



Public Service Company ^{of} Colorado

P. O. Box 361, Platteville, Colorado 80651

August 31, 1979
Fort St. Vrain
Unit No. 1
P-79195

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. 50-267/79-24/03-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. 50-267/79-24/03-L-0.

Very truly yours,

Don Warembourg
Don Warembourg
Manager, Nuclear Production

DW/alk

cc: Director, MIPC

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REPORT DATE: August 31, 1979

REPORTABLE OCCURRENCE 79-24

ISSUE 0

OCCURRENCE DATE: August 4, 1979

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FORT ST. VRAIN NUCLEAR GENERATING STATION
PUBLIC SERVICE COMPANY OF COLORADO
P. O. BOX 361
PLATTEVILLE, COLORADO 80651

REPORT NO. 50-267/79-24/03-L-0

Final

IDENTIFICATION OF
OCCURRENCE:

On three occasions during the period from August 4, 1979, through August 16, 1979, total primary coolant oxidants (the sum of water, carbon monoxide, and carbon dioxide) exceeded 10 parts per million with core average outlet temperature greater than 1,200°F.

This constitutes operation in a degraded mode permitted by LCO 4.2.10 and is reportable per Technical Specification AC 7.5.2(b)2.

EVENT DESCRIPTION:

At about 0630 hours on August 4, 1979, with the reactor operating at approximately 45% power and total primary coolant oxidants at approximately 11.8 ppm, core average outlet temperature exceeded 1,200°F for the first time since the refueling shutdown (reference Figure 1, point (1)). Following an initial increase, (Figure 1, point (2)) oxidant levels appeared to be following a decreasing trend until approximately 1745 hours on August 6, 1979. Since as much moisture as possible had been removed at existing plant conditions, reactor power was increased to approximately 60% to facilitate additional "drying out" operations. At that time, it was observed that carbon monoxide indications were on the increase.

At 0230 hours on August 7, 1979, it was observed that primary coolant carbon dioxide levels were also increasing. At this point, it was determined that the "A" helium purification dryer had apparently broken through. Maximum oxidant concentration of 51.5 ppm was reached at approximately 0600 hours with average core outlet temperature of 1,300°F (reference Figure 1, point (3)).

Operation continued at approximately 65% power and 1,340°F core outlet temperature, and primary coolant oxidant levels followed a generally decreasing trend as the increased temperatures allowed the moisture to outgas from the graphite in the core.

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EVENT

DESCRIPTION (continued):

Due to a circulator trip on August 11, 1979, temperatures were decreased to less than 1,200°F (reference Figure 1, point (4)). With the subsequent rise in power later that same day, temperatures were again increased to greater than 1,200°F, while oxidant levels continued their decreasing trend. At 1937 hours on August 11, 1979, the reactor scrammed, and temperatures again decreased to less than 1,200°F (reference Figure 1, Point (5)). Oxidant levels continued to decrease until a subsequent increase in temperature on August 13, 1979, resulted in LCO 4.2.10 limits again being exceeded at approximately 1500 hours on August 13, 1979 (reference Figure 1, point (6)).

At 0040 hours on August 16, 1979, a circulator trip occurred. Reactor power and temperature were decreased to allow recovery of the circulator (reference Figure 1, point (7)). Following this occurrence, no further degraded mode operation of LCO 4.2.10 occurred.

CAUSE

DESCRIPTION:

It is assumed that the continued level of oxidants in the primary coolant following regeneration of the purification train was a result of off-gassing due to a previous buffer helium dryer bypass which resulted in water ingress to the core.

As temperatures increase, the water reacts with the graphite in the core to form carbon monoxide and carbon dioxide. During the period covered by this report there were no significant changes in the moisture concentrations observed in the primary coolant, so the increased oxidant levels are attributed to the reaction between the water and graphite as a result of efforts to dry out the core following an extended refueling shutdown and the previously mentioned dryer bypass.

