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SUBJECT: Forwards fluence vs operating time curve presented at 850717 meeting to support 821208 Tech Spec change re heatup & cooldown limits.Conclusions support capsule withdrawal schedule in proposed Tech Spec.

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August 19, 1985

Director of Nuclear Reactor Regulation
Attention: Mr. John A. Zwolinski, Chief
Operating Reactors Branch No. 5
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Subject: Proposed Technical Specification
Heatup and Cooldown Limits
R. E. Ginna Nuclear Power Plant
Docket No. 50-244

Dear Mr. Zwolinski:

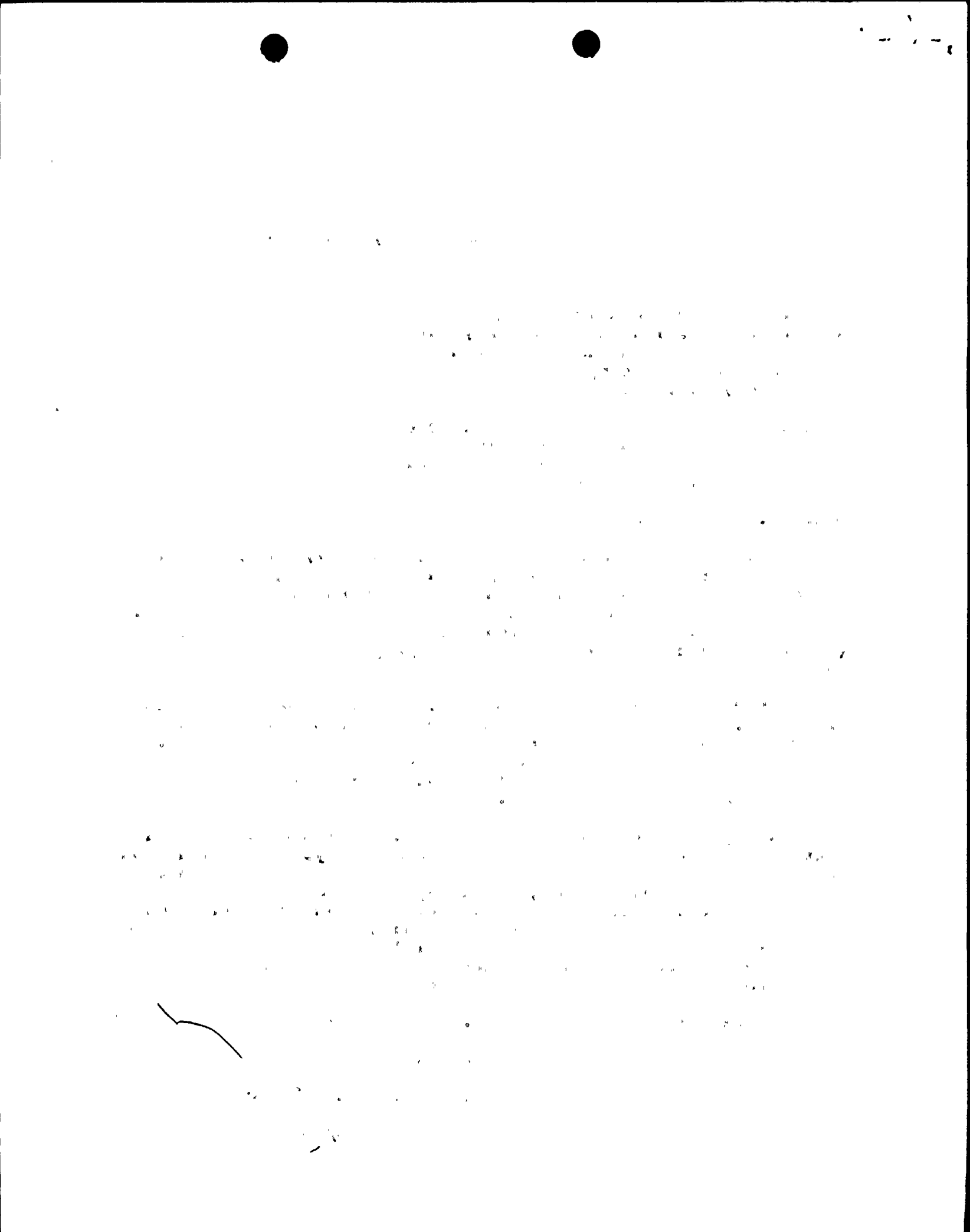
At a meeting with the NRC Staff on July 17, 1985, additional plant specific information was presented which supports our proposed Technical Specification change for the heatup and cooldown limits dated December 8, 1982. The additional information was in response to questions regarding the period of time (neutron fluence level) for which the proposed curves would remain valid.

Attached is the fluence vs. operating time curve that was presented. Data is shown for the location of maximum fluence at the vessel inner radius (0T) as well as at the 1/4T position. Also depicted are fluence vs. time curves for surveillance capsules located at azimuthal locations of 13° and 23° relative to the reactor core cardinal axes.

In regard to the attached figure, the solid portion of each curve represents plant-specific data through cycle 14 taken from a prior transmittal dated August 8, 1984. The dashed portion of each curve represents a projection beyond cycle 14 to end of design life (32 EFPY). These projections assume continued low leakage fuel management and are based on neutron flux levels equal to the linear average of those calculated for cycles 13 and 14. In particular, the following neutron flux levels were used for projection beyond 10.4 effective full power years.

