

LICENSEE EVENT REPORT (LER)

U.S. NUCLEAR REGULATORY COMMISSION  
APPROVED FORM NO 3150-016  
EXPIRES 07/1/86

FACILITY NAME (1) Indian Point Unit No. 2  
LOCAL NUMBER (2) 06000247  
PAGE (3) 1 of 4

TITLE (4) Failure of Service Water Pumps During Surveillance Test

| EVENT DATE (5) |     |      | LER NUMBER (6) |                   |              | REPORT DATE (7) |     |      | OTHER FACILITIES INVOLVED (8) |   |                  |   |
|----------------|-----|------|----------------|-------------------|--------------|-----------------|-----|------|-------------------------------|---|------------------|---|
| MONTH          | DAY | YEAR | YEAR           | SEQUENTIAL NUMBER | INVCN NUMBER | MONTH           | DAY | YEAR | FACILITY NAME                 |   | LOCAL NUMBER (1) |   |
| 1              | 0   | 0    | 9              | 8                 | 7            | 8               | 7   | 0    | 1                             | 1 | 0                | 0 |
|                |     |      |                |                   |              |                 |     |      |                               |   | 0                | 6 |
|                |     |      |                |                   |              |                 |     |      |                               |   | 0                | 6 |

OPERATING MODE (9) N

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 8. (Check one or more of the following) (10)

|   |  |   |  |
|---|--|---|--|
| <input type="checkbox"/> 20.4001(a)         | <input type="checkbox"/> 20.4001(c)          | <input type="checkbox"/> 20.7301(a)(1)(i)             | <input type="checkbox"/> 20.7301(b)          |
| <input type="checkbox"/> 20.4001(b)(1)(i)   | <input type="checkbox"/> 20.4001(b)(1)(ii)   | <input type="checkbox"/> 20.7301(b)(1)(i)             | <input type="checkbox"/> 20.7301(b)          |
| <input type="checkbox"/> 20.4001(b)(1)(iii) | <input type="checkbox"/> 20.4001(b)(1)(iv)   | <input checked="" type="checkbox"/> 20.7301(b)(1)(ii) | <input type="checkbox"/> 20.7301(b)(1)(iii)  |
| <input type="checkbox"/> 20.4001(b)(1)(v)   | <input type="checkbox"/> 20.4001(b)(1)(vi)   | <input type="checkbox"/> 20.7301(b)(1)(iv)            | <input type="checkbox"/> 20.7301(b)(1)(v)    |
| <input type="checkbox"/> 20.4001(b)(1)(vii) | <input type="checkbox"/> 20.4001(b)(1)(viii) | <input type="checkbox"/> 20.7301(b)(1)(v)             | <input type="checkbox"/> 20.7301(b)(1)(vi)   |
| <input type="checkbox"/> 20.4001(b)(1)(ix)  | <input type="checkbox"/> 20.4001(b)(1)(x)    | <input type="checkbox"/> 20.7301(b)(1)(vi)            | <input type="checkbox"/> 20.7301(b)(1)(vii)  |
| <input type="checkbox"/> 20.4001(b)(1)(xi)  | <input type="checkbox"/> 20.4001(b)(1)(xii)  | <input type="checkbox"/> 20.7301(b)(1)(vii)           | <input type="checkbox"/> 20.7301(b)(1)(viii) |

OTHER (Specify in this box) none and in Test, O&E Form 300A

LICENSEE CONTACT FOR THIS LER (11) Joseph Goebel, Test & Performance Manager

TELEPHONE NUMBER AREA CODE 914 526-5180

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (12)

| CAUSE | SYSTEM | COMPONENT | MANUFAC-TURER | REPORTABLE TO NRC | CAUSE | SYSTEM | COMPONENT | MANUFAC-TURER | REPORTABLE TO NRC |
|-------|--------|-----------|---------------|-------------------|-------|--------|-----------|---------------|-------------------|
| X     | B, I   | P, A      | 590           | Y                 |       |        |           |               |                   |
| X     | B, I   | P, A      | 590           | N                 |       |        |           |               |                   |

SUPPLEMENTAL REPORT EXPECTED (13)

YES (If you complete EXPECTED SUBMISSION DATE)  NO

EXPECTED SUBMISSION DATE (14) MONTH DAY YEAR

ABSTRACT (Limit to 1000 spaces, i.e., approximately fifteen single-space typewritten lines) (15)

On October 8, 1987 while the plant was at cold shutdown for a refueling outage, two service water pumps (P) failed an ASME Section XI surveillance test. The discharge head developed by the pumps (P) was below the minimum specified in ASME Section XI. The cause of the test failure is attributable in one instance to pump (P) damage caused by vortexing. The performance of the second pump (P) is under evaluation. Its slight decline in performance is not believed to be significant.

There are a total of six service water pumps (P) supplying two headers (3 pumps per header). The two failed pumps (P) were on one header. A third pump (P) supplying the second header could not be tested due to malfunction of a valve operator. The delayed test of the third pump (P) is a condition permitted by the Technical Specification when the plant is in cold shutdown. At no time was there any impact upon plant safety.

