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SUBJECT: Requests NRC approval of revised capsule withdrawal schedule for Unit 2. Revised withdrawal schedule encl.

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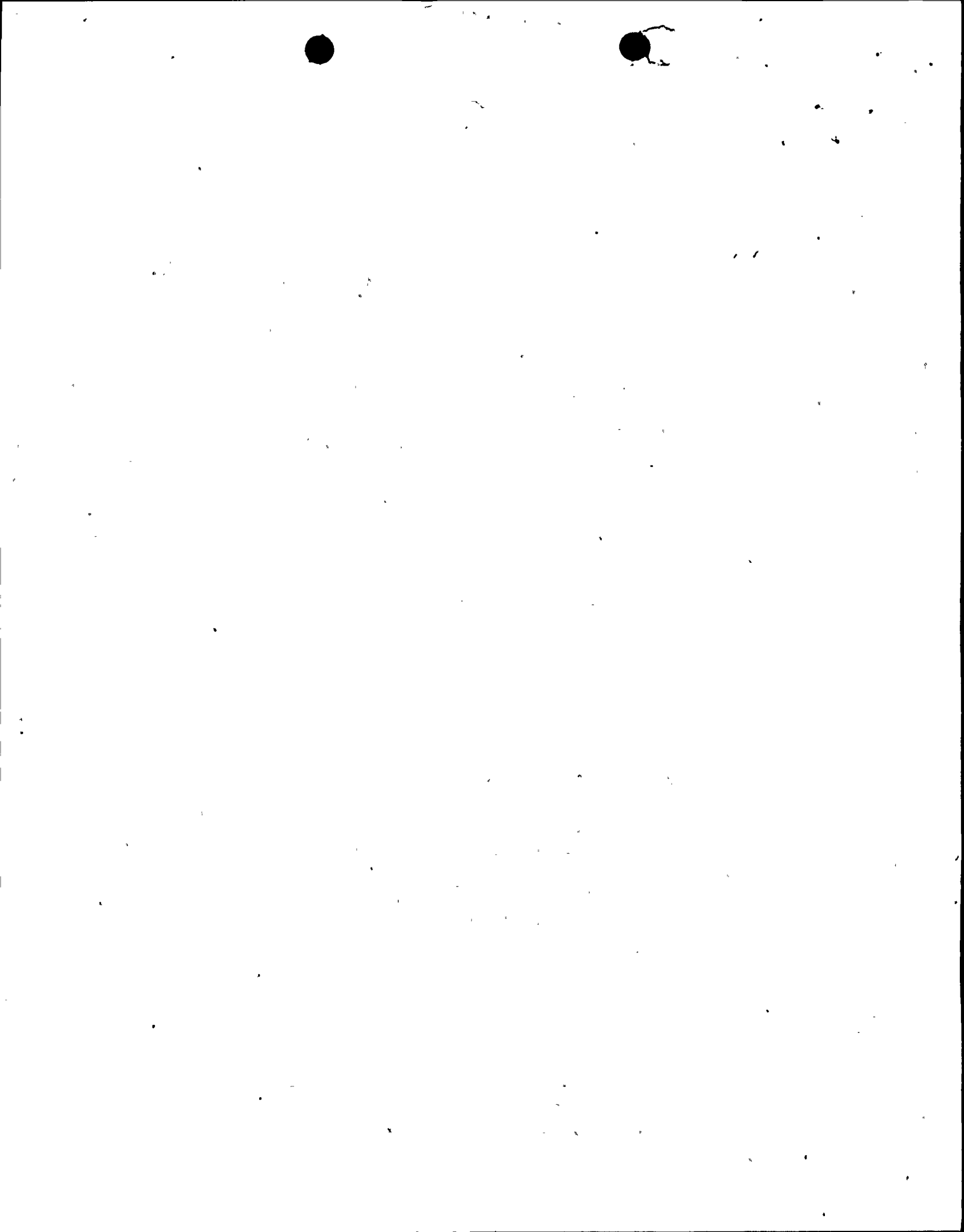
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October 22, 1997

PG&E Letter DCL-97-178



U.S. Nuclear Regulatory Commission
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Docket No. 50-323, OL DPR-82
Diablo Canyon Unit 2
Revision to Reactor Vessel Surveillance Capsule Withdrawal Schedule

Dear Commissioners and Staff:

NRC Administrative Letter (AL) 97-04, "NRC Staff Approval for Changes to 10 CFR Part 50, Appendix H, Reactor Vessel Surveillance Specimen Withdrawal Schedules," dated September 30, 1997, interprets 10 CFR 50, Appendix H, II.B.3, to require prior NRC approval for all surveillance capsule withdrawal schedule changes, in addition to the initial withdrawal schedule. Therefore, in accordance with the guidance in AL 97-04, PG&E requests NRC approval of a revised capsule withdrawal schedule for Diablo Canyon Unit 2. The revised withdrawal schedule is enclosed. The schedule accounts for the smaller lead factors now calculated for the capsule locations and the additional service needed to attain the fluence desired for the next capsule test. The withdrawal schedule change is consistent with ASTM E185-82, "Conducting Surveillance Tests for Light-Water Cooled Nuclear Power Reactor Vessels."

