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HINTZ,D.C. Wisconsin Public Service Corp.
RECIP.NAME RECIPIENT AFFILIATION
DAVIS,A.B. Region 3, Ofc of the Director

SUBJECT: Provides addl info re implementation of leakage monitoring program,per NRC Bulletin 88-002.

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April 13, 1988

Mr. A. B. Davis
Region III
U.S. Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, IL 60137

Dear Mr. Davis:

Docket 50-305
Operating License DPR-43
Kewaunee Nuclear Power Plant
Additional Information Regarding NRC Bulletin No. 88-02

By letter dated April 4, 1988 (reference 1), Wisconsin Public Service Corporation (WPSC) provided a description of our enhanced primary to secondary leak rate monitoring program as required by NRC Bulletin 88-02. During a telephone conversation with NRC staff members on April 4, 1988 additional information was requested regarding the WPSC method of implementing the leakage monitoring program. This letter provides the requested information.

To clarify the program described in reference 1, WPSC will require increased frequency of air ejector sampling and primary to secondary leak rate determinations as primary to secondary leakage increases. When the R-15 monitor indicates an upward trend whether by observation or alarm we will implement our leak rate calculation procedure (RC-C-88) to determine the leak rate. If the leak rate is determined to be less than 10 gallons per day and remains stable, we will continue to perform the required sample acquisition and analysis on a weekly basis. If the leak rate is determined to be between 10 and 40 gallons per day, we will take condenser air ejector samples and implement the leak rate determination daily. If the calculated leakage rate is between 40 and 80 gallons per day, air ejector sampling and leak rate determinations will be performed once every eight (8) hours. If the leak rate is greater than 80 gallons per day we will perform the sampling and leak rate calculations once every four (4) hours. A summary of the frequency of leak rate determinations is presented in Table 1.

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As discussed in reference 1 the results of these leak rate calculations will be utilized in conjunction with figure 1 of the bulletin to determine the amount of time available before we would need to start a power reduction to a level of 50 percent power or less. Operations personnel will be informed of the potential for power reduction based on projected leakage increases and will be updated on power reduction projections periodically. These updates will be based on the results of the leak rate determinations conducted at the aforementioned frequencies.

These additional measures which incorporate increased frequency of leak rate determinations will provide assurance that the plant is at or below the 50 percent power level five hours before a tube rupture is projected to occur. In addition the increased frequency of leak rate determination will ensure that the power reduction time limits are appropriately revised should the leak rate increase at a rate greater than or less than that predicted by the curve in figure 1 of the bulletin. An example scenario which presents the implementation of this program is included in Table 2. It should be noted that the actions presented in the example are for information only. It is anticipated that our actions would be more conservative than those presented in the example.

In summary, administrative limits will be incorporated into plant procedures which require increased frequency of leak rate determinations as primary to secondary leakage increases. The program described in reference 1 will be implemented to determine the amount of time available prior to initiating a power reduction to 50 percent or less. The projected time for power reduction will be revised periodically based on the results of the more frequently implemented leak rate calculations. The combination of our increased leak rate calculation frequencies and the program to calculate time available prior to power reduction will ensure that the plant is at or below the 50 percent power level five hours before the tube rupture is projected to occur as required by the bulletin.

As discussed in item C.1 of the bulletin, the program described in reference 1 as clarified by this letter is an interim compensatory measure which will be implemented pending review and approval of the detailed evaluation required by item C.2 of the bulletin.

Very Truly Yours,

D.C. Hintz
Vice President - Nuclear Power

DSN/jep

cc - US NRC Document Control Desk
Mr. Robert L. Nelson, US NRC

Subscribed and Sworn to
Before Me This 13th Day
of April 1988

Darlene R. Yanda
Notary Public, State of Wisconsin

My Commission Expires:
06-24-90

Table 1

Leak Rate Determination Frequency

as a Function of Leak Rate

Actual Leak Rate (L) Determined	Required Frequency of Leak Rate Determination (RC-C-88)
$L < 10$ gallons per day	Weekly
$10 \leq L < 40$ gallons per day	Daily
$40 \leq L < 80$ gallons per day	Once every 8 hours
≥ 80 gallons per day	Once every 4 hours

Table 2

Example Scenario

Time (Hours)	Actual Leak Rate (GPD)	Action
T	12	Upon actuation of R-15 alarm or observation of a leak rate increase, perform leak rate calculation and determine leakage is 12 GPD. Increase leak rate determination frequency to daily.
T+24	20	Leak rate calculation determines that leakage is 20 GPD. Using Figure 1 we can determine that we have 60 hours before we need to be at 50% power or less. The 60 hours is determined by the time at which we must be at 50% power level or less on Figure 1 (90 hours) minus the time at which 20 GPD appears on the figure (30 hours). Operations would be informed that a shutdown from 100% power at a rate of 1/4% per hour would need to commence 57 2/3 hours from the time of the leak rate calculation. This would ensure that the plant was at 50% power or below 5 hours prior to the projected tube rupture. Next leak rate calculation required within 24 hours.
T+48	30	Leak rate calculation determines that leakage is 30 GPD. Using Figure 1 we can determine that we have 40 hours (90-50) before we have to be at 50% power level or less. Operations personnel would be informed of the revised projection regarding power reduction. Next leak rate calculation required within 24 hours.
T+72	30	Leak rate calculation determines that leakage remains at 30 GPD. Using Figure 1 again we would inform operations personnel that the power reduction requirement is revised and that we have 40 hours before we need to be at 50% power level or less. Next leak rate calculation required within 24 hours.

Table 2 (Cont.)

