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August 13, 2001
L-01-107

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555-0001

**Subject: Beaver Valley Power Station, Unit Nos. 1 and 2
Docket No. 50-334, License No. DPR-66
Docket No. 50-412, License No. NPF-73
Unit No. 1, Cycle 14 and Unit No. 2, Cycle 9 Core Operating Limits
Report Updates**

Midcycle revisions to the Beaver Valley Power Station (BVPS) Unit Nos. 1 and 2 Core Operating Limits Report (COLR) are provided herein pursuant to Technical Specification (TS) 6.9.5.d. The COLR for each unit has been revised to incorporate TS relocations and other changes that result from the implementation of Amendment Nos. 239 and 120, "Revised Thermal Design Procedure," for the remainder of fuel cycle 14 and fuel cycle 9, for BVPS Unit Nos. 1 and 2, respectively. Amendment Nos. 239 and 120 were approved and issued by the NRC on July 20, 2001, and supplemented by NRC letter dated July 30, 2001. The affected COLR pages for Unit No. 1 are provided as Attachment 1, and the affected COLR pages for Unit No. 2 are provided as Attachment 2.

If you have any questions, please contact Mr. Thomas S. Cosgrove, Manager, Licensing at 724-682-5203.

Sincerely,



Lew W. Myers

Attachments:
As stated

c: Mr. L. J. Burkhart, Project Manager
Mr. D. M. Kern, Sr. Resident Inspector
Mr. H. J. Miller, NRC Region I Administrator
Mr. L. E. Ryan (BRP/DEP)

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ATTACHMENT 1

Beaver Valley Power Station, Unit No. 1
Core Operating Limits Report, Cycle 14, Revision 19

The following is a list of the affected pages:

4.1-7 (new)

4.1-8 (new)

4.1-9 (new)

BVPS-1
LICENSING REQUIREMENTS MANUAL

Specification 3.3.1.1 Reactor Trip System Instrumentation Setpoints, Table 3.3-1 Table Notations A and B

Overtemperature ΔT Setpoint Parameter Values:

<u>Parameter</u>	<u>Value</u>
Overtemperature ΔT reactor trip setpoint	$K1 \leq 1.259$
Overtemperature ΔT reactor trip setpoint T_{avg} coefficient	$K2 \geq 0.01655/^{\circ}F$
Overtemperature ΔT reactor trip setpoint pressure coefficient	$K3 \geq 0.000801/psia$
T_{avg} at RATED THERMAL POWER	$T' \leq 576.2^{\circ}F$
Nominal Pressurizer Pressure	$P' \geq 2250 psia$
Measured reactor vessel average temperature lead/lag time constants	$\tau_1 \geq 30 \text{ secs}$ $\tau_2 \leq 4 \text{ secs}$

$f(\Delta I)$ is a function of the indicated difference between top and bottom detectors of the power-range nuclear ion chambers; with gains to be selected based on measured instrument response during plant startup tests such that:

- (i) for $q_t - q_b$ between -36 percent and +15 percent, $f(\Delta I) = 0$ (where q_t and q_b are percent RATED THERMAL POWER in the top and bottom halves of the core respectively, and $q_t + q_b$ is total THERMAL POWER in percent of RATED THERMAL POWER).
- (ii) for each percent that the magnitude of $(q_t - q_b)$ exceeds -36 percent, the ΔT trip setpoint shall be automatically reduced by 2.08 percent of its value at RATED THERMAL POWER.
- (iii) for each percent that the magnitude of $(q_t - q_b)$ exceeds +15 percent, the ΔT trip setpoint shall be automatically reduced by 1.59 percent of its value at RATED THERMAL POWER.

Overpower ΔT Setpoint Parameter Values:

<u>Parameter</u>	<u>Value</u>
Overpower ΔT reactor trip setpoint	$K4 \leq 1.0916$
Overpower ΔT reactor trip setpoint T_{avg} rate/lag coefficient	$K5 \geq 0.02/^{\circ}F$ for increasing average temperature

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LICENSING REQUIREMENTS MANUAL

Overpower ΔT Setpoint Parameter Values (continued):

<u>Parameter</u>	<u>Value</u>
Overpower ΔT reactor trip setpoint T_{avg} heatup coefficient	$K6 \geq 0.00128/^\circ F$ for $T > T''$ $K6 = 0/^\circ F$ for $T \leq T''$
T_{avg} at RATED THERMAL POWER	$T'' \leq 576.2^\circ F$
Measured reactor vessel average temperature rate/lag time constant	$\tau_3 \geq 10$ secs

