ATTACHMENT A

Revise the Technical Specification pages as follows:

Remove	Insert
4.5-3	4.5-3
4.5-8 thru 4.5-10	4.5-8 thru 4.5-10
-----	4.5-11

b. Acceptable levels of performance for the pumps shall be that the pumps start, operate, and develop the minimum discharge pressure for the flows listed in the table below:

PUMPS	RECYCLE FLOW RATE	DISCHARGE PRESSURE	Notes
Containment Spray Pumps	35 gpm	240 psig	
Residual Heat Removal Pumps	[200 gpm] 450 gpm	[140 psig] 138 psig	(1)
Safety Injection Pumps	[50 gpm] 150 gpm	[1420 psig] 1356 psig	(2)

Table 4.5-1

Notes

(1) Items in square brackets are effective until the installation of the new residual heat removal minimum flow recirculation system.

(2) Items in square brackets are effective until installation of the new safety injection minimum flow recirculation system.

4.5.2.2 Valves

a. Except during cold or refueling shutdowns the spray additive valves shall be tested at intervals not to exceed one month. With the pumps shut down and the valves upstream and downstream and verification made that the components receive the safety injection in the proper sequence. The test demonstrates the operation of the valves, pump circuit breakers, and automatic circuitry.[1]

During reactor operation, the instrumentation which is depended on to initiate safety injection and containment spray is generally checked daily and the initiating circuits are tested monthly. In addition, the active components (pumps and valves) are to be tested monthly to check the operation of the starting circuits and to verify that the pumps are in satisfactory running order and develop the minimum required pressure to meet accident conditions.[2] The minimum discharge pressure values listed in Table 4.5-1 are based on an assumed degradation of the pump head-capacity (characteristic) curve adjusted to water temperature of 60°F as follows:

Containment Spray Pumps	5%*
Residual Heat Removal Pumps	5%*
Safety Injection Pumps	3%*

*Percentage is based on the head at the best efficiency point of flow.

The test interval of one month is based on the judgement that more frequent testing would not significantly increase the reliability (i.e., the probability that the component would operate when required) and would result in increased wear over long periods of time.

Other systems that are also important to the emergency cooling function are the accumulators, the component cooling system, the service water system and the containment fan coolers. The accumulators are a passive safeguard. In accordance with the specifications, the water volume and pressure in the accumulators are checked periodically. The other systems mentioned operate when the reactor is in operation and by these means are continuously monitored for satisfactory performance. The reactor coolant drain tank pumps operate intermittently during reactor operation, and thus are also monitored for satisfactory performance.

The air filtration portion of the containment air recirculation system is a passive safeguard which is isolated from the cooling air flow during normal reactor operation. Hence the charcoal should have a long useful lifetime. The filter frames that house the charcoal are stainless steel and should also last indefinitely. The pressure drop, filter efficiency, and valve operation test frequencies will assure that the system can operate to meet its design function under accident conditions. As the adsorbing charcoal is normally isolated, the test schedule, related to hours of operation as well as elapsed time, will assure that it does not degrade below the required adsorption efficiency. The test conditions for charcoal sample adsorbing efficiency are those which might be encountered under an accident situation.[3]

The control room air treatment system is designed to filter the control room atmosphere (recirculation and intake air) during control room isolation conditions. HEPA filters are installed before the charcoal filters to remove particulate matter and prevent clogging of the iodine adsorbers. The charcoal filters reduce the airborne radioiodine in the control room. Bypass leakage must be at a minimum in order for these filters to perform their designed function. If the performances are as specified the calculated doses will be less than those analyzed.[4]

Retesting of the post accident charcoal system or the control room emergency air treatment system in the event of painting, fire, or chemical release is required only if the system is operating and is providing filtration for the area in which the painting, fire, or chemical release occurs.

Testing of the air filtration systems will be, to the extent it can, given the configuration of the systems, in accordance with ANSI N510-1975, "Testing of Nuclear Air-Cleaning Systems."