Example Scenario

Time (Hours)	Actual Leak Rate (GPD)	Action
T+96	30	Same as previous action. Update operations personnel on adjusted power reduction projection. Next leak rate calculation required within 24 hours.
T+120	50	Leak rate calculation determines that leakage is 50 GPD. Using Figure 1 we can determine that we have 25 hours (90-65) before we need to be at 50% power level or below. Next leak rate calculation required within 8 hours.
T+128	79	Leak rate calculation determines that leakage is 79 GPD. Using Figure 1 we can determine that we have 14 hours (9D-76) before we need to be at 50% power level or below. Next leak rate calculation required within 8 hours.
T+136	90	Leak rate calculation determines that leakage is 90 GPD. Using Figure 1 we can determine that we have 12 hours (90-78) before we need to be at 50% power level or below. Next leak rate calculation required within 4 hours.
T+140	90	Same as previous action. Update operations personnel on adjusted power reduction projection (i.e., 12 hours from time of most recent sample calculation). Next leak rate calculation required within 4 hours.
T+144	120	Leak rate calculation determines that leakage is 120 GPD. Using Figure 1 we can determine that we have 7 hours (90-83) before we need to be at 50% power level or below. Next leak rate calculation required within 4 hours.

Table 2 (Cont.)

Example Scenario

Time (Hours)	Actual Leak Rate (GPD)	Action
T+148	175	Leak rate calculation determines that leakage is 175 GPD. Using Figure 1 we can determine that we have 4 hours (90-86) before we need to be at 50% power level or below. Operations personnel commence power reduction at 1/4% per minute. This will ensure power reduction from 100% to 50% within the required 4 hours. Next leak rate calculation within 4 hours.
T+152	200	Maintain power level below 50%. Next leak rate calculation within 4 hours.
T+156	350	Maintain power level below 50%. Next leak rate calculation within 4 hours.
T+160	525	Enter Technical Specification Table 7.2 and the associated Limiting Condition for Operation (LCO).

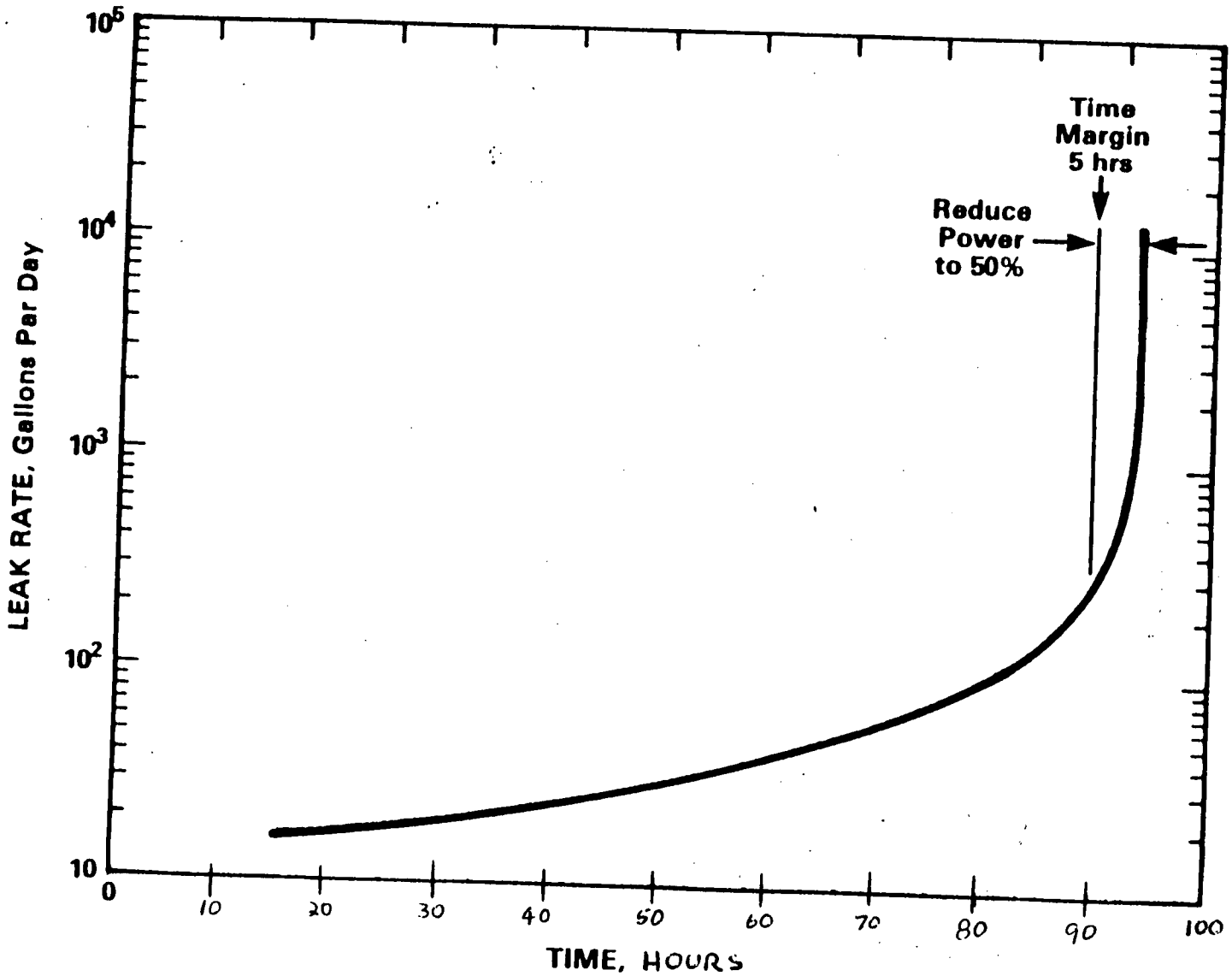

Figure 1 LEAK RATE VERSUS TIME