Specification 3.2.5 DNB Parameters

<u>Parameter</u>	<u>Indicated Value</u>
Reactor Coolant System T_{avg}	$T_{avg} \leq 580.0^\circ F^{(1)}$
Pressurizer Pressure	Pressure ≥ 2215 psia ⁽²⁾
Reactor Coolant System Total Flow Rate	Flow $\geq 267,400$ gpm ⁽³⁾

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- (1) The Reactor Coolant System (RCS) T_{avg} value includes allowances for rod control operation and verification via control board indication.
 - (2) The pressurizer pressure value includes allowances for pressurizer pressure control operation and verification via control board indication.
 - (3) The RCS total flow rate includes allowances for normalization of the cold leg elbow taps with a beginning of cycle precision RCS flow calorimetric measurement and verification on a periodic basis via control board indication.

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LICENSING REQUIREMENTS MANUAL

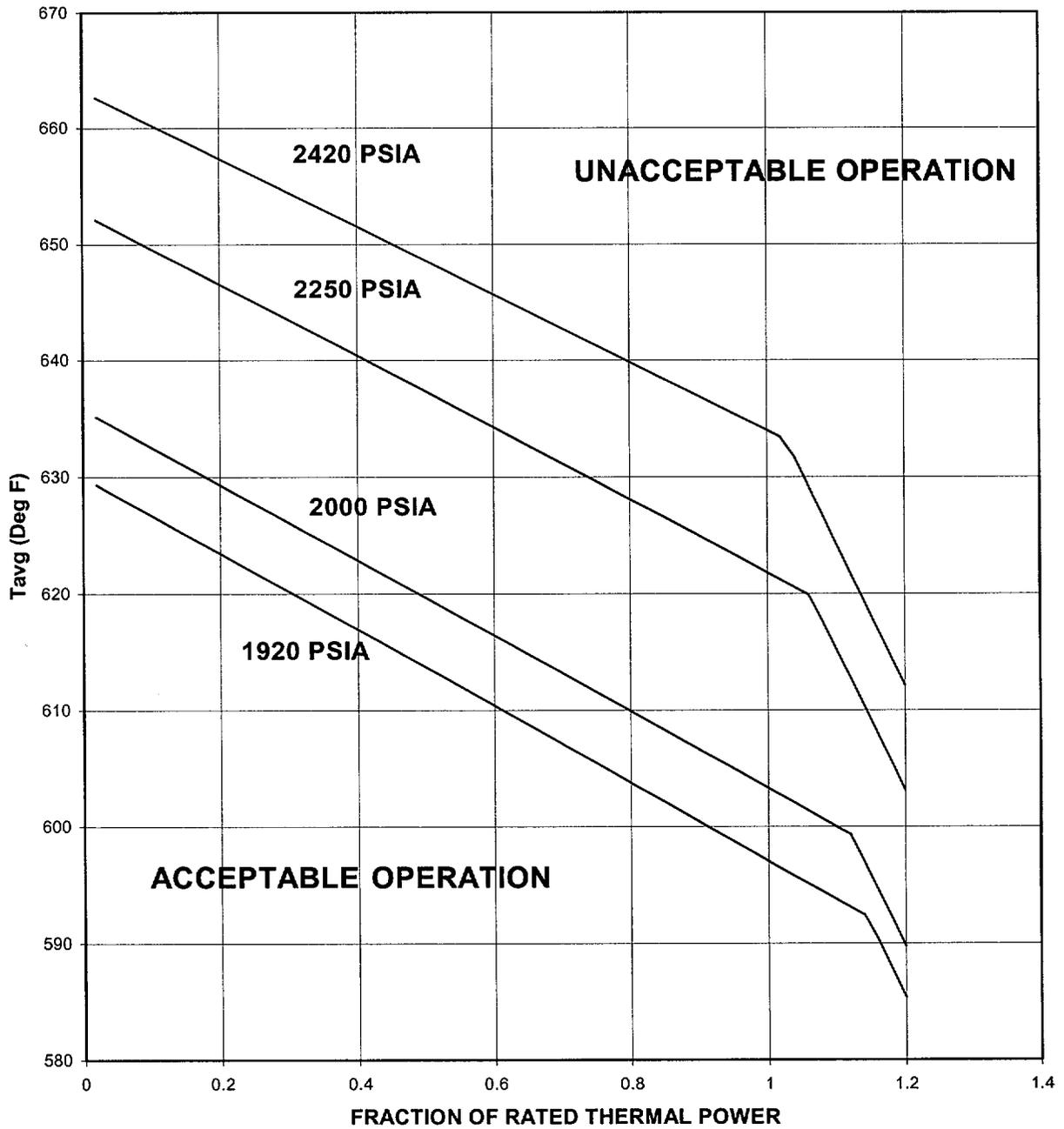


Figure 4.1-5
REACTOR CORE SAFETY LIMIT
THREE LOOP OPERATION
(Technical Specification Safety Limit 2.1.1)

