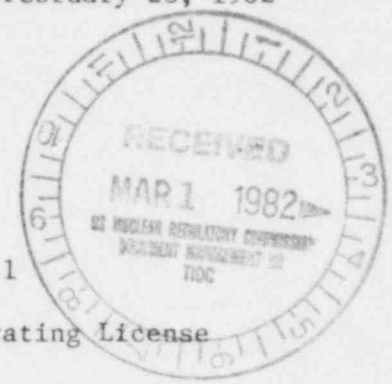
Duquesne Light

435 Sixth Avenue
Pittsburgh, Pa.
15219

(412) 456-6000

February 23, 1982



Director of Nuclear Reactor Regulation
United States Nuclear Regulatory Commission
Attn: Mr. Steven A. Varga, Chief
Operating Reactors Branch No. 1
Division of Licensing
Washington, D. C. 20555

Reference: Beaver Valley Power Station, Unit No. 1
Docket No. 50-334, License No. DPR-66
Proposed Change Request No. 66 to Operating License

Gentlemen:

Enclosed are three (3) originals and thirty-seven (37) copies of proposed Change Request No. 66 of the Beaver Valley Power Station, Unit No. 1 Technical Specifications, Appendix A. This change modifies the technical specification on rod misalignment, core peaking factor limits and associated parameters. Evaluated were core kinetics characteristics, control rod worths and core peaking factors; reanalyzed were the rod ejection and dropped rod incidents. Your review and approval of these changes are requested to support the planned startup of the Unit on May 23, 1982. A Reload Safety Evaluation has been performed and will be submitted separately. The Reload Safety Evaluation was performed assuming that these Technical Specification changes would be approved; however, the validity of the Reload Safety Evaluation is not dependent upon the approval of these proposed changes. FSAR changes will be made as necessary to reflect these changes, if approved. The changes are to the partial power multiplier, which changes the .2 factor to .3 in the $F\Delta H$ and F_{xy} peaking factor equations, FSAR Sections 3.3 and 3.4. These changes to the FSAR will be included in the annual update.

Safety Evaluation

The purpose of this Change Request is to include in the Technical Specifications the changes as recommended in the Cycle 3 Reload Safety Evaluation. The effects of this change on the design bases and postulated incidents were accomodated within the conservatism of the initial assumptions or were reanalyzed and it was determined that the applicable design bases were not exceeded.

Table 2.2-1 Reactor Trip System Instrumentation Trip Setpoints items 3 and 4 have been returned to the original values. The present values were an interim solution, recommended because there was concern for a potential power overshoot while in the automatic rod control mode following dropped rod events without immediate reactor trip. This return to the original values has been made due to the long term evaluation completed by Westinghouse. The NRC was notified in August, 1981, of the conclusion that the interim restrictions on operation above 90% power could be removed.

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The $F_{\Delta H}$ value of 1.5355 has been changed to 1.55 because the rod bow is now accounted for by the burnup dependent rod bow penalty of [1-RBP(BU)]. The $F_{\Delta H}$ and F_{XY} partial power multiplier has been changed from 0.2 to 0.3 to increase the $F_{\Delta H}$ margin at low power levels while leaving the full power limit unchanged. This is standard practice with Westinghouse 17 x 17 fuel cores. The above proposed $F_{\Delta H}$ changes would allow for more flexibility in the loading pattern selection with possibly a relaxation of the burnup window constraints and would mean an overall improvement in the design and operating flexibility for future reload cycle designs.

Since F_{XY} is a surveillance limit and not a limiting condition for operation, the Radial Peaking Factor Limit Report will provide a mechanism to report the F_{XY} limits on a cycle by cycle basis without the need to submit F_{XY} Technical Specification changes and still fall within the submittal guidelines of 10 CFR 50.59. The Radial Peaking Factor Limit Report will be submitted at least 60 days prior to initial criticality for each cycle.

