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LABORATORY

IPS-286-00-00

INTRA-LABORATORY MEMO

June 22, 1997 <sup>1998</sup> <sup>R 7/8/98</sup>

TO: Distribution

FROM: L. A. Neimark 

SUBJECT: Work Plan for the Preparation of Analytical Samples from TMI Rod Segments (A/G 536A, B, C, & D)

Reference: Memo, P. A. Finn to L. A. Neimark, "Updated Request for Spent Fuel Samples for YMP," June 1, 1998

QA # YMP/SF-3A-23/

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ELEMENT 3A

PIIS 1

FA *Paul Finn 7/1/98*

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Background

The referenced memo requested five (5) 0.39 in long samples from the four (4) TMI-1 fuel rod segments we received last October (A/G 536 A, B, C, and D). The memo requested samples from the "top", "top" and "bottom," and "middle". As we now know, the fuel in the QC-1 rod segments from GE did not have fuel to the ends of the cladding. And, based on the information GE sent us for "Actual Fuel Rod Section Length" and "Fuel Column Length," we should expect the same situation with TMI segments.

The cutting locations, therefore, will depend upon where this "fuel column" is located within the "rod section." This will be determined by visual examination and depth probing. The following table summarizes the information from GE and CMT's request. It would appear that only A/G 536A is deficient in fuel.

A/G No.	GE Section No.	Rod Section Length, in.	Fuel Column Length, in.	CMT Needs, in.
536A	H6-1	30 (30)*	24.86	0.39, Top
536B	H6-2	31 (30-15/16)*	31	0.39, Middle
536C	H6-3	32 (31-15/16)*	32	0.39, Top 0.39, Bottom
536D	H6-4	33 (33)*	33	0.39, Bottom

\*As-received measurement.

## Specimen Preparation

There presently are no gamma scan profiles of these segments to guide specimen location selection. However, as CMT requires only one or two short specimens from each specimen, and as these segments will be scanned subsequently as part of the NRC LOCA program, and as there is an urgency to obtain these specimens, segment sectioning will be done before the gamma scans are obtained. When they are obtained on the remaining segment pieces, it will be possible to then estimate the gamma profile for the pieces sent to CMT.

Before sectioning any segment, ascertain the location of the fuel in the cladding by visual examination and depth probing, if necessary. Note whether the determined fuel column length agrees with the GE information in the above table; this may be relevant only to the 536A segment. If the missing fuel in 536A was at the "top," cut off the piece of "empty" cladding and save it per the attached cutting diagram. The CMT-desired piece from the "top" of the segment is then to be taken from the new "fuel column top." If the fuel was flush to the notched top end, take the CMT sample from there.

Repeat the foregoing steps for possibly missing fuel for the three other segments as shown in the attached cutting diagrams. The cut pieces should be placed in small, screw-top bottles, identified with the A/G number, for shipment to CMT, to the attention of Jeff Emery.

Apply QA appropriate for the Yucca Mountain Project.

### Distribution

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