ATTACHMENT 2

Beaver Valley Power Station, Unit No. 2
Core Operating Limits Report, Cycle 9, Revision 19

The following is a list of the affected pages:

4.1-7 (new)

4.1-8 (new)

4.1-9 (new)

BVPS-2
LICENSING REQUIREMENTS MANUAL

Specification 3.3.1.1 Reactor Trip System Instrumentation Setpoints, Table 3.3-1 Table Notations A and B

Overtemperature ΔT Setpoint Parameter Values:

<u>Parameter</u>	<u>Value</u>
Overtemperature ΔT reactor trip setpoint	$K1 \leq 1.311$
Overtemperature ΔT reactor trip setpoint T_{avg} coefficient	$K2 \geq 0.0183/^\circ F$
Overtemperature ΔT reactor trip setpoint pressure coefficient	$K3 \geq 0.00082/psia$
T_{avg} at RATED THERMAL POWER	$T' \leq 576.2^\circ F$
Nominal pressurizer pressure	$P' \geq 2250 \text{ psia}$
Measured reactor vessel ΔT lead/lag time constants	$\tau_1 \geq 8 \text{ sec}$ $\tau_2 \leq 3 \text{ sec}$
Measured reactor vessel ΔT lag time constant	$\tau_3 \leq 0 \text{ sec}$
Measured reactor vessel average temperature lead/lag time constants	$\tau_4 \geq 30 \text{ sec}$ $\tau_5 \leq 4 \text{ sec}$
Measured reactor vessel average temperature lag time constant	$\tau_6 \leq 0 \text{ sec}$

$f(\Delta I)$ is a function of the indicated difference between top and bottom detectors of the power-range nuclear ion chambers; with gains to be selected based on measured instrument response during plant startup tests such that:

- (i) For $q_t - q_b$ between -32% and +11%, $f_1(\Delta I) = 0$, where q_t and q_b are percent RATED THERMAL POWER in the top and bottom halves of the core respectively, and $q_t + q_b$ is total THERMAL POWER in percent of RATED THERMAL POWER;
- (ii) For each percent that the magnitude of $q_t - q_b$ exceeds -32%, the ΔT Trip Setpoint shall be automatically reduced by 1.46% of its value at RATED THERMAL POWER; and
- (iii) For each percent that the magnitude of $q_t - q_b$ exceeds +11%, the ΔT Trip Setpoint shall be automatically reduced by 1.56% of its value at RATED THERMAL POWER.

Overpower ΔT Setpoint Parameter Values:

<u>Parameter</u>	<u>Value</u>
Overpower ΔT reactor trip setpoint	$K4 \leq 1.094$

BVPS-2
LICENSING REQUIREMENTS MANUAL

Overpower ΔT Setpoint Parameter Values (continued):

<u>Parameter</u>	<u>Value</u>
Overpower ΔT reactor trip setpoint T_{avg} rate/lag coefficient	$K5 \geq 0.02/^{\circ}F$ for increasing average temperature $K5 = 0/^{\circ}F$ for decreasing average temperature
Overpower ΔT reactor trip setpoint T_{avg} heatup coefficient	$K6 \geq 0.0012/^{\circ}F$ for $T > T''$ $K6 = 0/^{\circ}F$ for $T \leq T''$
T_{avg} at RATED THERMAL POWER	$T'' \leq 576.2^{\circ}F$
Measured reactor vessel ΔT lead/lag time constants	$\tau_1 \geq 8$ sec $\tau_2 \leq 3$ sec
Measured reactor vessel ΔT lag time constant	$\tau_3 \leq 0$ sec
Measured reactor vessel average temperature lag time constant	$\tau_6 \leq 0$ sec
Measured reactor vessel average temperature rate/lag time constant	$\tau_7 \geq 10$ sec

Specification 3.2.5 DNB Parameters

<u>Parameter</u>	<u>Indicated Value</u>
Reactor Coolant System T_{avg}	$T_{avg} \leq 579.9^{\circ}F^{(1)}$
Pressurizer Pressure	Pressure ≥ 2214 psia ⁽²⁾
Reactor Coolant System Total Flow Rate	Flow $\geq 267,200$ gpm ⁽³⁾

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- (1) The Reactor Coolant System (RCS) T_{avg} value includes allowances for rod control operation and verification via control board indication.
 - (2) The pressurizer pressure value includes allowances for pressurizer pressure control operation and verification via control board indication.
 - (3) The RCS total flow rate includes allowances for normalization of the cold leg elbow taps with a beginning of cycle precision RCS flow calorimetric measurement and verification on a periodic basis via plant process computer. If periodic verification of flow rate is performed via control board indication, the required flow value is $\geq 267,400$ gpm.