<u>References</u>:

(1) UFSAR Section 6.3.5.2

(2) UFSAR Figures 15.6-12 and 15.6-13

(3) UFSAR Section 6.5.1.2.4

(4) UFSAR Section 6.4.3.1

ATTACHMENT B

Plant modifications planned for the Spring 1989 Refueling Outage will modify the existing minimum flow recirculation systems for the residual heat removal (RHR) and safety injection (SI) pumps. These modifications are being implemented in order to offer an increased margin of pump protection during conditions which require pump operation at minimum flow. These conditions would exist when the reactor coolant system (RCS) pressure is higher than the shutoff head of the pumps. The new design minimum flow will be increased above the flow that presently exists. This increased recirculation flow capability will provide the opportunity to conduct the required monthly periodic tests at a higher pump flow rate than is presently incorporated in Table 4.5-1 of the Technical Specifications and which is reflected in the pump inservice test program.

A detailed description of the planned plant modifications and evaluations of the benefits of these changes was provided to the NRC in our response to Bulletin 88-04, Potential Safety-Related Pump Loss, dated July 7, 1988 and which is incorporated as a part of this document. Increasing the surveillance test flowrate for periodic pump testing will reduce the potential for pump internal accelerated wear due to low flow operation. RHR test flow is proposed to be increased from 200 gpm to 450 gpm. SI test flow is proposed to be increased from 50 gpm to 150 gpm. The detailed changes are listed on Table 1.

The proposed "recycle flow rate" for the RHR pumps will be able to be achieved by utilizing the new minimum flow recirculation line planned as part of the RHR system modification. The "recycle flow rate" for the SI pumps will be able to be achieved by utilizing the existing test line combined with the new minimum flow recirculation line as part of the SI plant modification described in our response to Bulletin 88-04. The proposed flow rates will be comparable to the minimum flow values recommended by the pump manufacturers for continuous pump operation. They also represent the maximum flows obtainable during power operation. The surveillance test flowrates will be increased for the RHR pumps from 11% to 25% of best efficiency point of flow and for the SI pumps from 12% to 35% of best efficiency point of flow. Prior to the plant modifications being completed, the surveillance test flowrates and corresponding discharge pressures must remain as reflected in the current Technical Specifications.

The discharge pressure values in the Technical Specification corresponding to the recycle flow rates for RHR and SI need also be adjusted to account for the increase in test flowrate.

The new discharge pressure limits have been determined by applying a 5% degradation to the pump head-capacity (characteristic) curve for the RHR pumps and a 3% degradation to the SI characteristic curve. Pump characteristic curves are depicted on Figures 6.3-2 and 6.3-3 of the UFSAR. These percentages are based upon the pump developed head at the best efficiency point of flow. For example, the total developed head for the safety injection pump at the best efficiency point of 425 gpm is 2310 feet. The 3% degraded pump curve is generated by reducing the pump curve by 69.3 feet over the full range of flows. Similarly, the total developed head for the residual heat removal pump at the best efficiency point of 1800 gpm is 264 feet. The 5% degraded pump curve is generated by reducing the pump curve by 13.2 feet over the full range of flows.

The discharge pressure values represent the required action limits identified by IWP-3000, Section XI, 1977 Edition through summer 1978 addenda. The new discharge pressure limits have been established consistent with the basis used for the current pressures in the Technical Specification surveillance test table which are applicable to currently-established test flowrates. In essence, the new discharge pressure limits fall on the assumed performance degradation curves that have been established for the RHR and SI pumps. A pump can be judged acceptable based upon pressure verification at one point on this curve during the surveillance test. In this case, the test point is simply being readjusted further out on the degraded performance curve.