During Cycle 2, a Technical Specification change was instituted to allow deviations of ±16 steps between the rod demand position indications and analog rod position indicators. Also, the allowance for the individual rod position indication system accuracy was increased to ±16 steps. The analysis performed to support the ±32 step rod misalignment Technical Specification change for Cycle 3 has shown that the peaking factor increases resulting from misalignments of ±32 steps are small at significant power levels and are within the available margins and conservatisms as set forth in the FSAR. At very low power levels, $F_{\Delta H}$ and F_{XY} limits may be exceeded; however, the core limits are vessel exit boiling limited and are not a function of peaking factors. Consequently there is no safety concern. Routinely, plants are operated with rods essentially fully withdrawn. This mitigates large upward rod misalignments which analysis has found to be much more limiting than downward rod misalignments. This, combined with the fact that actual rod misalignments are very rare in Westinghouse plants, makes the occurrance of large misalignments very unlikely.

The above conclusions are valid for N-1 loop operation as the peaking factor characteristics of the N and N-1 loop cores are similar.

The OSC and ORC have reviewed this proposed change to operations and have determined that there are no unreviewed safety questions associated with this change and that this change does not involve an unreviewed safety question.

We have determined this to be a Class III Change and will be submitted under separate cover

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The $F\Delta H$ value of 1.5355 has been changed to 1.55 because the rod bow is now accounted for by the burnup dependent rod bow penalty of [1-RBP(BU)]. The $F\Delta H$ and F_{XY} partial power multiplier has been changed from 0.2 to 0.3 to increase the $F\Delta H$ margin at low power levels while leaving the full power limit unchanged. This is standard practice with Westinghouse 17 x 17 fuel cores. The above proposed $F\Delta H$ changes would allow for more flexibility in the loading pattern selection with possibly a relaxation of the burnup window constraints and would mean an overall improvement in the design and operating flexibility for future reload cycle designs.

Since F_{XY} is a surveillance limit and not a limiting condition for operation, the Radial Peaking Factor Limit Report will provide a mechanism to report the F_{XY} limits on a cycle by cycle basis without the need to submit F_{XY} Technical Specification changes and still fall within the submittal guidelines of 10 CFR 50.59. The Radial Peaking Factor Limit Report will be submitted at least 60 days prior to initial criticality for each cycle.

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The above conclusions are valid for N-1 loop operation as well, since the peaking factor characteristics of the N and N-1 loop cores are very similar.

The OSC and ORC have reviewed this proposed change to the Technical Specifications and have determined that there are no unreviewed safety implications associated with this change and that this change does not constitute an unreviewed safety question.

We have determined this to be a Class III Change Request and a check for $4,000.00 will be submitted under separate cover in accordance with 10 CFR 170.22.

Very truly yours,

J. J. Carey
Vice President, Nuclear

COMMONWEALTH OF PENNSYLVANIA)
) SS:
COUNTY OF BEAVER)

On this 24th day of February, 1982, before me, Sheila M. Fattore, a Notary Public in and for said Commonwealth and County, personally appeared J. J. Carey, who being duly sworn, deposed, and said that (1) he is Vice President of Duquesne Light, (2) he is duly authorized to execute and file the foregoing Submittal on behalf of said Company, and (3) the statements set forth in the Submittal are true and correct to the best of his knowledge, information and belief.

Sheila M. Fattore

SHEILA M. FATTORE, NOTARY PUBLIC
SHIPPINGPORT BORO, BEAVER COUNTY
MY COMMISSION EXPIRES SEPT. 16, 1985
Member, Pennsylvania Association of Notaries

cc: Mr. D. A. Beckman, Resident Inspector
U. S. Nuclear Regulatory Commission
Beaver Valley Power Station
Shippingport, Pennsylvania 15077

