Public Service Company of Colorado
16805 Weld County Road 19 1/2, Platteville, Colorado 80651

November 7, 1979
Fort St. Vrain
Unit No. 1
P-79266

Mr. Karl V. Seyfrit, Director
Nuclear Regulatory Commission
Region IV
Office of Inspection and Enforcement
611 Ryan Plaza Drive
Suite 1000
Arlington, Texas 76012

REF: Facility Operating License
No. DPR-34

Docket No. 50-267

Dear Mr. Seyfrit:

Enclosed please find a copy of Reportable Occurrence Report No. 50-267/79-45/03-L-0, Final, submitted per the requirements of Technical Specification AC 7.5.2(b)2.

Also, please find enclosed one copy of the Licensee Event Report for Reportable Occurrence Report No. 50-267/79-45/03-L-0.

Very truly yours,

Don Warembourg
Manager, Nuclear Production

DW/alk

cc: Director, MIPC

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FORT ST. VRAIN NUCLEAR GENERATING STATION
PUBLIC SERVICE COMPANY OF COLORADO
16805 WELD COUNTY ROAD 19 1/2
PLATTEVILLE, COLORADO 80651

REPORT NO. 50-267/79-45/03-L-0

Final

IDENTIFICATION OF OCCURRENCE:

On four occasions between October 8, 1979, and October 15, 1979, total primary coolant oxidants (the sum of water, carbon monoxide, and carbon dioxide) exceeded 10 parts per million with average core outlet temperature greater than 1,200°F.

These occurrences constitute operation in a degraded mode permitted by LCO 4.2.10, and are reportable per Fort St. Vrain Technical Specification AC 7.5.2(b)2.

EVENT DESCRIPTION:

At 1400 hours on October 8, 1979, the plant was operating at approximately 38% thermal power and 120 MWe with an average core outlet temperature less than 1,200°F and total primary coolant oxidants greater than 10 ppm. A decision was made to increase reactor power in an attempt to facilitate moisture removal and between October 8, 1979, and October 15, 1979, degraded mode operations allowed by LCO 4.2.10 occurred on four occasions, as described below.

1. At approximately 1430 hours on October 8, 1979, average core outlet temperature exceeded 1,200°F for the first time since return to power on September 15, 1979. Reference Figure 1, point (1). At that time, the total primary coolant oxidant level was approximately 15.7 ppm. As reactor power and core outlet temperature were increased to facilitate moisture removal, primary coolant oxidant levels increased as moisture was allowed to outgas from the graphite in the core. A maximum primary coolant oxidant level of 24.0 ppm was reached at 0000 hours on October 9, 1979, with corresponding core outlet temperature of 1,320°F (reference Figure 1, point (2)). Total oxidant levels began a decreasing trend, with average core outlet temperature holding steady.

   At 0800 hours on October 9, 1979, it was decided to decrease reactor power to hold average core outlet temperature below 1,200°F until oxidant levels reached a value less than 10 ppm (reference Figure 1, point (3)).

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EVENT
DESCRIPTION (continued):

2. Because total oxidants had been less than 10 ppm since approximately 2300 hours October 9, 1979, reactor power was increased at 1340 hours on October 10, 1979. By 1400 hours, average core outlet temperature was greater than 1,200°F. As core outlet temperature was increased, the small amount of moisture remaining in the core was allowed to react with the graphite, resulting in increased primary coolant oxidant levels. At approximately 1700 hours on October 10, 1979, the plant again entered operation under a degraded mode of LCO 4.2.10 (reference Figure 1, point (4)). Following an initial increase due to the rise in core outlet temperature, oxidant levels decreased to less than 10 ppm at 0700 hours on October 11, 1979 (reference Figure 1, point (5)).

3. A small increase in moisture resulted in total primary coolant oxidants again exceeding 10 ppm at 1000 hours on October 11, 1979, (reference Figure 1, point (6)).

   After degraded mode operation of approximately 12 hours, sufficient moisture cleanup occurred that total primary coolant oxidants dropped below 10 ppm (reference Figure 1, point (7)).

4. Total primary coolant oxidants remained at less than 10 ppm until 1400 hours on October 13, 1979. Beginning at 0000 hours on October 13, 1979, carbon monoxide began increasing, and this eventually brought the total of primary coolant oxidants to greater than 10 ppm. Following a short period of degraded mode operation (reference Figure 1, point (8)), total oxidants dropped below 10 ppm and no further degraded mode operation was observed.

CAUSE
DESCRIPTION:

Reasons for the LCO 4.2.10 degraded mode operation referenced in this report are as follows:

1. At approximately 0400 hours on October 8, 1979, a temporary loss of liquid nitrogen to the low temperature absorber resulted in an increase in total oxidants due primarily to carbon monoxide. Following a peak at approximately 0800 hours carbon monoxide levels decreased. At 1345 hours, a decision was made to increase reactor power to facilitate removal of moisture remaining in the core following a dryer bypass due to cross tower leakage on October 5, 1979. This increase in temperature resulted in increased oxidant levels.