BVPS-2
LICENSING REQUIREMENTS MANUAL

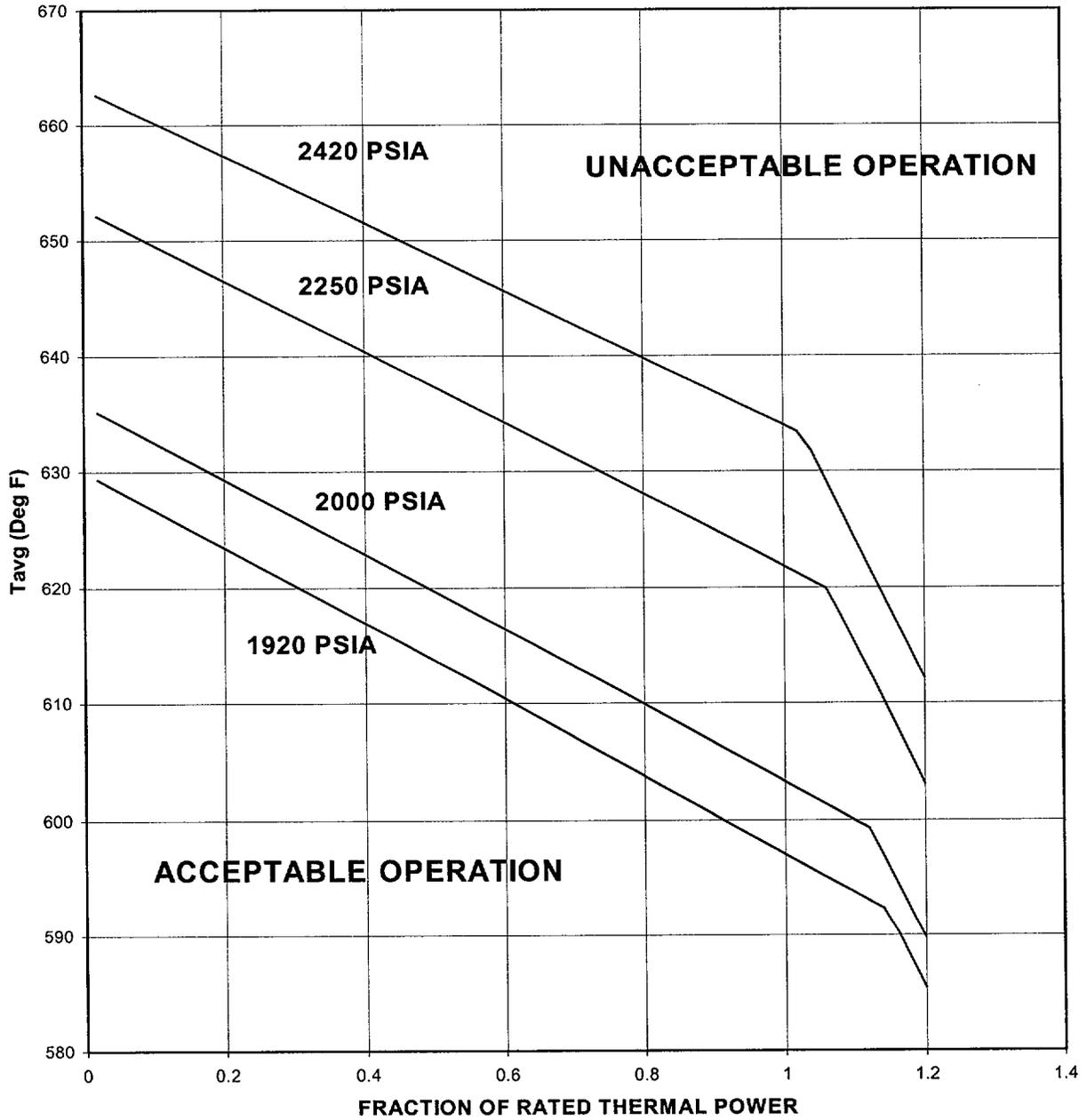


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REACTOR CORE SAFETY LIMIT
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