The health and safety of the public were not affected.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION  
 APPROVED OMB NO 3150-0104  
 (EXPIRES 6/31/85)

|                   |                   |                       |                 |                 |          |    |     |
|-------------------|-------------------|-----------------------|-----------------|-----------------|----------|----|-----|
| FACILITY NAME (1) | DOCKET NUMBER (2) | LER NUMBER (3)        |                 |                 | PAGE (3) |    |     |
|                   |                   | YEAR                  | SEQUENT. NUMBER | REVISION NUMBER |          |    |     |
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Indian Point Unit No. 2

LET IF MORE SPACE IS REQUIRED USE ADDITIONAL NRC Form 204 (11/77)

Plant and System Description:

Westinghouse 4-loop pressurized water reactor

Identification of Occurrence:

Two Service Water System intake pumps fail an ASME Section XI Inservice Test.

Event Date:

October 8, 1987

Report Due Date:

November 7, 1987

Reference:

Significant Occurrence Report (SOR) 87-476

Past Similar Events:

None

Description of Occurrence:

On October 8, 1987 it was determined that two Service Water Pumps (P) failed a routine ASME Section XI inservice test. Both pumps (P) failed to develop sufficient discharge head to meet the minimum requirement of ASME Section XI.

In one case the developed head was less than 50% of that required while in the other case the developed head was just below the minimum required. In the latter instance, the design discharge head is 230 feet of water, the minimum test value is 269 feet of water and the measured value was 263 feet of water.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104  
EXPIRES 8/31/85

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| FACILITY NAME (1):<br><br>Indian Point Unit No. 2 | DOCKET NUMBER (2):<br><br>0 5 0 0 0 2 4 7 | LER NUMBER (3): |                 |                 | PAGE (3): |        |
|   |   | YEAR            | SEQUENT. NUMBER | REVISION NUMBER |           |        |
|   |   | 8 7             | - 0 1 1         | - 0 0           | 0 3       | OF 0 4 |

LET IF MORE SPACE IS REQUIRED USE BOTTOMING NRC Form 266A or (17)

The design of the Service Water System provides two separate headers with three supply pumps (P) for each header for a total of six pumps (P). One header is designated the essential header while the remaining header is identified as the non-essential header. The headers are interchangeable.

The two pumps (P) which failed the test were located on one header. At the same time a third pump (P) supplying the second header could not be tested due to a malfunctioning valve operator. The delayed test of the third pump (P) is a condition permitted by the Technical Specifications when the plant is in cold shutdown.

Analysis of Occurrence:

This report is being made pursuant to 10CFR50.73(a)(2)(vii).

It should be noted that one pump had a discharge head slightly less than the minimum test requirement allowable. However, the developed head was still greater than the value required by design. Thus, although the pump failed the test it still would have fulfilled its design function.

There was no impact on plant safety. On one header (A) two pumps were known to be operable with the third pump indeterminate due to the lack of test data. On the alternate header (B), one pump was clearly inoperable while the second pump, although it failed the Section XI test criteria and was administratively declared inoperable, developed more than sufficient discharge head to perform its safety function. The third pump on header (B) passed the test successfully and thus was operable. Since at cold shutdown, only two service water pumps are required to support decay heat removal, a single failure could be postulated on either header and two pumps on the alternate header would have been available to perform the required safety function.

Similarly, if the status of the service water pumps described above existed during normal operation there would have been no impact upon plant safety. Regardless of any assumption as to which header suffered a single failure two pumps have remained available on one header and one pump would have remained available on the alternate header in satisfaction of the Service Water System design requirement for hypothetical accident scenarios.

Cause of Occurrence:

The service water pumps are subject to vibrations, erosion and wear, requiring maintenance and replacement of parts. These effects have resulted in a pump life of 18 to 24 months which is the subject of a current engineering study.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO 3150-0104  
EXPIRES 6/30/80

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| FACILITY NAME (1)<br><br>Indian Point Unit No. 2 | DOCKET NUMBER (2)<br><br>0   5   0   0   0   2   4   7   8   7   -   0   1   1   -   0   0 | LER NUMBER (6) |                 |                 | PAGE (3) |    |       |
|  |  | YEAR           | SEQUENT. NUMBER | REVISION NUMBER |          |    |       |
|  |  | 8   7          | 0   1   1       | -   0   0       | 0   4    | OF | 0   4 |

LET IF MORE SPACE IS REQUIRED USE SEPARATE NRC Form 266A (1/77)

Corrective Action:

As a result of this program several changes to pump materials and methods and frequency of repair are being evaluated to determine what changes need to be made to improve pump life.

Murray Selman  
Vice President

Consolidated Edison Company of New York, Inc.  
Indian Point Station  
Broadway & Bleakley Avenue  
Buchanan, NY 10511  
Telephone (914) 737-8116

November 9, 1987

Re: Indian Point Unit No. 2  
Docket No. 50-247  
LER-87-11-00

Document Control Desk  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555

The attached Licensee Event Report LER-87-11-00 is hereby submitted in accordance with the requirements of 10 CFR 50.73.

Very truly yours,

*Murray Selman*

25.190.11.9.3  
Attachment

cc: Mr. William Russell  
Regional Administrator - Region I  
U.S. Nuclear Regulatory Commission  
631 Park Avenue  
King of Prussia, PA 19406

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U.S. Nuclear Regulatory Commission  
P.O. Box 38  
Buchanan, NY 10511

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