Indian Point 3
Nuclear Power Plant
P.O. Box 215
Buchanan, New York 10511
914 736.8001

New York Power Authority

William A. Josiger
Resident Manager

June 14, 1989
IP3-89-047

Docket No. 50-286
License No. DPR-64

Mr. William F. Kane, Director
Division of Reactor Projects
U. S. Nuclear Regulatory Commission
Region I
475 Allendale Road
King of Prussia, PA 19406

SUBJECT: Inspection No. 50-286/89-06 and Associated Notice of Violation (89-06-01)

Dear Mr. Kane:

This letter and Attachment I provide the Authority's response to Inspection Report No. 50-286/89-06 and its associated notice of violation (89-06-01).

Should you or your staff have any questions concerning this matter, please contact Mr. M. Peckham of my staff.

Sincerely,

William A. Josiger
Resident Manager
Indian Point Unit 3
Nuclear Power Plant

WAJ:MPP:lh

Attachment

cc: Document Control Desk (original)
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Resident Inspector's Office
Indian Point 3
U.S. Nuclear Regulatory Commission
P.O. Box 337
Buchanan, NY 10511

IE01
1/1

ATTACHMENT I

VIOLATION:

License Technical Specification, Section 6.8.1 requires that written procedures, surveillance and test activities, as referenced in Appendix A of Regulatory Guide (RG) 1.33, November 1972, be established and implemented to ensure that safety-related equipment will perform their intended function.

Licensee's Administrative Procedure AP-4, "Procedure Adherence and Use," Section A.1, Revision 8, requires that procedures shall be followed.

Contrary to the above, on March 8, 1989, test technicians failed to implement the instructions of Section 2.8 of the test procedure ENG 259E, "Service Water Pump No. 35, Functional Test," Revision 1 in that the technician performing the test failed to secure the pump when the vibration level observed on the pump motor exceeded the procedural limit of 3.5 mils.

RESPONSE:

The Authority has reviewed in detail the notice of violation outlined in Attachment A of NRC Inspection Report 89-06 and agrees that this event is a violation of Indian Point 3 procedural requirements.

Specifically, AP-3, "Procedure Preparation , Review, and Approval" states " a Temporary Procedure Change Notice (TPCN) shall be completed prior to initiating a temporary change to a procedure". In this situation the necessary procedure change process was being conducted parallel to the procedure change itself.

Appendix A (memoranda from the Responsible Project Engineer, the Cognizant Design Engineer, the Test Group Supervisor, and the Performance and Reliability Supervisor to the Superintendent of Power), outlines in substantial detail the events leading to this notice of violation. As evidenced by these reports, significant evaluation took place before the decision was made to continue pump operation long enough to obtain vibration signatures. A Temporary Procedure Change Notice (TPCN) was initiated and prepared as the event unfolded. In addition, this document was reviewed by the Plant Operating Review Committee (PORC) subsequent to the test but before the equipment was declared operable.

The Authority believes that the Performance Technicians, Engineers and members of the Test Group involved in this event exhibited good knowledge of procedural requirements

and concern for meeting the procedural adherence philosophy espoused by the Indian Point 3 management and staff. The Authority also believes that the necessary personnel (vendor representative, Design and Responsible Project Engineers, Test Group Supervisor and Performance and Reliability Supervisor) evaluated the pump operating conditions, the procedure requirements and the technical background information and made a sound engineering judgement to continue pump operation. The Authority also recognizes that the procedural requirements currently in place do not allow such a decision to made in the manner in which it was made.

The Authority believes that the flexibility to make procedural changes to tests and retests based on sound engineering judgement and evaluation must be available to the plant staff. It is apparent that the Administrative procedure controlling this process is inadequate and should be changed. To correct this situation a revision to AP-3 recognizing as acceptable the process utilized by plant staff in the performance of this test has been initiated.

APPENDIX A

123 Main Street
White Plains, New York 10601
914 681.6200

New York Power Authority

June 7, 1989
IPP-89-278

TO: J. Russell

FROM: L. Garofolo / R. Lee

SUBJECT: IP-3 Service Water Pump #34 Functional Test

During the performance of SWP-34 functional test ENG-259D, Rev. 1, on March 8, 1989, abnormal pump/motor running conditions were observed which were potentially in conflict with the test procedure.

