

OYSTER CREEK NUCLEAR GENERATING STATION
FORKED RIVER, NFW JERSEY 08731

Abnormal Occurrence
Report No. 50-219/74/26

Report Date

April 22, 1974

Occurrence Date

April 12, 1974

Identification of Occurrence

Failure of emergency service water pump (52C) to start when called upon. This event is considered to be an abnormal occurrence as defined in the Technical Specifications, paragraph 1.15D.

Conditions Prior to Occurrence

The plant was operating at steady-state power.

The major plant parameters at the time of this occurrence were as follows:

Power:	Core, 1843 MWt
	Electric, 637 MWe
Flow:	Recirculation, 61×10^6 lb/hr
	Feedwater, 6.9×10^6 lb/hr
Stack Gas:	36,000 μ Ci/sec

Description of Occurrence

On Friday, April 12, 1974, in attempting a normal start of the containment spray system, the following sequence of events occurred:

1. A start signal given to containment spray system II.
2. Containment spray pump 51C started.
3. Emergency service water pump 52C failed to start and "Emergency Service Water Pump C Failure" alarm initiated after the ~180 second time delay.
4. Emergency service water pump 52D was then started and operated successfully in accordance with requirements of Technical Specification 3.4.C.4.
5. Containment spray system II was secured.

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6. An operator was dispatched to the 4160V switchgear room and it was discovered that the thermal overload relay had tripped on the 52C breaker. The overload relay was reset.
7. Control room operator attempted a restart of containment spray system II.
8. The system operated properly with no irregularities.
9. The system, after this successful operability check, was secured.

The system was given an additional operability check later in the day and operated successfully with no problems or alarms.

Prior to this event on Thursday, April 11, 1974, the containment spray system II was initiated to obtain torus water sample and to pump torus water. At this time, while running the system, the "Emergency Service Water Pump C Trouble" alarm was received. The pump continued operating and an operator was dispatched to the emergency service water pump to investigate. The oil level and the bearing temperatures were normal. However, the operator did not check the thermal overload relay at the pump breaker in the 4160V switchgear room. At this time, it was thought that the alarm was a faulty indication and a job order was issued to have it checked out. When the system was secured, the alarm did not clear. This alarm was still in when the pump start was attempted at the time of the incident.

Apparent Cause of Occurrence

The check of the logic circuit for the emergency service water pump showed that the thermal overload relay, coupled with the excess current relay, will prevent the pump from starting. Since the excess current relay normally picks up on the initial current surge caused by the starting of the pump, the main cause of this event is the trip of the thermal overload relay and the failure to reset it. This relay can be set off by a number of conditions, some of which are excess amperage through the motor, dust on the contacts, vibration in the cabinet, and set point out of calibration.

Analysis of Occurrence

The containment system is designed to provide heat removal capability with one containment spray and one emergency service water pump in either loop. The safety significance of this event is in the loss of redundancy of the emergency service water pumps in one of the two redundant containment spray systems.

Corrective Action

1. The Generation Engineering Department will be requested to investigate the feasibility of removing the thermal overload relay from the trip circuits of the emergency service water pumps and yet still continue to provide an alarm function.

2. The procedure for checking out the "trouble" alarm on the emergency service water pumps will be revised to provide for more definitive action on the part of the operator.
3. The Relay Department will be requested to check and recalibrate, if necessary, this thermal overload relay.

If the calibration check on the thermal overload relay does not reveal any discrepancies, the pump motor will be thoroughly checked out to attempt to pinpoint the cause of the relay trip.