Hydraulic analyses have been performed confirming that discharge pressure values at or above the proposed limits will meet the requirements for system delivery under accident conditions as established by Figures 15.6-12 and 15.6-13 in the UFSAR. These analyses utilized the KYPIPE computer code developed by NUS Corporation for the emergency core cooling system for R.E. Ginna. This code has been validated in accordance with the approved Quality Assurance Program. The results of the analyses relating system delivery versus RCS pressure are shown plotted on the attached Figures 1 and 2. The curves show that required system delivery is achieved assuming the 5% degraded RHR pump performance curve (Figure 1) and the 3% degraded SI pump performance curve (Figure 2). The curves depicted represent the most conservative cases in terms of parameters utilized which limit the flow delivered to the RCS.

Table 1 depicts the specific Technical Specification changes.

In accordance with 10CFR50.91, these changes to the Technical Specifications have been evaluated to determine if the operation of the facility in accordance with the proposed amendment would:

1. involve a significant increase in the probability or consequences of an accident previously evaluated; or

2. create the possibility of a new or different kind of accident from any accident previously evaluated; or

3. involve a significant reduction in a margin of safety.

The proposed changes to the surveillance tests do not involve a significant change in the probability of an accident previously evaluated because the proposed changes are being made to improve operability of the components by reducing the potential for accelerated wear due to low flow operation during surveillance testing. The proposed changes do not involve a significant change in the consequences of accidents previously analyzed because the flow delivered to the RCS as a result of the increase in recirculation flow will remain above the required flow delivery curve which is utilized in the accident analysis.

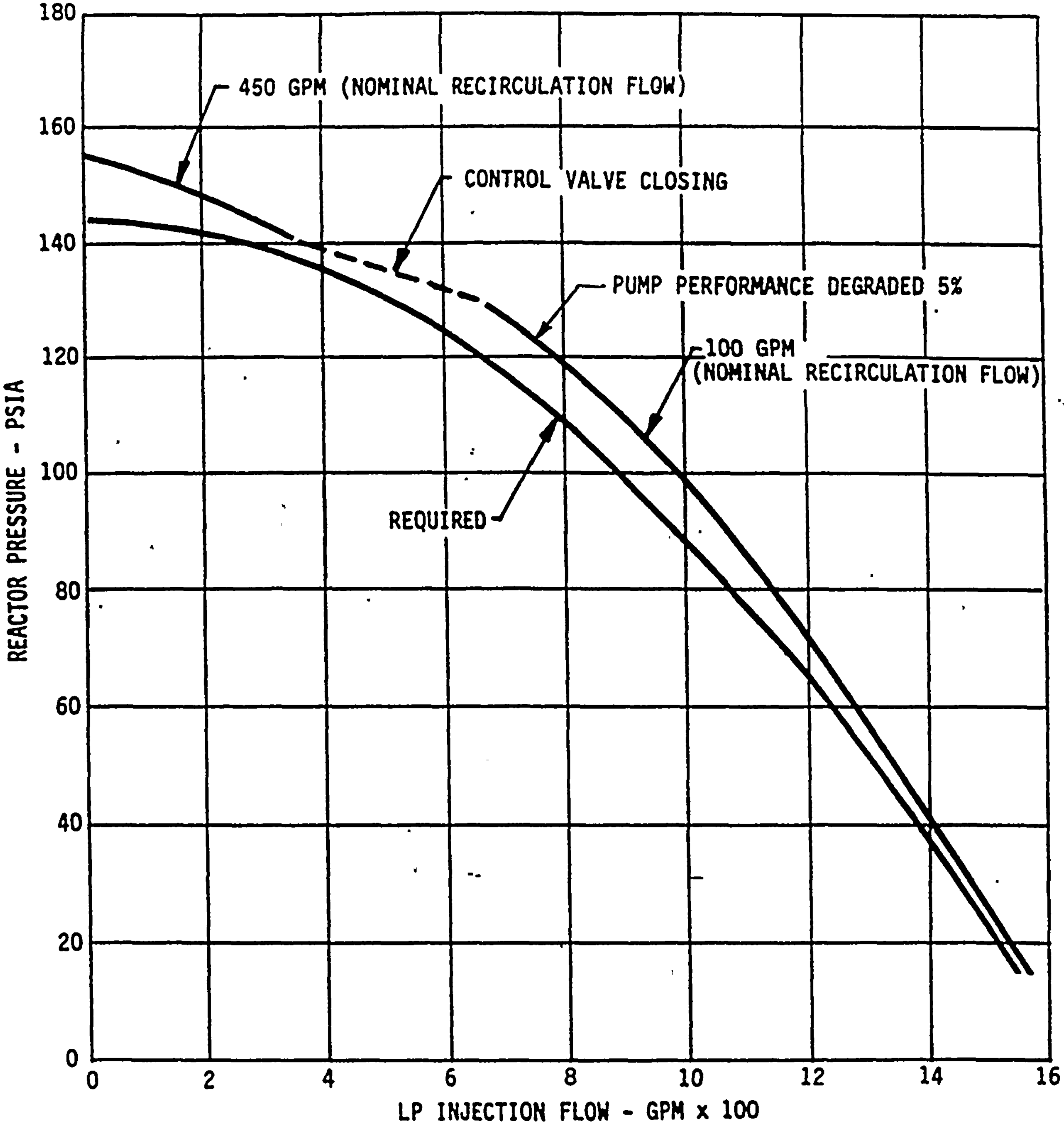
The proposed changes to the surveillance tests do not create the possibility of a new or different kind of accident from any previously evaluated because the proposed changes affect only the surveillance test requirement of the existing residual heat removal and safety injection pumps. The basis upon which the pumps are judged acceptable is not changed, that is, based upon not exceeding the maximum allowed degradation of the pump head-capacity curve that has been demonstrated to meet the required delivery curves, Figures 15.6-12 and 15.6-13 of the UFSAR.