The test procedure called for the running of the pump at three approximate flow points and if any abnormal conditions are noticed (i.e. vibrations amplitude >3.5 mils) to immediately secure the pump.

During the system adjustments to achieve the required flow points, abnormal conditions were encountered in that the vibrations at the motor upper bearing exceeded 3.5 mils. This condition was being closely monitored and extensive diagnostic vibration data was recorded as part of the investigation into the source of vibration. It was important to determine the cause of this vibration for the continuing Pump Replacement Program. The Authority personnel present included the responsible project engineer, cognizant design engineer, plant performance and reliability engineers, plant test engineers and a representative from the pump manufacturer.

Upon observing this condition, an engineering evaluation immediately took place in conjunction with the pump manufacturer's representative and it was determined that the observed vibration readings were within the limits allowed by the pump manufacturer, the Hydraulic Institute Standards and machinery vibrations severity charts. It was therefore established that the integrity of the pump and motor were at no time jeopardized and thus a temporary procedure change (TPC) was immediately issued to increase the allowable vibration limits of the procedure to 5 mils prior to securing the pump. The maximum vibration level reached was below 5 mils. The test procedure was subsequently revised to incorporate the TPC prior to further pump testing.

L. Garofolo
Responsible Project Engineer

R. Lee
Cognizant Design Engineer

LG/RL:ms

May 23, 1989
89-OPS-067

MEMORANDUM TO: J. E. Russell

FROM: E. Armando

SUBJECT: ENG-259D PERFORMED ON MARCH 8, 1989

I am writing to you in order to clarify the events which took place during the performance of ENG-259D (34 SWP) on March 8, 1989.

As the Test Group Supervisor, my responsibilities are to coordinate and perform outage testing. To accomplish this, I rely heavily on the expertise and recommendations of the Technical Services Department, the responsible engineer and the vendor representative associated with a particular piece of equipment.

All of the above mentioned people were either present or onsite when testing of the service water pumps was initiated. No. 34 SWP was the first to be tested for the performance of ENG-259D. Upon starting the pump, it was noted that the upper motor bearing vibration (horizontal-east-west direction) was 3.8 mils, all the other readings were in spec. The vibration limit stated in the test was 3.5 mils, at which point the pump was to be immediately secured. I informed the responsible engineer that I would have to secure 34 SWP.

He and the vendor representative agreed that the 3.5 mil limit was overly conservative and requested that we continue to run 34 SWP long enough to obtain "vibration signatures" to determine the cause of the high vibrations.

I immediately notified the performance and reliability supervisor of the vibration levels and the request to keep the pump running. He discussed the 3.5 mil limit with the engineers who wrote the tests and all agreed that 3.5 mils was overly conservative. After further discussion and reference to the pump tech manual it was decided to increase the vibration limit to 5 mils before securing the pumps.

The Performance and Reliability Supervisor immediately wrote a TPC to the procedure to allow running with up to 5 mils vibration. The TPC was completed and delivered to me at the service water pumps while 34 pump was being run for vibration signatures.

Our intent throughout this event was always to ensure procedure compliance. The timeliness of the discussions and initiation of a TPC ensured that procedures were followed at all times.

It was recognized that 34 SWP was to be immediately secured and it would have been had the responsible engineer and the vendor representative not requested we keep it running for the vibration data. In addition, discussion with the engineer who wrote the test indicated that the test limits were overly conservative and that raising those limits was appropriate.

Based on these recommendations we wrote a TPC to the procedure and completed testing 34 SWP.

