

October 28, 1982

In reply, please  
refer to LAC-8676

DOCKET NO. 50-409

Mr. James G. Keppler, Regional Administrator  
U. S. Nuclear Regulatory Commission  
Directorate of Regulatory Operations  
Region III  
799 Roosevelt Road  
Glen Ellyn, Illinois 60137

SUBJECT: DAIRYLAND POWER COOPERATIVE  
LA CROSSE BOILING WATER REACTOR (LACBWR)  
PROVISIONAL OPERATING LICENSE NO. DPR-45  
REPORTABLE OCCURRENCE NO. 82-13

REFERENCES: (1) DPC Letter, LAC-8375, Linder to Keppler,  
dated July 1, 1982  
(2) DPC Letter, LAC-8601, Linder to Keppler,  
dated September 22, 1982

Dear Mr. Keppler:

This letter serves as a follow-up to provide additional information on the effects of the event initially described in Reference 1. That event, Reportable Occurrence No. 82-13, concerned the increase in reactor coolant conductivity which occurred on June 3, 1982, when stagnant water, including river water, was sent into the reactor vessel during a surveillance test.

On September 1, 1982, during post-installation testing of a modification to the High Pressure Core Spray (HPCS) System, the discharge pressure of the HPCS pumps was observed to be approximately 170 psig, with one pump running, and 600 psig with both pumps operating. The annual surveillance test specifies acceptance ranges of 85-110 psig for one pump and 325-415 psig with both pumps. The system modifications installed during the refueling outage did not justify the magnitude of the pressure increase. Therefore, an extensive investigation was commenced to determine the cause.

Troubleshooting included removing and repairing the HPCS flow switch, removing and replacing the newly installed flow orifice, and backflushing the HPCS bundle, in accordance with LACBWR Operations Procedure OP-53-02, "Backflush of High Pressure Core Spray System." These actions decreased the pumps' discharge pressures to 130-135 psig, with one pump running, which was still above the acceptance range. A small amount of magnetic filings was filtered, from the system during a backflush. The portion of the HPCS system which had been cut during the modification is fabricated from stainless steel piping while the HPCS Pumps suction piping is carbon steel.

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The reactor vessel head was removed and additional troubleshooting activities were conducted in accordance with LACBWR Operations Procedures OP-53-03, "High Pressure Core Spray System Pressure Drop Investigation Procedure", and OP-53-04, "High Pressure Core Spray Bundle Flushing Procedure." A small amount of material with a high iron content, believed to be carbon steel corrosion products, was recovered from the core spray bundle. It is believed that several core spray lines may have been partially blocked. Following extensive flushing operations and testing, the core spray bundle was returned to the reactor. The annual test of the Emergency Core Spray System was conducted. Pump discharge pressure was 100 psig, with either pump running and 360-370 psig with both HPCS pumps operating. These values were well within the acceptance criteria.

It is believed that piping corrosion products, with possibly some river matter, entered the High Pressure Core Spray System during the surveillance test on June 3, when the stagnant water, including some river water, reached the reactor vessel through the HPCS bundle. Earlier in the refueling outage, a flush had been conducted on the High Pressure Service Water (HPSW) System, and later the HPSW piping inside the Containment had been drained and refilled. These activities may have led to a small accumulation of carbon steel corrosion products and possibly some silt in the horizontal stretch of line, in which the Service Water to Emergency Core Spray Pumps Valve (53-25-004) is located.

Based on this incident, it was decided to electrically isolate the Service Water to Emergency Core Spray Pumps Valve, because use of the valve may result in blockage in the HPCS bundle (Refer to Reference 2). High Pressure Service Water is a backup water supply to the HPCS system. DPC also decided to terminate the inservice testing of the HPSW to HPCS valves due to the consequences on the HPCS system and primary water chemistry. The revised status of the HPSW to HPCS tie. This decision was communicated to the NRC in Reference 2.

The total personnel exposure received in troubleshooting the High Pressure Core Spray System was 11.4 manRem, distributed as follows:

<u>DEPARTMENT</u>	<u>INDIVIDUALS EXPOSED</u>	<u>TOTAL EXPOSURE (MANREM)</u>
Operations	22	6.208
Mechanical Maintenance	11	3.188
QA/Engineering	6	0.977
I&E Maintenance	7	0.175
NRC	1	0.018

An updated Licensee Event Report (Reference: Regulatory Guide 1.16, Revision 4) is enclosed.

If there are any questions, please contact us.

Mr. James G. Keppler, Regional Administrator  
U. S. Nuclear Regulatory Commission

October 28, 1982  
LAC-8676

Very truly yours,

DAIRYLAND POWER COOPERATIVE

*James W. Taylor*  
for Frank Linder, General Manager

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