June 23, 1988

Docket No. 50-298

Mr. George A. Trevors, Division
Manager - Nuclear Support
Nebraska Public Power District
Post Office Box 499
Columbus, Nebraska 68601

Dear Mr. Trevors:

SUBJECT: COOPER NUCLEAR STATION TECHNICAL SPECIFICATIONS, PRESSURE-TEMPERATURE LIMITATIONS, CORRECTION TO AMENDMENT NO. 120 (TAC NO. 65793)

On April 26, 1988 the staff issued Amendment No. 120 to Facility Operating License No. DPR-46 for the Cooper Nuclear Station. Subsequent to issuance of the amendment you advised the staff of your discovery of an error in the P-T Curve revised by the amendment. Background information which you provided to the staff is enclosed for docket record purposes. Based on the information provided in the enclosed letter, the staff has determined that a 10 CFR Part 50.90 reapplication to correct the error is unnecessary.

A corrected Figure 3.6.1.b dated June 23, 1988 is also enclosed. The Federal Register notices and Safety Evaluation associated with Amendment 120 are consistent with the enclosed revised figure. This figure replaces that provided in Amendment 120.

If you have any questions please contact me at 301-492-1336.

Sincerely,

/s/
William O. Long, Project Manager
Project Directorate - IV
Division of Reactor Projects - III, IV, V and Special Projects

Enclosure:
As stated

cc w/enclosure:
See next page

DISTRIBUTION

Docket File	NRC PDR	Local PDR	PD4 Reading
L. Rubenstein	J. Calvo	P. Noonan	W. Long
OGC-Rockville	E. Jordan	B. Grimes	ACRS (10)
C. Y. Cheng	PD4 Plant File		

*See previous concurrences:

PD4/LA*	PD4/PM*	PD4/D	OGC*	EMTB
PNoonan	WLong:sr	JCalvo	JGoldberg	CYCheng
06/17/88	06/17/88	06/23/88	06/17/88	06/22/88

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William O. Long, Project Manager
Project Directorate - IV
Division of Reactor Projects - III, IV, V and Special Projects

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PD4/LA	PD4/PM	PD4/D	
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06/17/88	06/17/88	06/ /88	6/17/88

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

June 23, 1988

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Nebraska Public Power District
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Sincerely,

William O. Long

William O. Long, Project Manager
Project Directorate - IV
Division of Reactor Projects - III,
IV, V and Special Projects

Enclosure:
As stated

cc w/enclosure:
See next page

cc:
Mr. G. D. Watson, General Counsel
Nebraska Public Power District
P. O. Box 499
Columbus, Nebraska 68601

Cooper Nuclear Station
ATTN: Mr. Guy R. Horn, Division
Manager of Nuclear Operations
P. O. Box 98
Brownville, Nebraska 68321

Dennis Grams, Director
Nebraska Department of Environmental
Control
P. O. Box 98922
Lincoln, Nebraska 68509-8922

Mr. Larry Bohlken, Chairman
Nemaha County Board of Commissioners
Nemaha County Courthouse
1824 N Street
Auburn, Nebraska 68305

Senior Resident Inspector
U.S. Nuclear Regulatory Commission
P. O. Box 218
Brownville, Nebraska 68321

Regional Administrator, Region IV
U.S. Nuclear Regulatory Commission
611 Ryan Plaza Drive, Suite 1000
Arlington, Texas 76011

Mr. Harold Borchart, Director
Division of Radiological Health
Department of Health
301 Centennial Mall, South
P. O. Box 95007
Lincoln, Nebraska 68509-5007

Enclosure

GE Nuclear Energy

General Electric Company
175 Curtner Avenue San Jose CA 95125

May 23, 1988

cc: D. Brager
S. Ranganath

Mr. M. T. Boyce
Nebraska Public Power District
1414 15th Street
Columbus, NE 68601

Subject: CORRECTION TO CORE CRITICAL PRESSURE-TEMPERATURE CURVE

Dear Mike,

I have reviewed the requirements of 10CFR50, Appendix G and the pressure-temperature limits calculated for the Cooper vessel, and I agree with your conclusion that a correction is needed on the curve for core-critical operation (Curve C). Appendix G allows the BWR to operate with the core critical at temperatures below the hydrostatic pressure test temperature, determined from Curve A, only if maintaining normal water level and with vessel pressure below 312 psig (20% of preservice hydrotest pressure). This second condition is relevant to the Cooper core-critical curve because the Curve A hydrostatic test temperature is unusually high. The corrected Curve C is attached as Figure 1.