Background

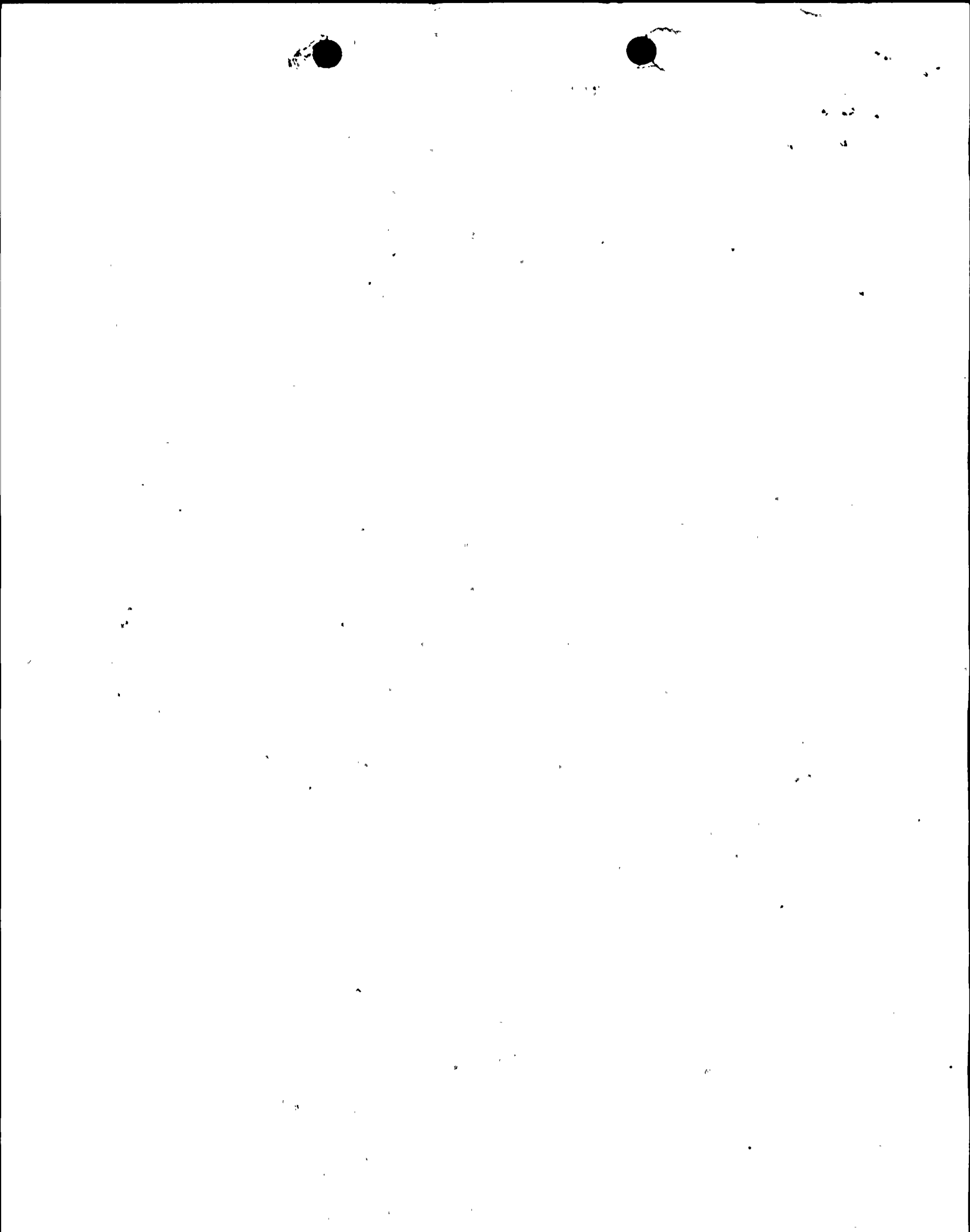
PG&E submitted the results of the reactor vessel surveillance Capsule Y, which was removed from Diablo Canyon Unit 2 on October 11, 1994, in PG&E Letter DCL-95-215, dated October 4, 1995. This letter included WCAP-14363, "Analysis of Capsule Y from the Pacific Gas and Electric Company Diablo Canyon Unit 2 Reactor Vessel Radiation Surveillance Program," as an enclosure. Based on the capsule test results, a recommended revised surveillance capsule withdrawal schedule was provided in WCAP-14363, Table 7-1. The recommended revision to the capsule withdrawal schedule was a result of revised surveillance capsule location lead factors. The updated lead factors account for the dosimetry results of all the Unit 2 surveillance capsules evaluated to date; this minimizes the uncertainty associated with any specific capsule dosimetry set.