The proposed changes to the surveillance tests do not involve a significant reduction in the margin of safety because the increased recirculation test flowrate will, in fact, increase safety margins by reducing the potential for accelerated wear due to operation at low flows. Surveillance testing for the safety injection pumps encompasses the vast majority of their expected yearly operating time and therefore the increase in the test flowrate from 12% to 35% of best efficiency point of flow will be equivalent to the minimum flow recommended by the pump manufacturer for continuous pump operation. The residual heat removal pumps operate during plant cooldowns and refueling operations at flowrates well beyond the surveillance test flowrate. The yearly operating time for these pumps while spent in the surveillance test mode is small compared to the total expected operating time, in the order of 5%. Nevertheless, increasing the test flowrate from 11% to 25% of best efficiency point of flow will have a positive long term effect.

The basis for Ginna Technical Specifications related to SI and RHR surveillance testing flowrates and discharge pressure is the assumed minimum pump delivery characteristics used in the UFSAR Chapter 15 accident analyses. Because all such assumptions remain unchanged as a result of this proposed license amendment, the overall margin of safety is not reduced, and it does not involve an unreviewed safety question.

Therefore, Rochester Gas and Electric submits that the issues associated with this Amendment request are outside the criteria of 10CFR50.91 and a no significant hazards finding is warranted.

FIGURE 1 - LOW PRESSURE INJECTION FLOW



NOTES:

1. RHR PUMP "B" VIA MOV852B INJECTION PATH.
2. RHR PUMP PERFORMANCE DEGRADED 5%.
3. RHR PUMP SUCTION HEAD = 15% RWST LEVEL.
4. REQUIRED FLOW BASED ON UFSAR FIGURE 15.6-13.

