in Figure 2 shows rod drop time to dashpot vs. burnup for V5/IFM assemblies for six of the ten plants represented in Figure 1. Again, all of the plants for which data is available registered RCCA drop times to dashpot entry well below tech spec requirements. Five of these six plants also reviewed data for recoil. The 514 RCCA's involved inserted into V5/IFM assemblies having burnups ranging from 0 to 55,000 MWD/MTU, and 110 of these assemblies had burnups of 30,000 or higher. Recoil was present on all RCCA's tested. These five plants included two of the four cited earlier which have core outlet temperatures similar to Callaway.

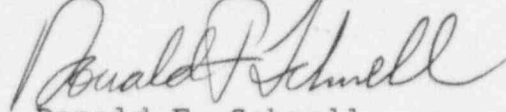
In summary, the industry has accumulated considerable test data and operating experience to demonstrate successful operation of control rods in Westinghouse V5/IFM fuel. No RCCA has failed to insert fully and promptly. Union Electric, therefore, believes testing beyond that proposed herein is unnecessary. Further, we believe that the proposed test program for Callaway Refuel 8 is responsive to the requests in Bulletin 96-01.

If NRC does not find this information persuasive, it should be aware that further testing (i.e., obtaining recoil data for the 13 RCCA's in fuel assemblies having burnups exceeding 30,000 MWD/MTU) will add approximately 11 hours critical path outage time at a cost of \$110,000.

U.S. Nuclear Regulatory Commission  
ULNRC-03447  
Page 3

With our Refuel 8 outage scheduled to commence on October 11 we are anxious to finalize our test plan and request that we receive your response no later than October 1. We are available to discuss this matter as necessary at your convenience.