U. S. Nuclear Regulatory Commission
c/o Document Management Branch
Washington, D.C. 20555

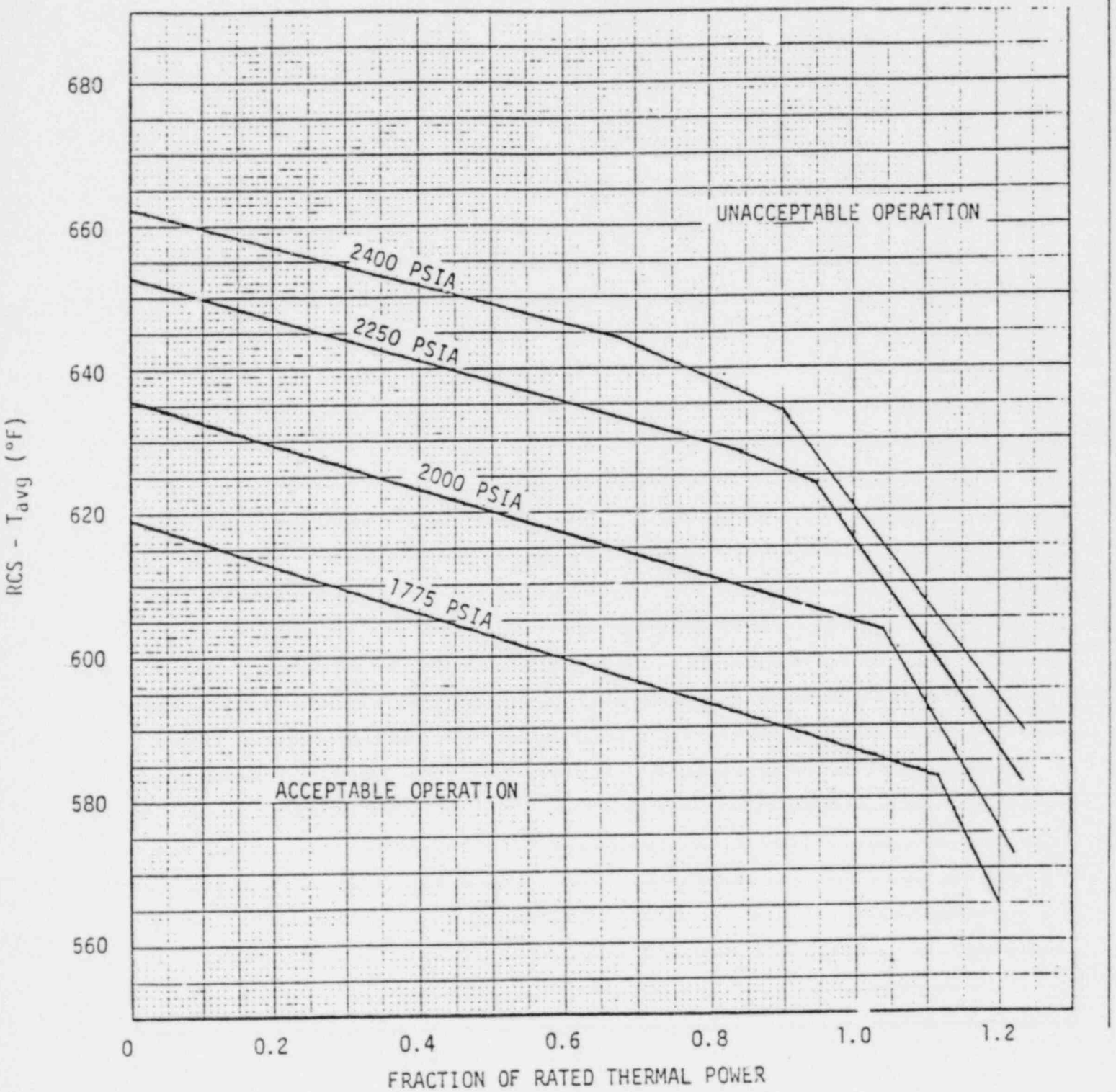

FIGURE 2.1-1 REACTOR CORE SAFETY LIMIT - THREE LOOPS IN OPERATION