In most BWR analyses, the pressure-temperature limits for the feedwater nozzle are more limiting than the hydrotest temperature requirement, because most required pressure test temperatures are below 200°F. However, the Cooper curves include a large irradiation shift based on the surveillance test results, resulting in a pressure test temperature of 208°F at 1100 psig. This causes the step seen in Figure 1, the corrected Curve C, in order to meet the requirement of paragraph IV.A.3 of Appendix G.

The region of pressure and temperature affected by the change is a region in which the BWR cannot operate with the core critical. The reactor water level must be in the normal operating range, or else the reactor will SCRAM. With normal water level, the only way to pressurize the large "bubble" of vapor in the steam dome is to increase pressure according to the P-T relationship for saturated steam. As shown in Figure 2 attached, the saturated steam relationship is far to the right in the safe operating region. Therefore, the omission of the step in Curve C does not impact safety.

Verification of the attached curves and of the conclusions in this letter is contained in DRF 137-0010, entry SASR 88-41. If I can help further, or if you have any questions, please call me.

Regards,

Tom Caine

T. A. Caine, Senior Engineer
Structural Analysis Services
(408) 925-4047

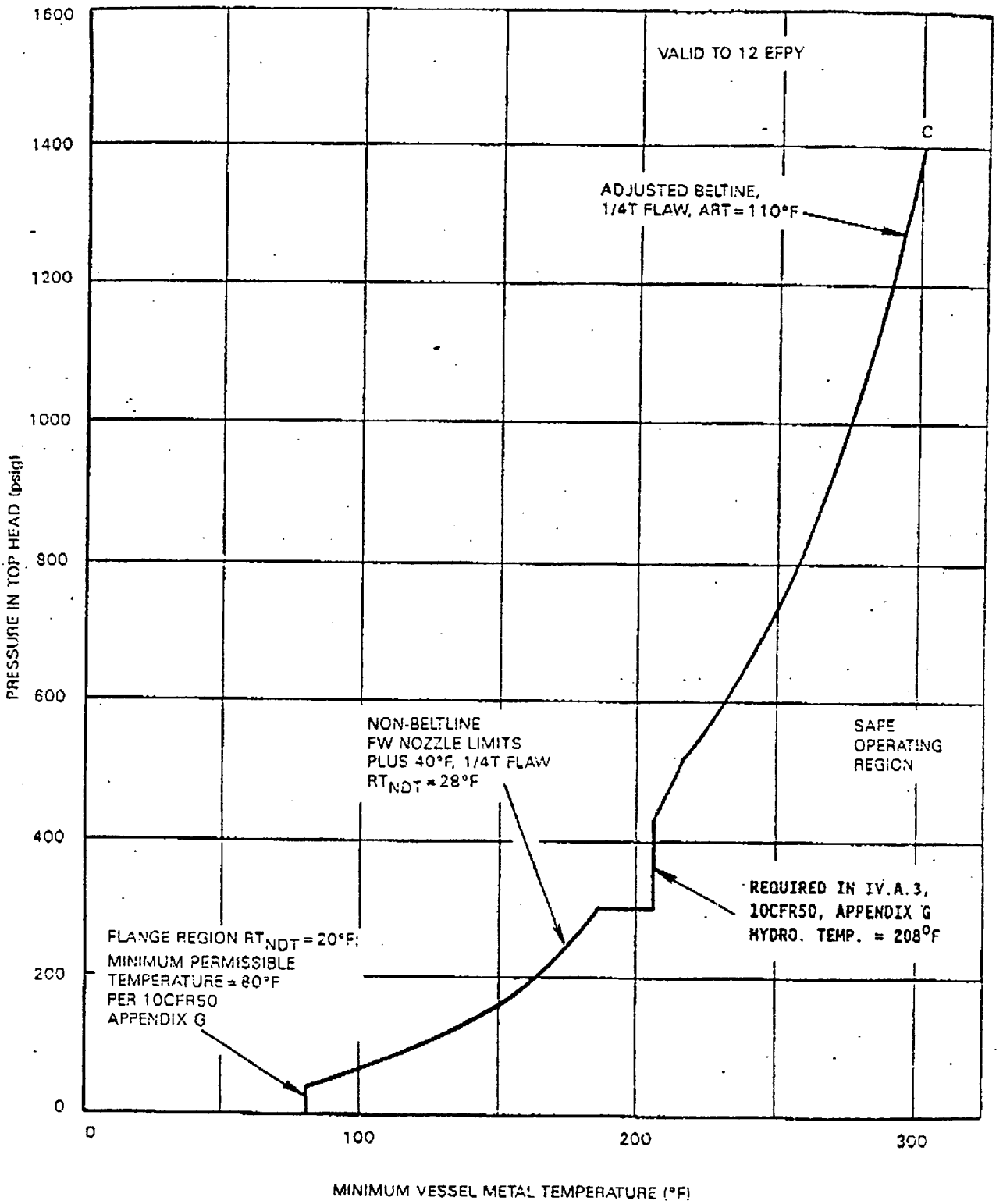


Figure 3.6.1.b Minimum Temperature for Core Operation (Criticality) - Includes 40°F Margin Required by 10CFR50 Appendix G

