

APPLICATION FOR AMENDMENT

TO

LICENSE NO. NPF-3


FOR

DAVIS-BESSE NUCLEAR POWER STATION

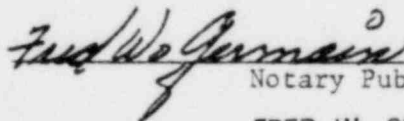
UNIT NO. 1

Enclosed are forth-three (43) copies of the requested changes to the Davis-Besse Nuclear Power Station Unit No. 1 Technical Specifications, Appendix A to License No. NPF-3, together with the Safety Evaluation for the requested change.

By


Vice President, Facilities Development

Sworn to and subscribed before me this twenty-third day of October, 1978.



Notary Public

FRED W. GERMAIN
Notary Public — State of Ohio
My Commission Expires Oct. 30, 1982

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DB-1

REQUESTED CHANGE TO
THE DAVIS-BESSE NUCLEAR POWER STATION
UNIT NO. 1
TECHNICAL SPECIFICATIONS
(Appendix A to License No. NPF-3)

The following attached pages have been modified to show the requested changes:

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Page 3/4 2-14
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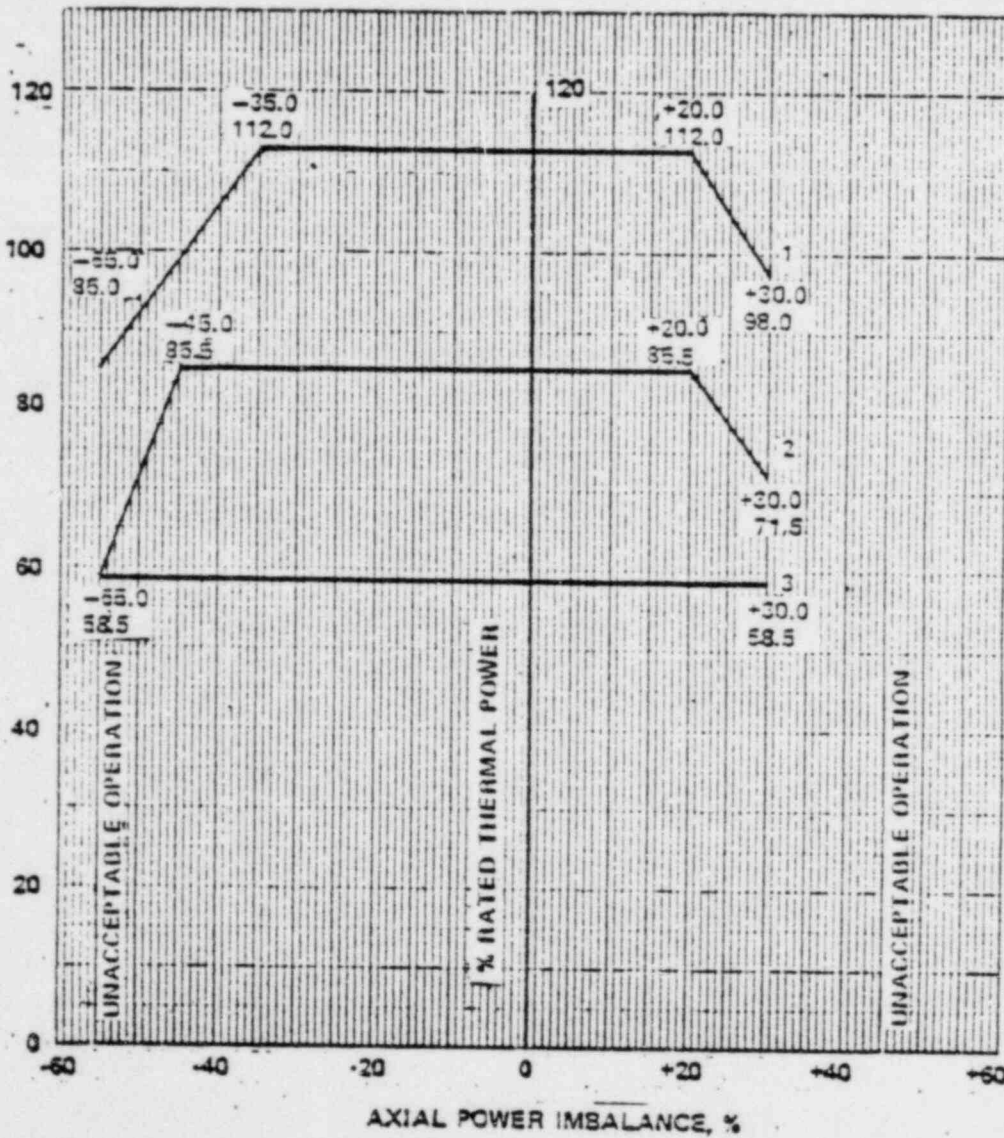
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Attachments

