



24 September, 1998
LD-98-028

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D.C. 20555

Subject: Improving Thermal Power Accuracy Via Ultrasonic Flow Measurement

- References: 1) Letter, C.R. Hastings (Caldon) to USNRC Document Control Desk, "Submittal of Topical Report - Improving Thermal Power Accuracy and Plant Safety While Increasing Operating Power Level Using the LEFM System, Caldon, Inc. Topical Report No. ER-80P", March 10, 1997 ✓
- 2) Letter, C.L. Terry (TU Electric) to USNRC Document Control Desk, "Comanche Peak Steam Electric Station (CSES) Docket No. 50-445 and 50-446 Request for Exemption from Appendix K to 10CFR50 ECCS Evaluation Models", August 13, 1998

Recent advances in thermal power level measurement techniques have allowed licensees to demonstrate power measurement uncertainties that are substantially below the Appendix K mandated value of 2%. Reference 1 provides an example of a measurement technique that is reportedly capable of this improved accuracy. In addition, ABB-CE is a vendor of an improved ultrasonic flowmeter that also provides substantial demonstrated improvements in power measurement uncertainty.

As a result of the improved measurement accuracy, the licensed power level of nuclear plants could be immediately increased, for a small cost, by taking credit for the inherent accuracy available via the improved thermal power measurement technologies. However, as you are aware, 10CFR50 Appendix K mandates a 2% power penalty be applied in Emergency Core Cooling System (ECCS) performance evaluation models for Loss-of-Coolant-Accident (LOCA) safety analyses. In order for utilities to take advantage of the new measurement technologies as a means of increasing power level the NRC must either grant exemptions from the Appendix K power uncertainty requirement or change the Appendix K regulation.

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Combustion
Engineering

ABB Combustion Engineering Nuclear Power

Combustion Engineering, Inc.

P.O. Box 500
2000 Day Hill Rd.
Windsor, CT 06095-0500

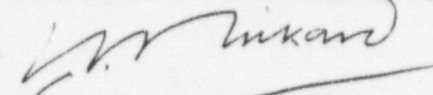
Telephone (860) 285-9678
Fax (860) 285-3253

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At least one utility, TU Electric, has already petitioned the NRC (Reference 2) for an exemption to the Appendix K power requirement to allow its Comanche Peak Steam Electric Station Units 1 and 2 to increase their licensed power level by 1% using an ultrasonic flow measurement technology. ABB-CE, in conjunction with the CE Owners Group (CEOG) and other utilities, anticipates similar actions. To this end, ABB-CE expects to request a meeting with NRC staff in the near future to discuss both the submittal of a topical report and solicitation of exemptions from 10CFR50 Appendix K. Consequently, ABB-CE has a keen interest in this area and is supportive of NRC initiatives which would allow the use of modern technologies to supplant requirements invoked many years ago to assure conservatism when no other viable course of action was readily available. As both a nuclear steam supply system and nuclear fuel vendor, ABB-CE has the unique combination of expertise necessary to address the various degrees of existing safety analysis and fuel design conservatisms relevant to a request for relief from regulatory requirements in order to implement an ~1% licensed power level increase. We look forward to having a dialogue with the NRC staff on this subject.

If you have any questions concerning this matter, please do not hesitate to call me or Chuck Molnar of my staff at (860) 285-5205.

Very truly yours,
COMBUSTION ENGINEERING, INC.



Ian C. Bickard, Director
Nuclear Licensing

xc: S. L. Magruder (NRC)
T.E. Collins (NRC)
CEOG Analysis Subcommittee
CEOG Licensing Subcommittee