CORRECTIVE

ACTION:

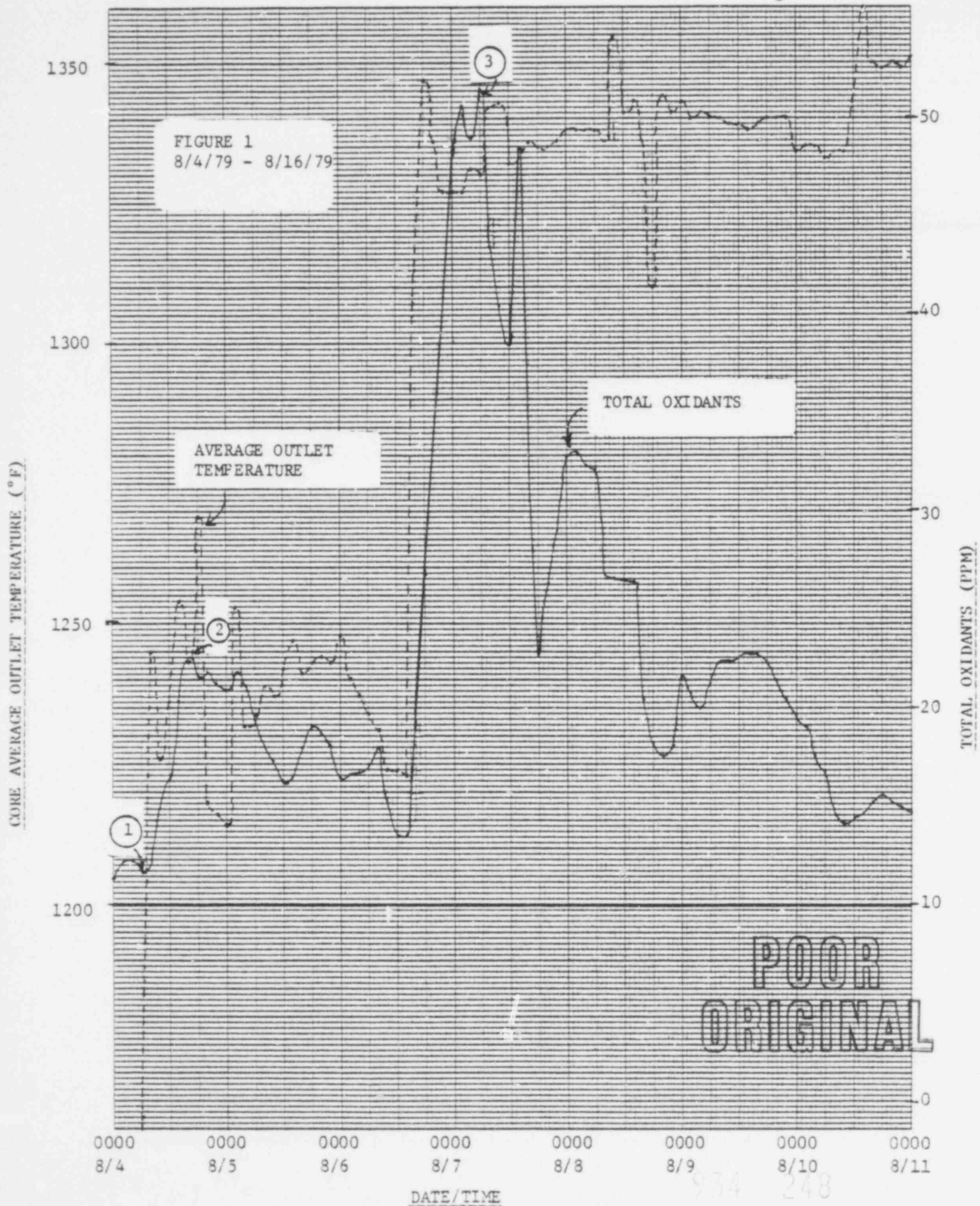
"B" purification train was placed in service in an attempt to keep the total primary coolant oxidant levels from increasing, and the "A" purification train which had broken through was regenerated.

Drying out operations were continued with consideration to the limits allowed per LCO 4.2.10. Decreases in temperature due to periodic circulator trips and reactor scrams precluded any necessity for planned temperature decreases.