Based on the results of WCAP-14363, PG&E revised the FSAR Update Table 5.2-22, "Reactor Vessel Material Surveillance Program Withdrawal Schedule," in Revision 11, which was provided to the NRC on November 25, 1996. The withdrawal schedule

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change maintains consistency with ASTM E185-82, as required by 10 CFR 50, Appendix H. In accordance with ASTM E185-82, Table 1, the Unit 2 surveillance program requires testing of four capsules. To date, Capsule U was tested at a fluence of 0.36×10^{19} n/cm² (corresponding to an RT_{NDT} shift of approximately 50 °F), Capsule X was tested at 0.87×10^{19} n/cm² (corresponds to EOL fluence at the vessel 1/4 T location), and Capsule Y was tested at 1.32×10^{19} n/cm² (approximate EOL fluence at vessel ID). In accordance with ASTM E185-82, testing of the final capsule should be performed at not less than once or greater than twice the peak EOL vessel fluence (1.46×10^{19} n/cm², NUREG-1511). PG&E plans to test Capsule V at a projected fluence of approximately 2.2×10^{19} n/cm², which corresponds to 1.5 times the EOL fluence at the vessel ID and represents a vessel service of 48 effective full power years (approximately 60 operating years).

The revised capsule withdrawal schedule is equivalent to WCAP-14363, Table 7-1, except that Capsules V and Z are also scheduled for removal. Capsules V, W, and Z have identical contents, similar lead factors, and will achieve the fluence equivalent to a vessel service of 60 operating years at approximately the Unit 2 ninth refueling outage (2R9). Beyond this time, there is no technical justification for additional capsule irradiation. To avoid excessive radiation damage to the capsule components and facilitate scheduling and handling, PG&E plans to remove all three capsules, V, W, and Z, during 2R9. This is consistent with ASTM E185-82 with respect to the number of capsules required for the surveillance program (two of these capsules are spares not required by this standard) and recommendations on fluence accumulation and capsule withdrawal. Following 2R9, Capsule V will be tested in accordance with ASTM E185-82 and 10 CFR 50, Appendix H, and Capsules W and Z will be stored in the spent fuel pool as available spares if needed to address future contingencies.

Request for Approval

Pursuant to the proposed schedule revision, surveillance Capsules V, W, and Z will be removed during 2R9. Since this will defer capsule removal from 2R8 (current approved schedule) to 2R9 (proposed schedule), actual implementation of the revised schedule will be effective at 2R8. Accordingly, PG&E requests approval of the Unit 2 surveillance capsule revised withdrawal schedule by February 15, 1998, which is the scheduled 2R8 start date.