13° capsule	9.46×10^{10} n/cm^2-sec
23° capsule	6.25×10^{10} n/cm^2-sec
vessel 0T	3.08×10^{10} n/cm^2-sec
vessel 1/4T	2.03×10^{10} n/cm^2-sec

A001
1/1



Based on these projections, the following observations can be made:

1. The 1/4T vessel location is estimated to reach an exposure level of 1.5×10^{19} after 20.5 effective full power years of operation.

2. The estimated end of life fast neutron (E > 1.0 MeV) exposure of the R.E. Ginna reactor vessel (0T) is 3.38×10^{19} n/cm^2.

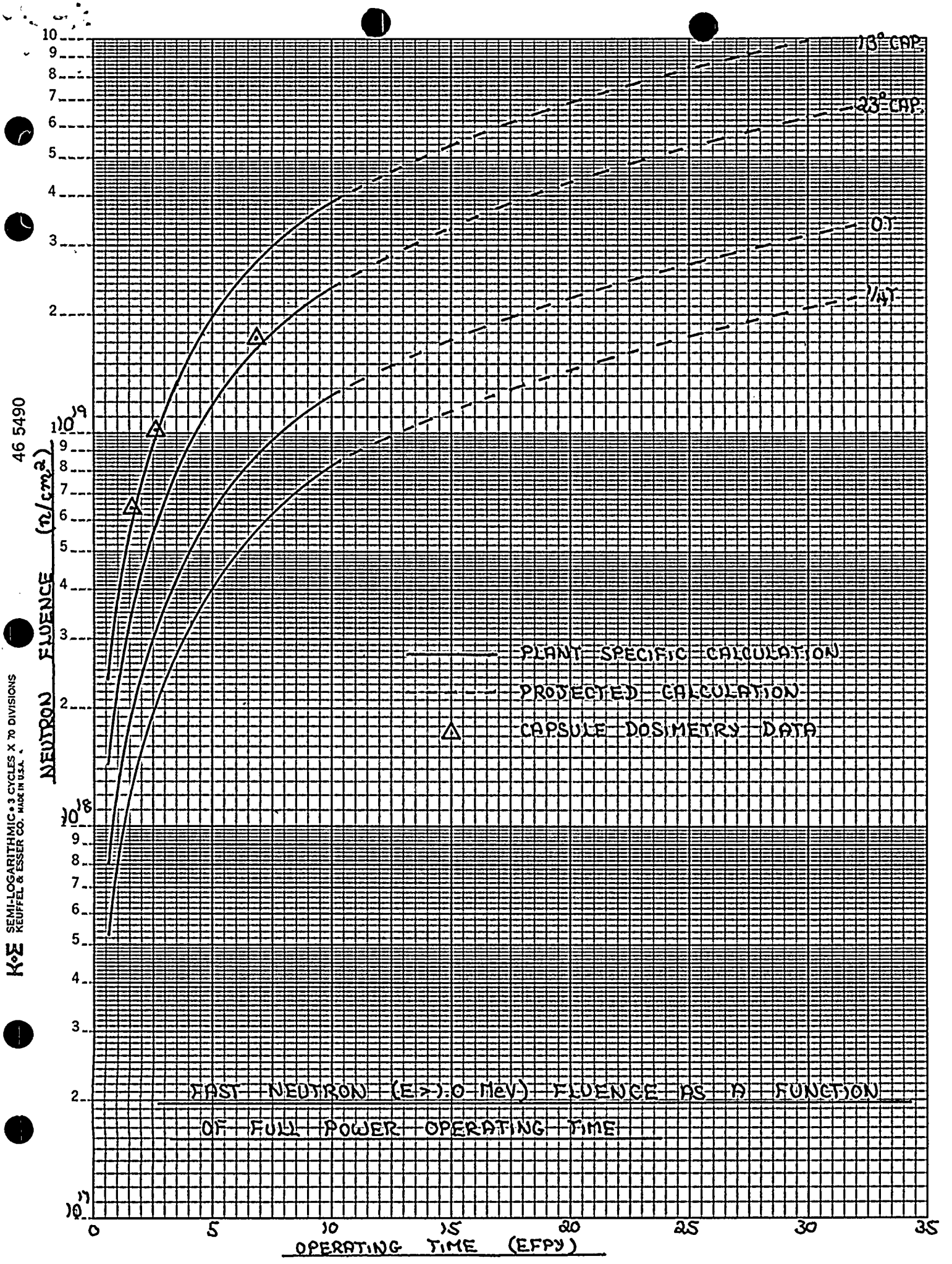
3. To simulate end of life conditions, a surveillance capsule should be withdrawn from the 23° position after 15.4 effective full power years of operation. However, extension of the withdrawal time to 17 effective full power years would increase the capsule exposure to only 3.70×10^{19} n/cm^2, approximately 10% greater than vessel EOL fluence.

It is anticipated that future fuel management practices will be consistent with those assumed for projections beyond Cycle 14. The conclusions noted above support the capsule withdrawal schedule in the proposed Technical Specification.

Very truly yours,

Roger W. Kober

Roger W. Kober


13° CAP.
23° CAP.
0T
1/4T
NEUTRON FLUENCE (n/cm²)
10¹⁹
10¹⁸
10¹⁷
PLANT SPECIFIC CALCULATION
PROJECTED CALCULATION
CAPSULE DOSIMETRY DATA
FAST NEUTRON (E>1.0 MeV) FLUENCE AS A FUNCTION OF FULL POWER OPERATING TIME
0
5
10
15
20
25
30
35
OPERATING TIME (EFPY)
46 5490
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