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POOR ORIGINAL



CURVE	REACTOR COOLANT FLOW (GPM)
1	387,200
2	290,100
3	191,000

Figure 2.1-2 Reactor Core Safety Limit

TABLE 2.2-1

REACTOR PROTECTION SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	TRIP SETPOINT	ALLOWABLE VALUES
1. Manual Reactor Trip	Not Applicable	Not Applicable
2. High Flux	< 105.5% of RATED THERMAL POWER with four pumps operating	< 105.6% of RATED THERMAL POWER with four pumps operating#
	< ^{78.3%} 80.7% of RATED THERMAL POWER with three pumps operating	< ^{78.4%} 80.8% of RATED THERMAL POWER with three pumps operating#
	< ^{50.6%} 53.0% of RATED THERMAL POWER with one pump operating in each loop	< ^{50.7%} 53.1% of RATED THERMAL POWER with one pump operating in each loop#
3. RC High Temperature	< 619°F	< 619.08°F#
4. Flux - Δ Flux-Flow(1)	Trip Setpoint not to exceed the Limit Line of Figure 2.2-1.	Allowable Values not to exceed the limit line of Figure 2.2-2.
5. RC Low Pressure(1)	> 1985 psig	> 1984.0 psia* > 1976.5 psig**
6. RC High Pressure	< 2355 psig	< 2356.0 psig* < 2363.5 psig**
7. RC Pressure-Temperature(1)	> (16.25 T _{out} °F - 7873) psig	> (16.25 T _{out} °F - 7873.64) psig#

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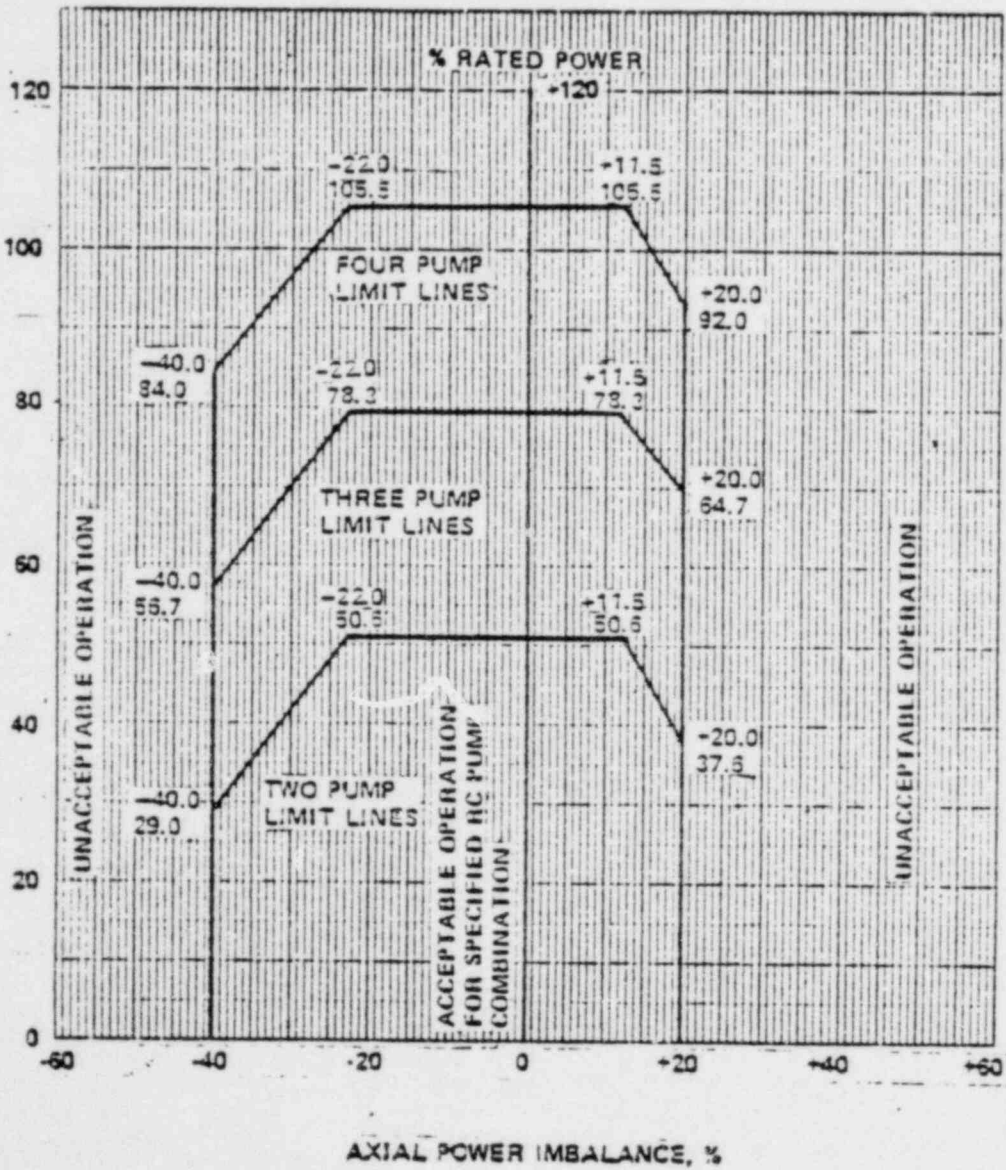


