

Fort St. Vrain, Unit No. 1

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UNIT NUMBER (2)

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EVENT DESCRIPTION:

On December 29, 1985, at 1211 hours, with the reactor shutdown and "A" and "D" circulator's operating via condensate drive, the buffer-mid-buffer was actuated on "B" circulator. At the time of the actuation, "B" circulator was removed from service for Environmental Qualification (EQ) work, and was not required to be operable. "B" circulator's brake and seal were set and circulator auxiliaries (buffer helium and bearing water) were shutdown and isolated. Therefore, no automatic action occurred as a result of the actuation.

CAUSE DESCRIPTION:

The high buffer-mid-buffer ΔP logic actuation on "B" circulator was caused by entrance of water into the buffer-mid-buffer sense lines. A clearance issued to "B" circulator called for three fuses to be pulled. Pulling these fuses de-energized HV-2189-4 and HV-2189-7, both of which then failed open. This allowed bearing water from "A" circulator's high pressure (HP) separator to backflow through "B" circulator's helium/water drain into the buffer-mid-buffer sense lines (see Figure 1).

ANALYSIS:

As referenced in the Basis for Technical Specification LCO 4.4.1, circulator trip inputs (Table 4.4-3) are equipment protection items which are tied to Two Loop Trouble PPS action through the Loop Shutdown system. These items are included in Table 4.4-3 because a malfunction could prevent a scram due to loss of the Two Loop Trouble scram input. At the time of the buffer-mid-buffer logic actuation, the reactor was already in a shutdown condition (all control rods fully inserted, all Control Rod Drive motor breakers open, all control rod brakes de-energized), and "B" circulator was cleared out for EQ work. Thus, both the equipment protection function and the Two Loop Trouble scram function were already being met, and no automatic action occurred as a result of the actuation.

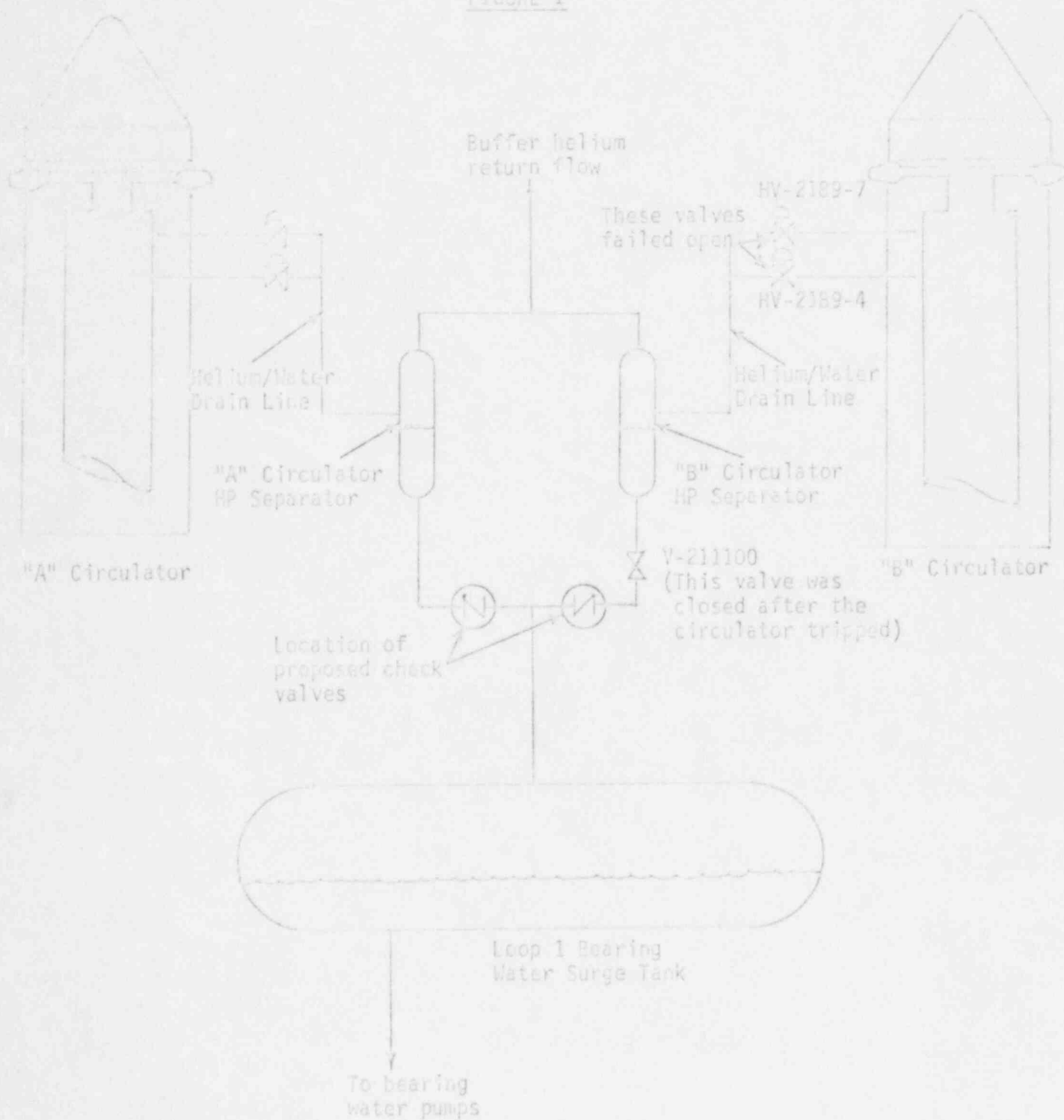
CORRECTIVE ACTION:

A manual isolation valve in "B" circulator's HP separator drain line (V-211100) was closed, thereby preventing backflow of water from "A" circulator's HP separator (see Figure 1). "B" circulator was brought to the self-turbining mode of operation on January 21, 1986.

A check valve will be installed in each HP separator drain line (see Figure 1). These check valves will prevent backflow of bearing water through the HP separator drains.

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FIGURE 1



LICENSEE EVENT REPORT (CONTINUED)

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January 28, 1986
Fort St. Vrain
Unit No. 1
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Docket No. 50-267

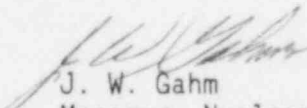
SUBJECT: Licensee Event Report
85-031, Final Report

REFERENCE: Facility Operating
License No. DPR-34

Gentlemen:

Enclosed please find a copy of Licensee Event Report
No. 50-267/85-031, Final, submitted per the requirements of
10 CFR 50.73(a)(2)(iv).

Sincerely,



J. W. Gahm
Manager, Nuclear Production

Enclosure

cc: Regional Administrator, Region IV
Attn.: Mr. E. H. Johnson, Chief
Reactor Projects Branch

cc: Director of Nuclear Reactor Regulation
Attn.: Mr. H. N. Berkow, Project Director
Standardization and Special
Project Directorate

cc: Director, MIPC

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