FIGURE 1

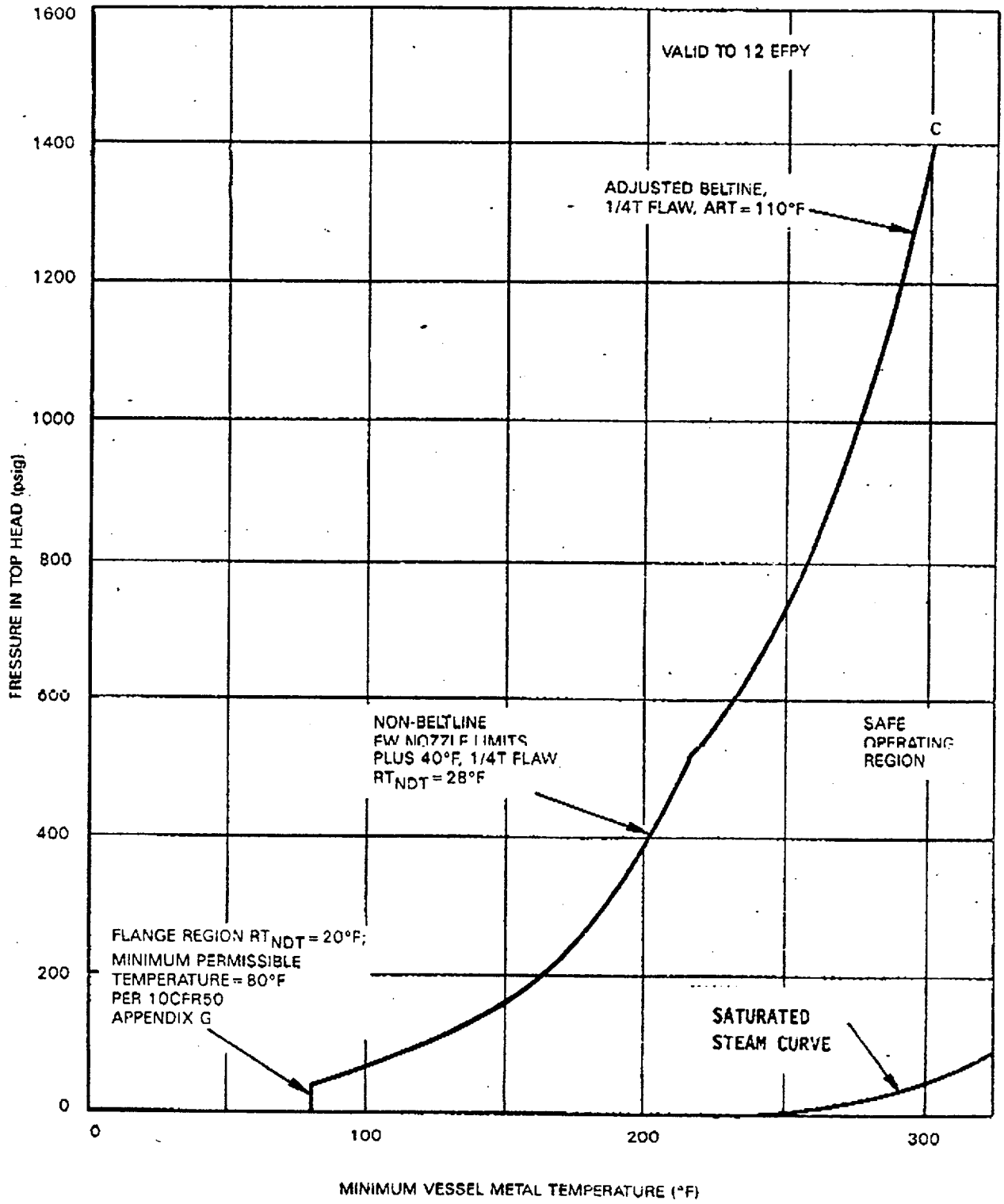
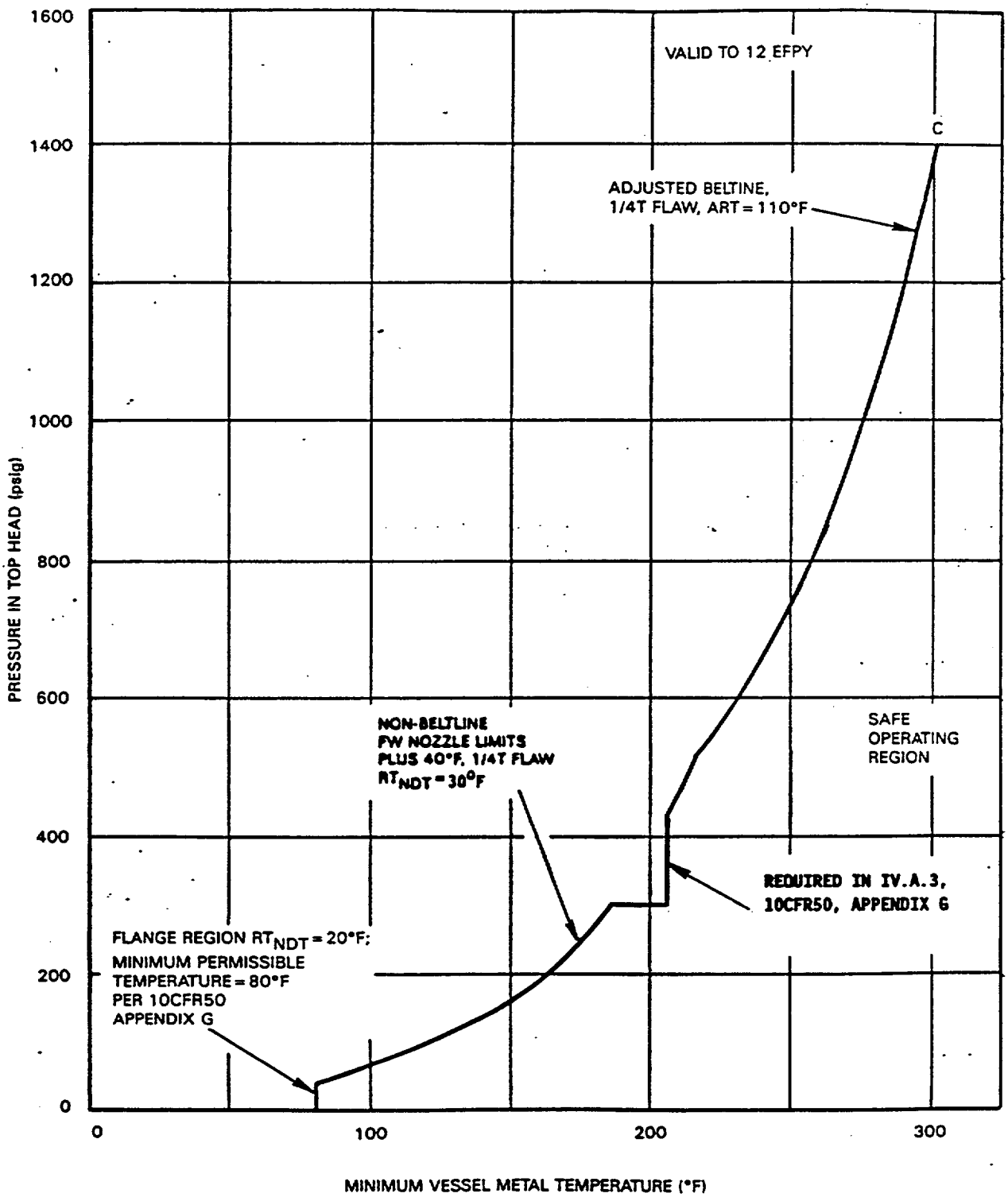


Figure 3.6.1.b Minimum Temperature for Core Operation (Criticality) - Includes 40°F Margin Required by 10CFR50 Appendix G

FIGURE 2



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