

OYSTER CREEK NUCLEAR GENERATING STATION  
FORKED RIVER, NEW JERSEY 08731

Abnormal Occurrence  
Report No. 50-219/74/25

Report Date

April 19, 1974

Occurrence Date

April 9, 1974

Identification of Occurrence

Violation of the Technical Specifications, paragraph 3.5.A.1, loss of primary containment integrity with the reactor critical and the reactor water temperature greater than 212°F. Based on the criteria of Technical Specification 4.5.F.c, the torus vacuum breaker valves, V-26-15 and 16, could be considered inoperable. This event is considered to be an abnormal occurrence as defined in the Technical Specifications, paragraph 1.15B.

Conditions Prior to Occurrence

The plant was operating at steady-state power.

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

Power:	Reactor, 1849 MWt
	Electric, 642 MWe
Flow:	Recirculation, $61 \times 10^6$ lb/hr
	Feedwater, $6.9 \times 10^6$ lb/hr
Stack Gas:	34,895 $\mu$ Ci/sec

Description of Occurrence

At 1040 on April 9, 1974, a local leak rate test on the reactor building to torus vacuum breakers was commenced and it was discovered that pressure could not be placed between V-26-15 and 16, the check and butterfly isolation valves. A check of leakage of drywell atmosphere to the reactor building was made. No leakage was indicated when a plastic bag was taped over the vent pipe. When pressure was again applied, the bag filled with air indicating that the outside (check) valve was leaking. The check valve was cycled several times and then forced to seat. Air was again admitted between the valves and no leakage was detected through the check valve, but the pressure would not exceed 17.5 psig. This indicated that the butterfly valve, V-26-16, was leaking. Upon inspection of V-26-16, it was found that the valve had not been in the fully closed position. The valve was fully closed manually and a successful leak test was performed.

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The butterfly valve, V-26-16, was made inoperable, as permitted by Technical Specification 3.5.A.5.

#### Apparent Cause of Occurrence

The cause of this occurrence is attributed to component failure. The reason for valves V-26-15 and V-26-16 not to seal properly is not known at this time.

#### Analysis of Occurrence

Prior to the forced seating of check valve V-26-15, pressure could not be placed between the two valves, V-26-15 and 16, making a determination of leakage rate impossible. It was determined, however, that at normal drywell and torus pressure, no leakage from the torus to the reactor building was present.

After the forced seating of V-26-15, a valid leakage rate test at 35 psig could not be performed since the maximum attainable pressure between the valves was only approximately 17.5 psig. The inability to reach 35 psig was due to the small size of the test penetration on valve V-26-15 and also leakage through V-26-16.

The leakage rate at 17.5 psig was estimated from available data and extrapolated to 20 psig (Pt). This estimation showed that the leakage rate was less than 40% of the allowable drywell leakage rate.

#### Corrective Action

Check valve V-26-15 was manually forced to seat properly. At 1408, after it was determined that V-26-16 was also leaking, a reactor shutdown was commenced. V-26-16, the air-operated butterfly valve, which was found not to be fully in the closed position, was properly seated and a leak rate test was begun.

At approximately 1440, results of the test were obtained indicating a satisfactory leak rate and proper primary containment integrity.

Since both V-26-15 and V-26-16 had to be closed using manual assistance and it was felt that V-26-16 might not open without manual assistance if required, this vacuum breaker valve set was considered inoperable as allowed by Technical Specification 3.5.A.5. V-26-16 was, therefore, disabled to ensure that it would remain in the closed position.

At 1443, the shutdown was terminated and a return to the initial power level was commenced.

The following PORC recommendations made upon review of the occurrence will be implemented:

1. A Study of the suitability of butterfly valves for this application be conducted by Generation Engineering.
2. V-26-15 (check valve) be disassembled, inspected, and cleaned during the 1974 refueling outage. While disassembled, V-26-16 be internally inspected.
3. Revise the surveillance test procedure to reflect use of the shaft position indicator in determining that the butterfly valves are fully closed after operability testing.

Failure Data

History of torus to reactor building vacuum breakers:

- 11/23/70 - V-26-18 failed to open during operability surveillance
- 12/18/70 - V-26-16 and V-26-18 failed to open during operability surveillance
- 1/12/71 - V-26-18 failed leakage rate test
- 1/13/71 - V-26-18 linkage tightened one turn, passed leakage test but valve would not open
- 1/14/71 - V-26-18 adjusted controller, passed leakage test and passed operability test
- 2/17/71 - V-26-16 and V-26-18 changed seats and both passed leakage tests
- 5/3/73 - V-26-18 failed leakage test. Linkage adjusted and valve passed leakage and operability tests.