



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO REFERENCE OF THE BWU-Z CRITICAL HEAT FLUX CORRELATION  
IN LICENSING DOCUMENTATION AND USE IN LICENSING APPLICATIONS

DUKE POWER COMPANY

CATAWBA NUCLEAR STATION, UNITS 1 AND 2

MCGUIRE NUCLEAR STATION, UNITS 1 AND 2

DOCKET NOS. 50-413, 50-414, 50-369, AND 50-370

1.0 INTRODUCTION

In a letter of October 22, 1996, Duke Power Company (DPC), requested approval to reference the BWU-Z critical heat flux (CHF) correlation included in the descriptions contained in the topical report BAW-10199P-A, "The BWU Critical Heat Flux Correlations" (approved by letter, R. Jones to J. Taylor, April 5, 1996) in licensing documentation for its Catawba and McGuire Nuclear Stations, and incorporate that correlation in its licensing analytical models for those plants. DPC also requested to incorporate the statement "Other CHF correlations that have been reviewed and approved by the NRC may also be used to perform DNBR analyses," currently found in the approved DPC report DPC-NE-3000, Revision 1, into its reports DPC-NE-3001, DPC-NE-2004, and DPC-NE-2007.

2.0 EVALUATION

2.1 BWU-Z Applicability to Catawba and McGuire

In its review, the staff considered the acceptability of the BWU-Z CHF correlation for reference in Catawba and McGuire licensing documentation and use in Catawba and McGuire licensing analyses. The staff also referred to BAW-10199P-A and the staff's safety evaluation report (SER) of April 5, 1996, which discuss the BWU-Z correlation and its applicability considerations. From such review, the staff concludes that the BWU-Z correlation covers the ranges of thermal/hydraulic conditions expected in Catawba and McGuire licensing analyses and therefore is suitable for inclusion in versions of the VIPRE code approved for use in Catawba and McGuire licensing analyses. Therefore, the staff also concludes that BAW-10199P-A (August 1996) is acceptable for reference in Catawba and McGuire licensing documentation, including plant technical specifications and core operating limits reports (COLRs).

## 2.2 Topical Reports Wording Change

In its October 22, 1996, letter, DPC also requested to incorporate the statement "Other CHF correlations that have been reviewed and approved by the NRC may also be used to perform DNBR analyses," currently found in the approved DPC topical report DPC-NE-3000, Revision 1, into its reports DPC-NE-3001, DPC-NE-2004, and DPC-NE-2007. In the staff's reading of the request, it appears that the wording would permit DPC to reference and use other approved correlations in licensing analyses without prior NRC approval. Such reference and use would be contrary to the operating license and COLR change process, which requires that any change to a methodology referenced in plant technical specifications or COLR (e.g., VIPRE) be reviewed and approved by the staff for that reference prior to doing so. Therefore, the staff concludes that the proposed wording change is unacceptable. The staff's understanding of the wording is that it is to indicate which correlations might be candidates for technical specifications or COLR inclusion, with only an applicability review by the staff. It is only with this understanding that the staff previously approved the wording to stand in DPC-NE-3000, Revision 1.

## 3.0 CONCLUSIONS

The staff concludes that BAW-10199P-A (August 1996) is acceptable for reference in Catawba and McGuire licensing documentation, including plant technical specifications and COLRs, and for use in versions of the VIPRE code approved for use in Catawba and McGuire licensing analyses.

The staff does not approve the requested topical report wording changes.

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Date: February 20, 1997