Edward Armando
Shift Supervisor

/gmr

cc: C. J. MacKay

Indian Point 3
Nuclear Power Plant
P.O. Box 215
Buchanan, New York 10511
914 739.8200

New York Power Authority

May 30, 1989

MEMORANDUM TO: J. Russell

FROM: L. Kelly

SUBJECT: #34 SWP FUNCTIONAL TEST PERFORMED MARCH 8, 1989

BACKGROUND

Test procedure ENG-259D was drafted to obtain initial pump performance data and functionally test Service Water Pump #34 installed by Modification 88-03-134 SWS. Test procedure ENG-259D Rev 0 was drafted for the cycle 5/6 Refueling Outage on May 21, 1987, but was never performed since the service water pump replacement was postponed. The original (1987) version of this procedure contained the following guidance for securing a pump to minimize damage/wear.

2.11 If at any time during the conduct of this test, abnormal conditions exist, immediately secure the pump.

2.12 If the amps drawn by the motor are greater than 475 amps, immediately stop the pump.

When ENG-259D was revised for implementation during the cycle 6/7 Refueling Outage these statements were modified as follows:

2.8 If at any time during the conduct of this test, abnormal conditions exist (i.e, motor current greater than 475 amps, and or vibration amplitude greater than 3.5 mils), immediately secure the pump.

INITIAL SERVICE WATER PUMP TEST

On March 8, 1989 the first service water pump functional test on the new Ingersol Rand units was being performed on #34 Service Water Pump. At approximately 1500 hours, L. Kelly was summoned to the intake structure by the test group supervisor and L. kelly arrived at the intake structure while preliminary vibration data on #34 Service Water Pump was being confirmed by Performance Technicians. There were six different data collection points on the pump/motor assembly where vibration data was being collected and monitored. The initial vibration displacments on #34 Service Water Pump measured during procedure Step 3.9 were as follows:

o Top Motor Bearing Horizontal Plane North-South	2.7 mils
o Top Motor Bearing Horizontal Plane East-West	3.8 mils
o Bottom Motor Bearing Horizontal Plane North-South	1.1 mils
o Bottom Motor Bearing Horizontal Plane East-West	2.1 mils
o Motor Casing Axial	1.5 mils
o Pump Base Vertical Plane	.11 mils

Test procedure ENG-259D did not provide enough detail about the 3.5 mils displacement vibration instruction to determine if 1) the pump is to be secured if only one vibration point exceeded 3.5 mils or 2) the pump is to be secured if general vibrations exceeded 3.5 mils. An immediate discussion between the Test Group Supervisor, the Performance and Reliability Supervisor, the Design Engineer, the Responsible Engineer, and the pump manufacturer's field engineer was held and the following concensus was obtained.

- The pump manufacturer indicated that continuous operation of the pump at 4 mils is acceptable.
- 3.5 mils is the transition threshold between slightly rough and rough operation and continued operation with one vibration point at this level represented a longer term and not an instantaneous concern.
- Diagnostics of the 3.8 mil vibration reading is not possible with the pump secured.
- Immediately securing the only operating service water pump presented a water hammer concern on resuming service water flow.
- Although the procedure could be interpeted as allowing continued pump operation for a period of time based on overall pump vibrations, all parties agreed that a Temporary Procedure Change would be drafted to clarify the ENG-259D procedural guidance and document the discussions between the Test Group Supervisor, Performance & Reliability Supervisor, Responsible Engineer, Design Engineer, and Manufacturer's field representative.

L. Kelly and the Design Engineer immediately drafted a Temporary Procedure Change (TPC) which:

1) Secured the pump if any single vibration point exceeded 5.0 mils displacement
2) Secured the pump if overall vibrations exceed 3.5 mils displacement
3) Notified the responsible engineer if any vibration test point exceeded 3.5 mils displacement.
4) Allowed for a safe & timely transfer of flow to another pump by removing the term "immediately".

This TPC was drafted, approved, entered, and distributed to the field while vibration signatures were still being collected during procedure step 3.9 (the same procedure step that identified the 3.8 mils vibrations displacment at the upper motor bearing).

In retrospect, all discussions and decisions were timely and careful procedure adherence was a priority for the Test Group. After it was determined by the responsible parties that the #34 pump should not be secured a Temporary Procedure Change was immediately prepared.

Respectfully,

L.M. Kelly
Performance & Reliability
Supervisor

cc: C. Caputo