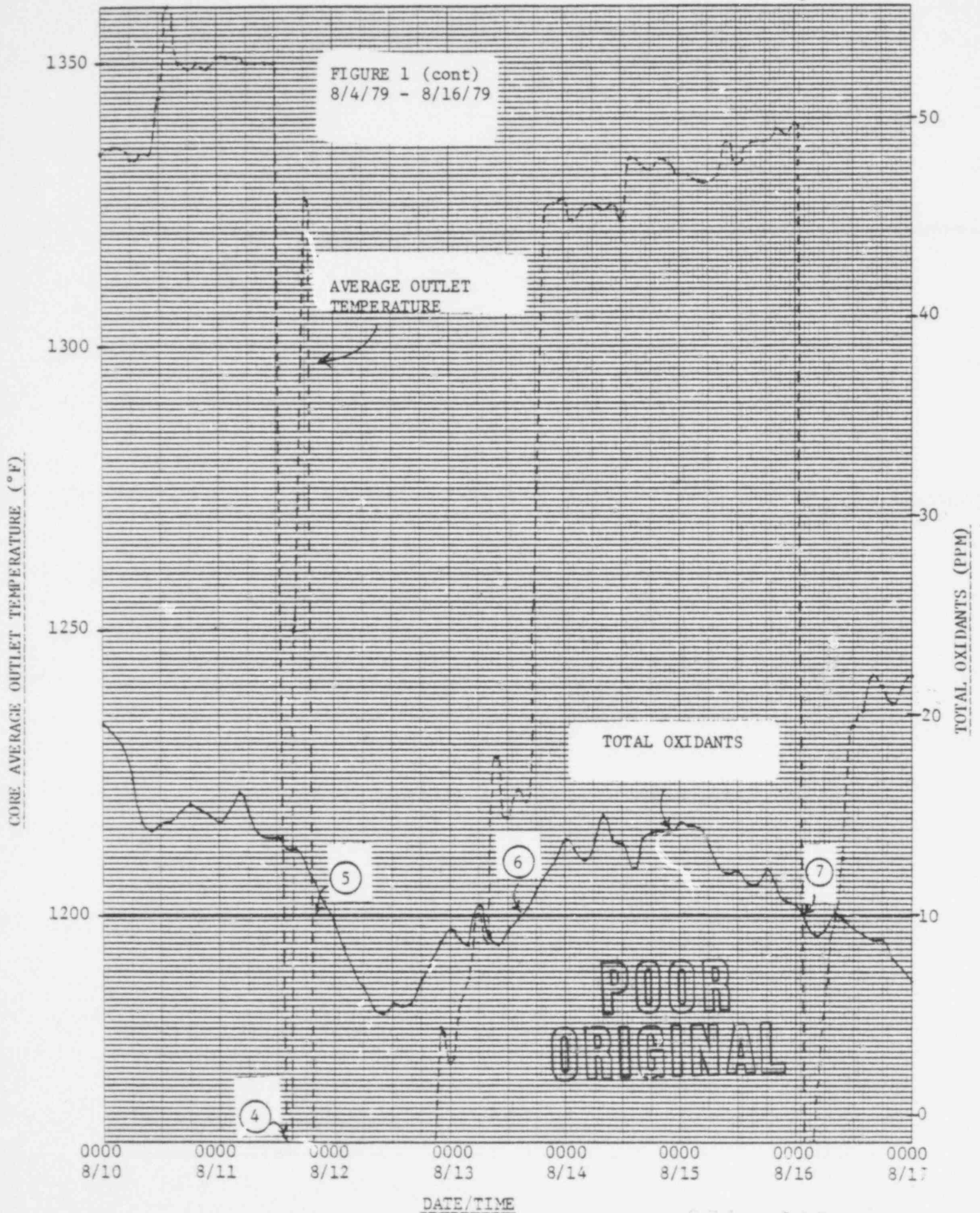
CORRECTIVE
ACTION (continued):

Following the return to a core average outlet temperature greater than 1,200°F on August 16, 1979, no further degraded mode operation per LCO 4.2.10 was observed.

No further corrective action is anticipated or required.



CORE AVERAGE OUTLET TEMPERATURE AND TOTAL PRIMARY COOLANT OXIDANTS



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