Figure 2.2-1 Trip Setpoint for Flux- Δ Flux-Flow

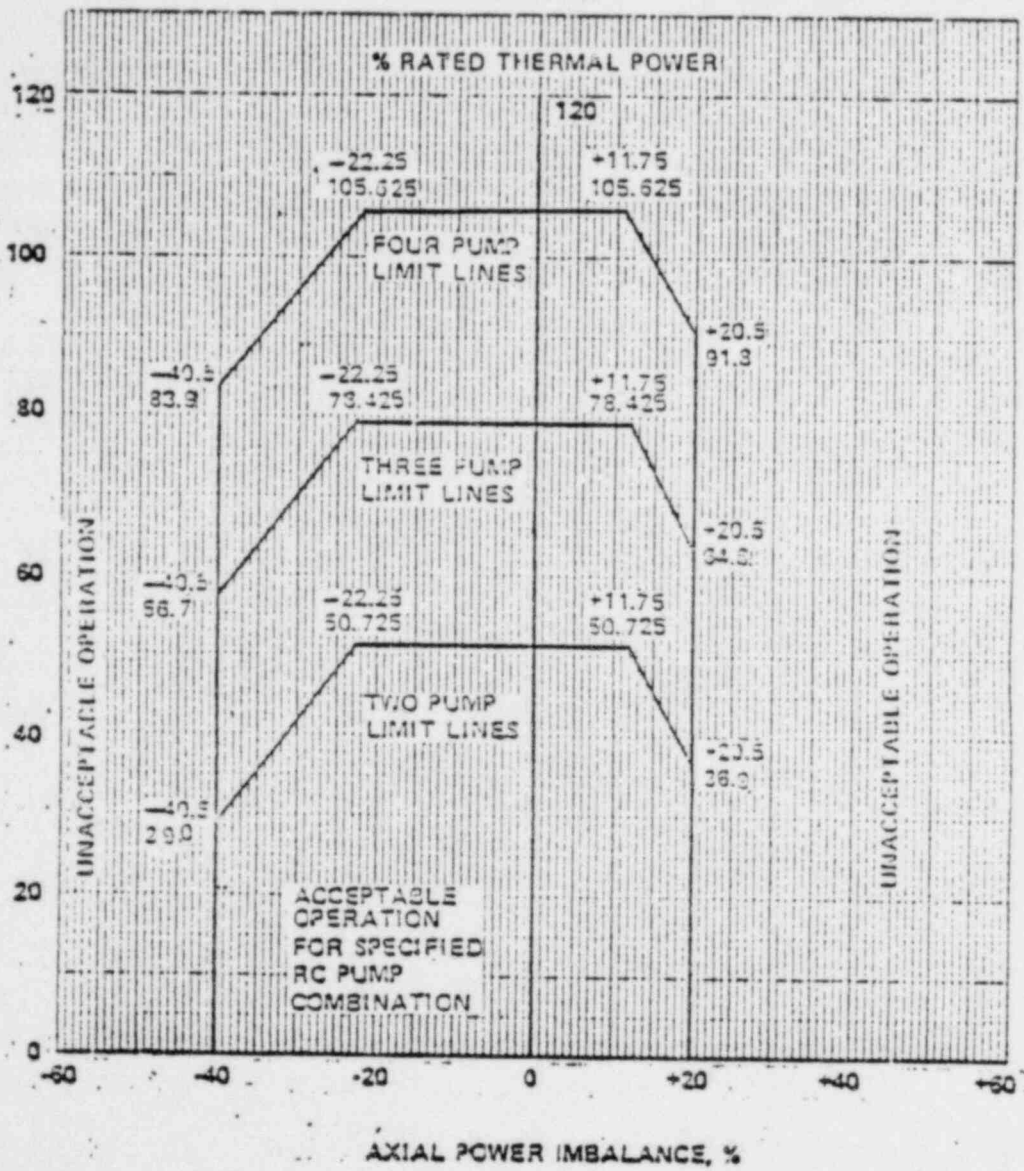


Figure 2.2-2 Allowable Value for Flux- Δ Flux-Flow

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LIMITING SAFETY SYSTEM SETTINGS

BASES

RC High Temperature

The RC High Temperature trip $\leq 619^{\circ}\text{F}$ prevents the reactor outlet temperature from exceeding the design limits and acts as a backup trip for all power excursion transients.

Flux - Δ Flux-Flow

The power level trip setpoint produced by the reactor coolant system flow is based on a flux-to-flow ratio which has been established to accommodate flow decreasing transients from high power where protection is not provided by the High Flux/Number of Reactor Coolant Pumps On Trips.

The power level trip setpoint produced by the power-to-flow ratio provides both high power level and low flow protection in the event the reactor power level increases or the reactor coolant flow rate decreases. The power level setpoint produced by the power-to-flow ratio provides overpower DNB protection for all modes of pump operation. For every flow rate there is a maximum permissible power level, and for every power level there is a minimum permissible low flow rate. Typical power level and low flow rate combinations for the pump situations of Table 2.2-1 are as follows:

1. Trip would occur when four reactor coolant pumps are operating if power is 105.5% and reactor flow rate is 100%, or flow rate is 94.6% and power level is 100%.
2. Trip would occur when three reactor coolant pumps are operating if power is 78.3% and reactor flow rate is 74.7%, or flow rate is 70.9% and power is 75%.
3. Trip would occur when one reactor coolant pump is operating in each loop (total of two pumps operating) if the power is 50.6% and reactor flow rate is 49.0% or flow rate is 46.3% and the power level is 49.0%.

For safety calculations the maximum calibration and instrumentation errors for the power level were used.