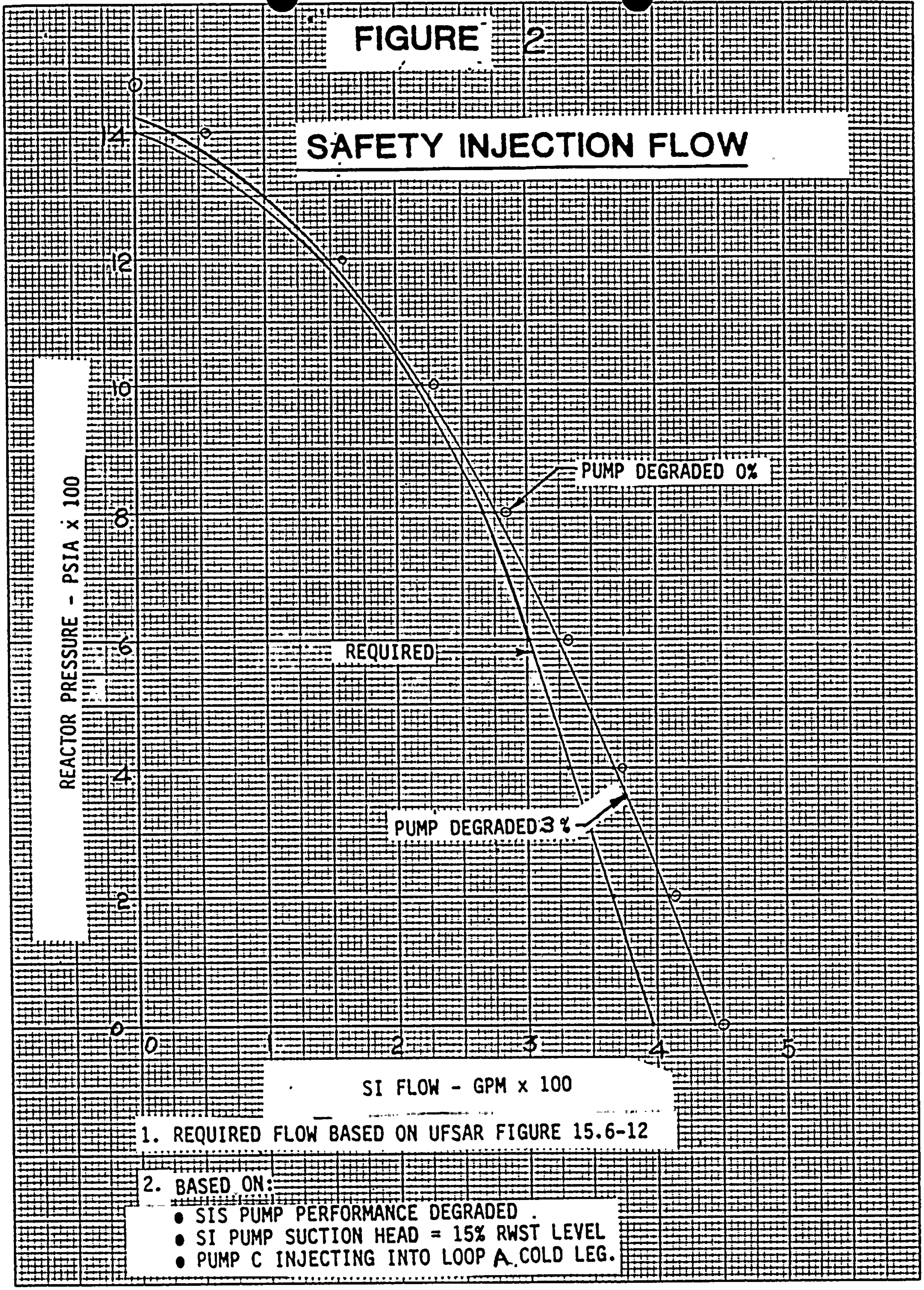


FIGURE 2
SAFETY INJECTION FLOW
REACTOR PRESSURE - PSIA x 100
14
12
10
8
6
4
2
0
0
1
2
3
4
5
SI FLOW - GPM x 100
PUMP DEGRADED 0%
REQUIRED
PUMP DEGRADED 3%
1. REQUIRED FLOW BASED ON UFSAR FIGURE 15.6-12
2. BASED ON:
• SIS PUMP PERFORMANCE DEGRADED
• SI PUMP SUCTION HEAD = 15% RWST LEVEL
• PUMP C INJECTING INTO LOOP A COLD LEG.