PROPOSED WORDING

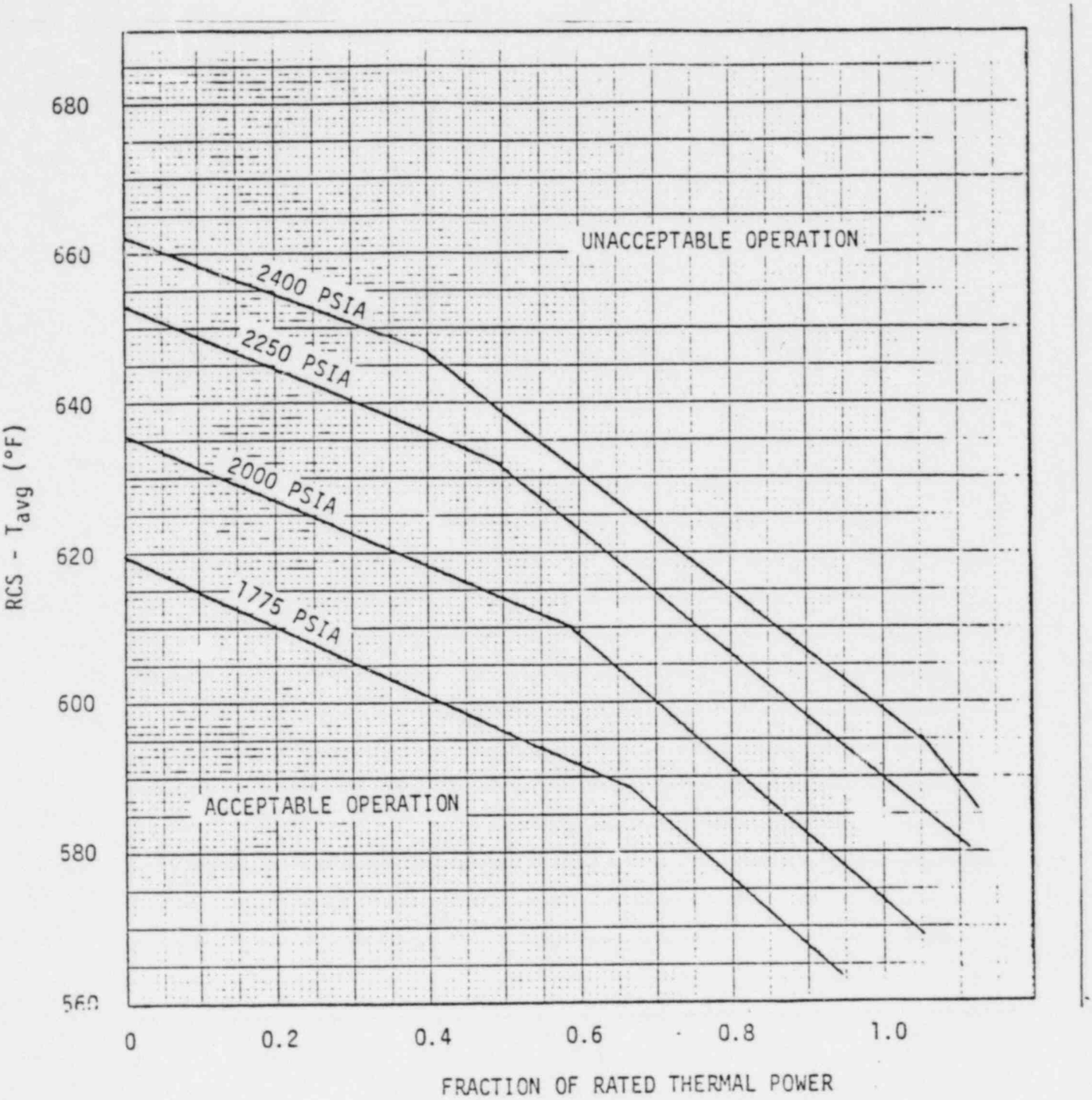

FIGURE 2.1-2 REACTOR CORE SAFETY LIMIT - TWO LOOPS IN OPERATION (ONE LOOP ISOLATED)

PROPOSED WORDING