TABLE 3.2-1

DNB MARGIN

Parameter	<u>LIMITS</u>		
	Four Reactor Coolant Pumps Operating	Three Reactor Coolant Pumps Operating	One Reactor Coolant Pump Operating in each Loop
Reactor Coolant Hot Leg Temperature, T_{HL} °F	≤ 610	≤ 610 (1)	≤ 610
Reactor Coolant Pressure, psig. (2)	≥ 2062.7	≥ 2058.7 (1)	≥ 2091.4
Reactor Coolant Flow Rate, gpm (3)	$\geq 396,880$	$\geq 297,340$	$\geq 195,760$

(1) Applicable to the loop with 2 Reactor Coolant Pumps Operating.

(2) Limit not applicable during either a THERMAL POWER ramp increase in excess of 5% of RATED THERMAL POWER per minute or a THERMAL POWER step increase of greater than 10% of RATED THERMAL POWER.

(3) These flows include a flow rate uncertainty of 2.5%.

3/4.4 REACTOR COOLANT SYSTEM

REACTOR COOLANT LOOPS

LIMITING CONDITION FOR OPERATION

3.4.1 Both reactor coolant loops and both reactor coolant pumps in each loop shall be in operation.

APPLICABILITY: As noted below, but excluding MODE 6.*

ACTION:

MODES 1 and 2:

a. With one reactor coolant pump not in operation, STARTUP and POWER OPERATION may be initiated and may proceed provided THERMAL POWER is restricted to less than 78.3% of RATED THERMAL POWER and within 4 hours the setpoints for the following trips have been reduced to the values specified in Specification 2.2.1 for operation with three reactor coolant pumps operating: K

1. High Flux
2. Flux- Δ Flux-Flow

b. With one reactor coolant pump in each loop not in operation, STARTUP and POWER OPERATION may be initiated and may proceed provided THERMAL POWER is restricted to less than 50.6% of RATED THERMAL POWER and within 4 hours the setpoints for the following trips have been reduced to the values specified in Specification 2.2.1 for operation with one reactor coolant pump operating in each loop: K

1. High Flux
2. Flux- Δ Flux-Flow

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* See Special Test Exception 3.10.3.