2. The degraded mode operation referenced in item 2 of the event description was the result of an increase in core outlet temperature which allowed moisture to react with the core graphite, resulting in increased carbon monoxide and carbon dioxide values.

3. Degraded mode operation described in item number 3 was a result of a small increase in moisture level.

CAUSE
DESCRIPTION (continued):

4. The degraded mode operation noted in item 4 of the event description was due to a small, gradual increase in carbon monoxide. No explanation traceable to plant operation is available for this brief period of degraded mode operation.

CORRECTIVE
ACTION:

Corrective action for the occurrences noted in this report is as follows:

1. Reactor power was reduced on October 9, 1979, to achieve an average core outlet temperature less than 1,200°F until primary coolant oxidants were brought within the limits of LCO 4.2.10.

2, 3, and 4. No specific corrective action was taken for the degraded mode operation referenced in items 2, 3, and 4. Sufficient primary coolant cleanup occurred in each case to return primary coolant oxidants to less than 10 ppm.

No further corrective action is anticipated or required.

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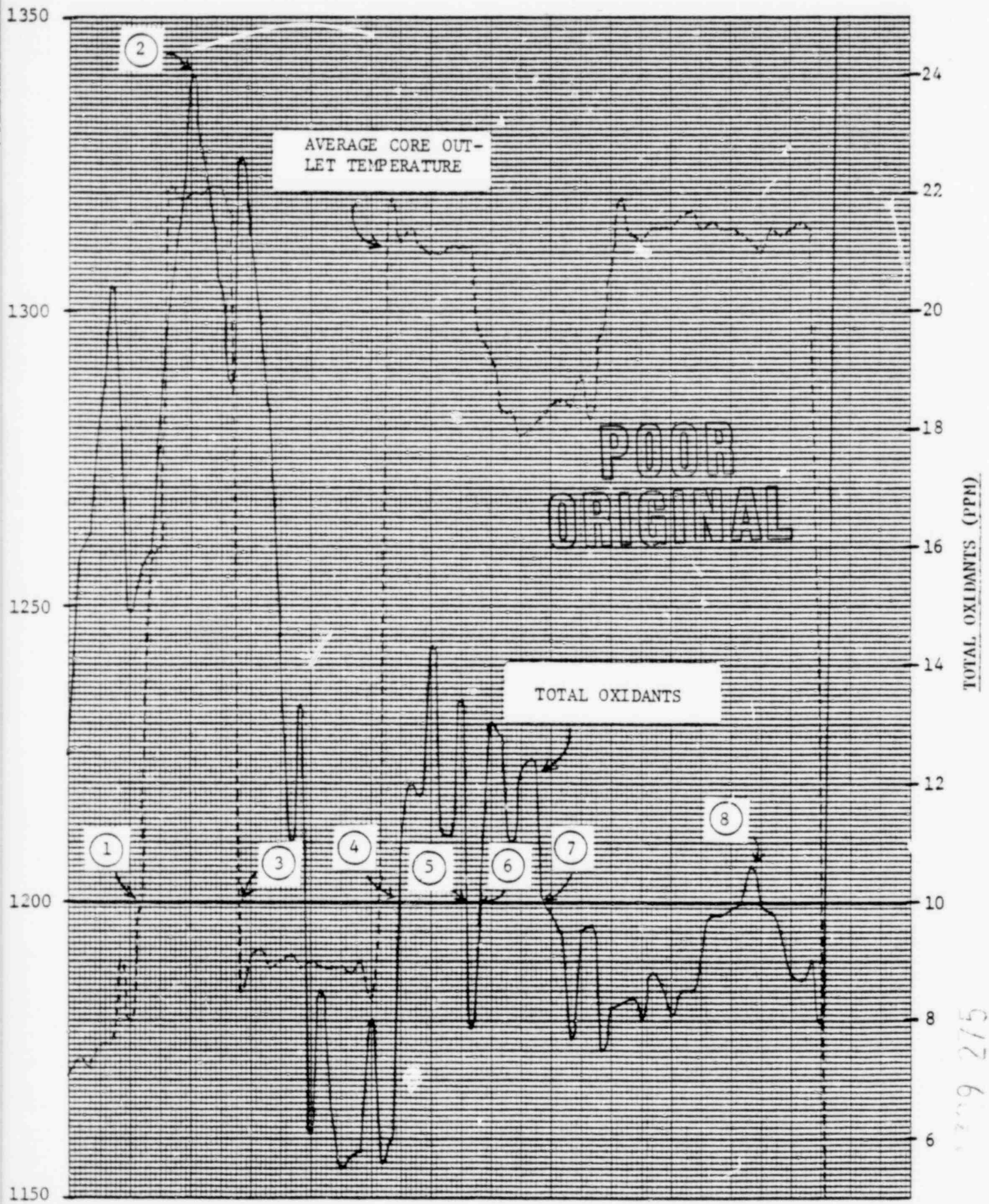
FIGURE 1

AVERAGE CORE OUTLET TEMPERATURE VERSUS PRIMARY COOLANT OXIDANTS



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