Very truly yours,



Donald F. Schnell

RJI/plr

FIGURE 1

# Burnup of V5 Assemblies With IFMs Under RCCAs

Data From 10 Plants

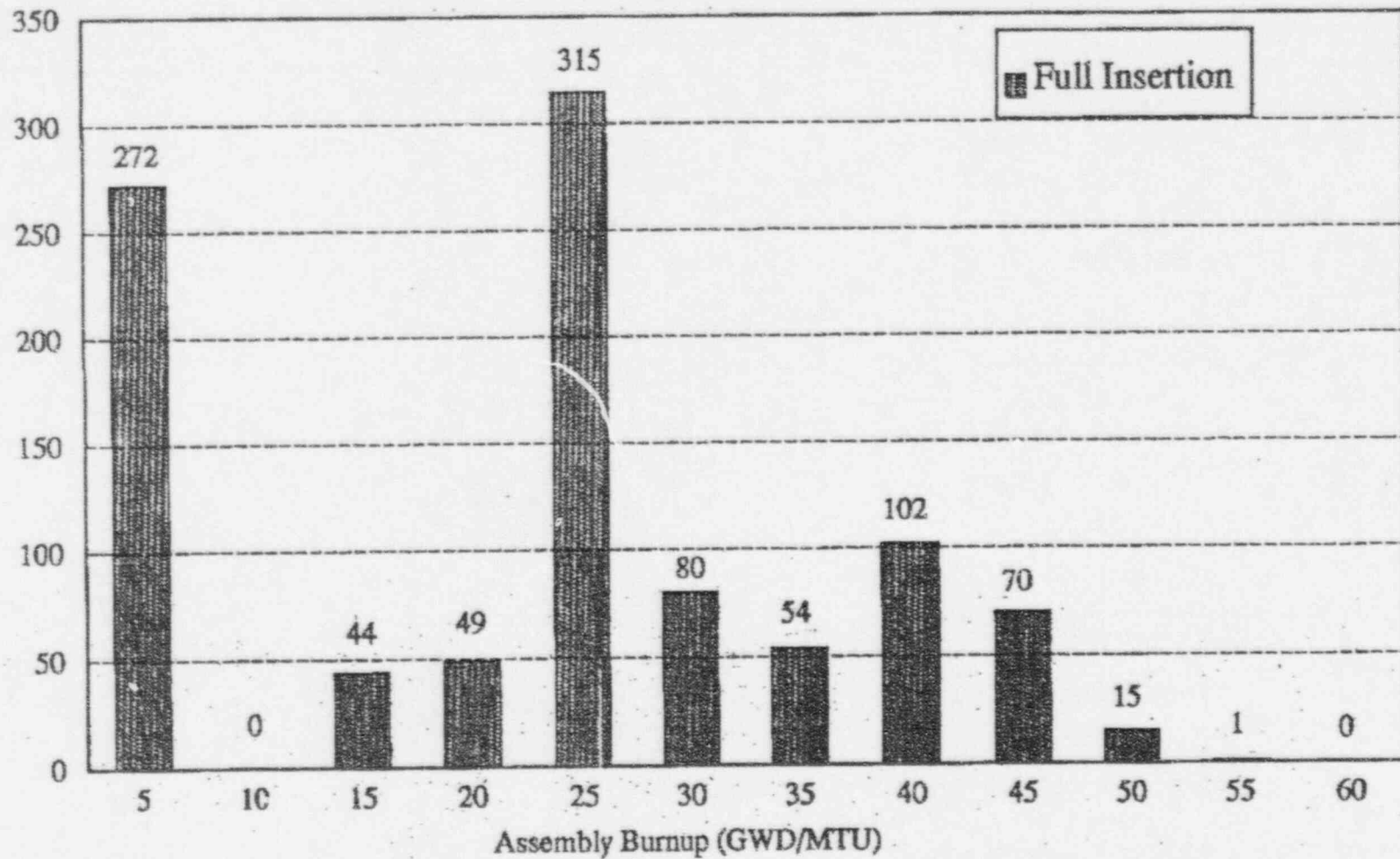
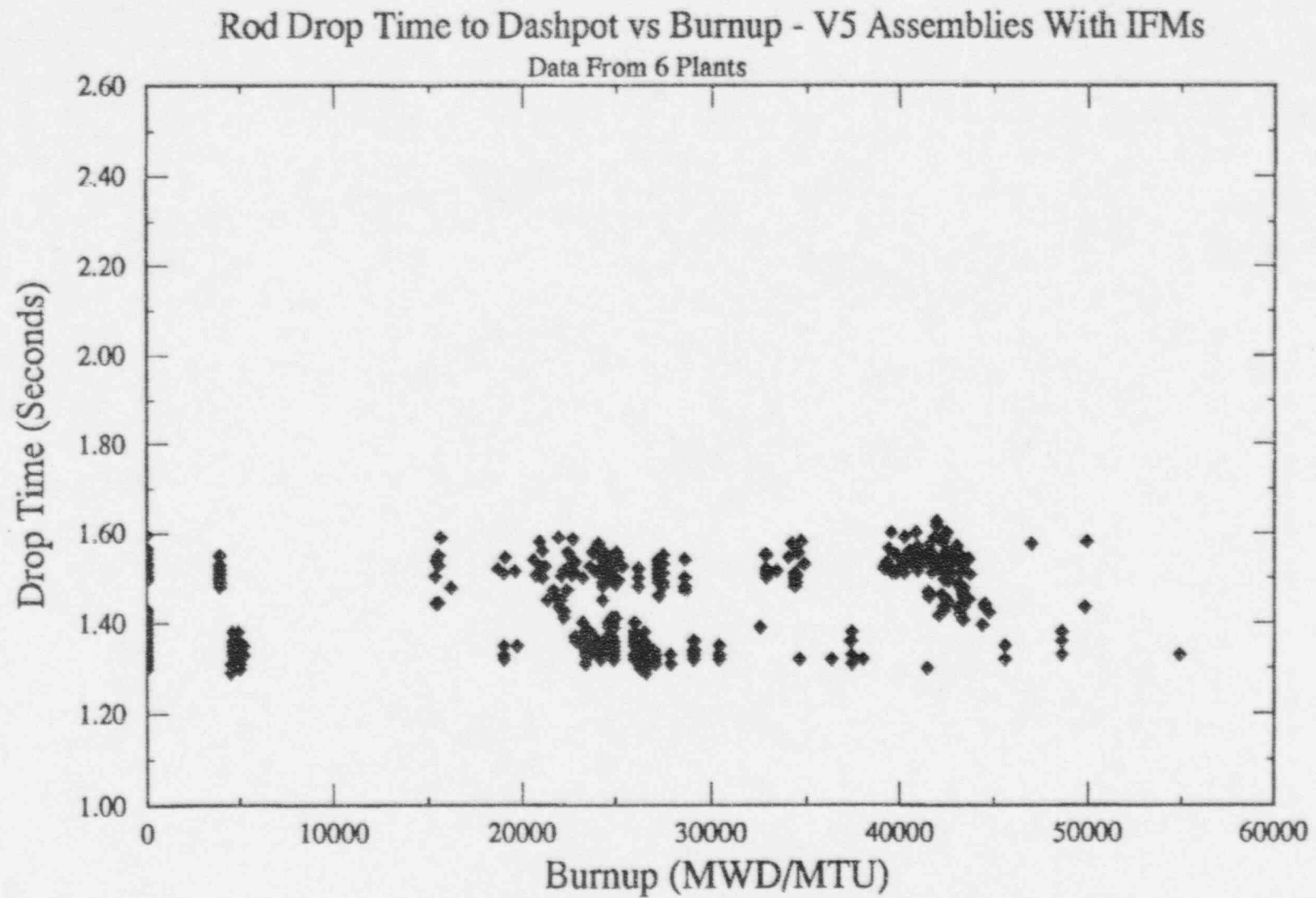


FIGURE 2



cc: M. H. Fletcher  
Professional Nuclear Consulting, Inc.  
19041 Raines Drive  
Derwood, MD 20855-2432

L. Joe Callan  
Regional Administrator  
U.S. Nuclear Regulatory Commission  
Region IV  
611 Ryan Plaza Drive  
Suite 400  
Arlington, TX 76011-8064

Senior Resident Inspector  
Callaway Resident Office  
U.S. Nuclear Regulatory Commission  
8201 NRC Road  
Steedman, MO 65077

Kristine M. Thomas (2)  
Office of Nuclear Reactor Regulation  
U.S. Nuclear Regulatory Commission  
1 White Flint, North, Mail Stop 13E16  
11555 Rockville Pike  
Rockville, MD 20852-2738

Manager, Electric Department  
Missouri Public Service Commission  
P.O. Box 360  
Jefferson City, MO 65102

STATE OF MISSOURI     )  
                              )     S S  
CITY OF ST. LOUIS     )

Donald F. Schnell, of lawful age, being first duly sworn upon oath says that he is Senior Vice President-Nuclear and an officer of Union Electric Company; that he has read the foregoing document and knows the content thereof; that he has executed the same for and on behalf of said company with full power and authority to do so; and that the facts therein stated are true and correct to the best of his knowledge, information and belief.

By



Donald F. Schnell  
Senior Vice President  
Nuclear

SUBSCRIBED and sworn to before me this 20<sup>TH</sup> day  
of September, 1996.