Sincerely,



Lawrence F. Womack

Enclosure

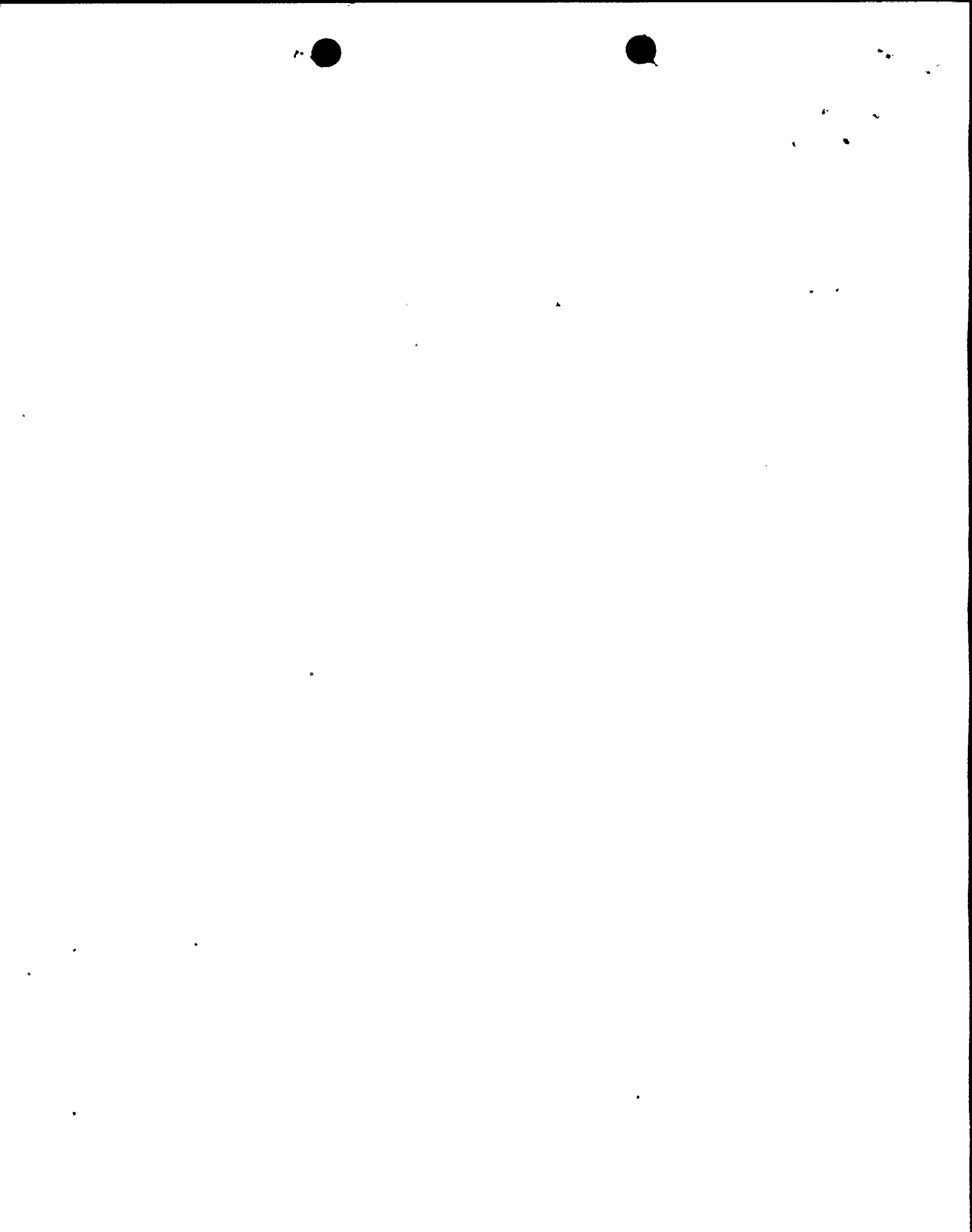
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ENCLOSURE

Reactor Vessel Material Surveillance Program Withdrawal Schedule
(Table 5.2-22, FSAR Update, Revision 11/11A)



DCPP UNITS 1 & 2 FSAR UPDATE

TABLE 5.2-22

REACTOR VESSEL MATERIAL SURVEILLANCE PROGRAM

WITHDRAWAL SCHEDULE

UNIT 1

<u>Capsule</u>	<u>Location</u>	<u>Lead Factor</u>	<u>Removal Time (EFPY)^(a)</u>
S	320°	3.45	1.26 (Tested)
Y	40°	3.42	5.86 (Tested)
T	140°	3.42	5.86 (Removed)
Z	220°	3.42	5.86 (Removed)
V	320°	3.34	13.5
C ^(b)	140°	3.34	15.9
D ^(b)	220°	3.34	20.7 ^(c)
B ^(b)	40°	3.34	20.7
A ^(b)	184°	1.25	Standby
U	356°	1.25	Standby
X	176°	1.25	Standby
W	4°	1.25	Standby

UNIT 2

<u>Capsule</u>	<u>Location</u>	<u>Lead Factor</u>	<u>Removal Time (EFPY)^(a)</u>
U	56°	4.64	0.99 (Tested)
X	236°	4.65	3.11 (Tested)
Y	238.5°	4.15	7.0 (Tested)
W	124°	4.58	10.6 ^(d)
V	58.5°	4.15	11.6
Z	304°	4.58	10.6 ^(d)

(a) Approximate full power years from plant startup.

(b) Installed at 5.86 EFPY (EOC5).

(c) Anneal at 15.9 EFPY and reinsert.

(d) This is a spare/standby capsule and will be stored in the spent fuel pool upon removal.



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