

Official

May 6, 1988

Docket Nos. 50-338, 50-339
License Nos. NPF-4, NPF-7

Virginia Electric and Power Company
ATTN: Mr. D. S. Cruden, Vice President,
Nuclear Operations
P. O. Box 26666
Richmond, VA 23261

Gentlemen:

SUBJECT: ENFORCEMENT CONFERENCE SUMMARY
NRC INSPECTION REPORT NOS. 50-338/88-02 AND 50-339/88-02

This letter refers to the Enforcement Conference held at our request on March 28, 1988. This meeting concerned activities authorized for your North Anna facility. The issues discussed at this conference related to the management controls relating to inservice testing of Technical Specification containment isolation valves. A summary, a list of attendees, and a copy of your handout are enclosed.

In accordance with Section 2.790 of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, a copy of this letter and its enclosures will be placed in the NRC Public Document Room.

Should you have any questions concerning this letter, please contact us.

Sincerely,

ORIGINAL SIGNED BY:
J. NELSON GRACE

J. Nelson Grace
Regional Administrator

Enclosures:

- 1. Enforcement Conference Summary
- 2. List of Attendees
- 3. Handout

cc w/encls:

G. Kane, Station Manager
N. E. Hardwick, Manager - Nuclear
Programs and Licensing

bcc w/encls: (See page 2)

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1801

bcc w/encls:
NRC Resident Inspector
DRS Technical Assistant
Document Control Desk
Commonwealth of Virginia

RII <i>MS</i> MShannon:sh 04/10/88	RII <i>KJury</i> KJury 04/7/88	RII <i>RGibbs</i> RGibbs 04/7/88	RII <i>ABelisle</i> ABelisle 04/7/88	RII <i>CAJulian</i> CAJulian 04/7/88	RII <i>AFGibson</i> AFGibson 04/7/88	RII <i>FCantrell</i> FCantrell 04/21/88
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RII <i>BAWilson</i> BAWilson 04/27/88	RII <i>CHehl</i> CHehl 04/27/88	RII <i>LAReyes</i> LAReyes 04/27/88	RII <i>BUryc</i> BUryc 04/27/88	RII <i>GUenkins</i> GUenkins 05/3/88	RII <i>MLErnst</i> MLErnst 04/ /88	RII <i>JNGrace</i> JNGrace 04/ /88
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ENCLOSURE 1

ENFORCEMENT CONFERENCE SUMMARY

The Deputy Regional Administrator opened the meeting by stating that the purpose of the meeting was to review issues related to North Anna and Surry. Virginia Electric and Power Company (VEPCO) personnel and NRC personnel introduced themselves.

The VEPCO Senior Vice-President stated that the issue related to corrective actions for inservice valve testing for Technical Specification containment isolation values would be presented first. The Assistant Plant Manager, Operations and Maintenance, North Anna, started the presentation by stating that VEPCO did not dispute the inspection findings, that this situation was considered serious, and that VEPCO would perform adequate corrective action. The subsequent discussions consisted of reviewing NRC Inspection Report No. 50-338, 339/88-02, causes, actions initiated prior to the inspection, corrective actions taken, corrective actions to be taken, safety significance, quality assurance audits of the inservice inspection/testing programs, and conclusions.

During the presentation, the Assistant Plant Manager, Operations and Maintenance, North Anna, stated that a root cause analysis of the valve failures had been performed by a consultant; however, this analysis was not fully complete. During the discussions, NRC and VEPCO personnel presented sequence of events summaries to clarify issues. VEPCO personnel discussed the valves' failure analysis with the failures possibly being caused by a silicon residue found in a valve internal. VEPCO personnel stated the valve vendor's position did not appear to agree with the VEPCO position. When asked if the water intrusion into the instrument air lines to the solenoid valves was the probable cause of multiple valve failures, VEPCO personnel stated that this may have been a contributor; however, when one solenoid valve that had experienced repeated failures was disassembled, no evidence of water corrosion was identified on its internals. Discussions were conducted relative to ASME Section XI requirements, corrective action adequacy, and stroke frequencies. Discussions were also conducted relative to the effect of the valves' exhaust port piping diameter size on stroke times, since the valves with smaller exhaust port piping exhibited longer stroke times. Discussions were conducted relative to the effectiveness of quality assurance (QA) audits and QA involvement in this area. The meeting was then concluded by the Deputy Regional Administrator.

ENCLOSURE 2

LIST OF ATTENDEES

Virginia Electric and Power Company

W. L. Stewart, Senior Vice President
D. S. Cruden, Vice President, Nuclear Operations
G. E. Kane, Assistant Station Manager, Operations and Maintenance
M. L. Bowling, Assistant Station Manager (North Anna)
E. S. Greycheck, Assistant Station Manager (Surry)
G. L. Pannell, Director, SEC
R. S. Hardwick, Jr., Corporate Manager, Quality Assurance
N. E. Hardwick, Manager, Licensing
J. P. Maciejewski, Manager, ISI/NDE
R. F. Driscoll, Manager, Quality Assurance
H. V. Le, Plant Engineer

Nuclear Regulatory Commission

M. L. Ernst, Deputy Regional Administrator
A. F. Gibson, Director, Division of Reactor Safety (DRS)
C. W. Hehl, Deputy Director, Division of Reactor Projects (DRP)
B. A. Wilson, Chief, Branch 2, DRP
C. A. Julian, Chief, Operations Branch, DRS
C. P. Patel, Project Manager, Office of Nuclear Reactor Regulation (NRR)
L. B. Engle, Projects Manager, NRR
G. A. Belisle, Chief, Quality Assurance Programs Section, DRS
J. J. Blake, Chief, Materials and Processes Section, DRS
T. J. Sullivan, Chief, Mechanical Engineering Branch, NRR
J. L. Caldwell, Senior Resident Inspector, North Anna
L. E. Nicholson, Resident Inspector, Surry
R. D. Gibbs, Reactor Inspector
M. C. Shannon, Reactor Inspector
K. R. Jury, Reactor Inspector
E. H. Girard, Reactor Inspector
L. M. Slack, Enforcement and Investigation Coordination Assistant
B. Uryc, Senior Enforcement Coordinator

ENCLOSURE 3

ENFORCEMENT CONFERENCE
ON
NORTH ANNA POWER STATION
INSERVICE TESTING PROGRAM

MARCH 28, 1988

AGENDA

- REVIEW OF IR 88-02
- CAUSES
- CORRECTIVE ACTIONS
- SAFETY SIGNIFICANCE
- CONCLUSIONS

VIRGINIA POWER REVIEW OF IR 88-02

ASCO VALVES IDENTIFIED IN IR88-02	49
NO PERFORMANCE CONCERNS IDENTIFIED	2
REMOVED FROM IST PROGRAM	1
PERFORMANCE SAT BASED ON STROKE TIME < 2 SEC	2
PERFORMANCE SAT BASED ON ENGINEERING EVAL	17
PERFORMANCE SAT BASED ON CORRECTIVE ACTION	7
VALVES NOT TESTED MONTHLY BASED ON COLD SHUTDOWN CODE INTERPRETATION	5
STROKING USED AS CORRECTIVE ACTION FOR PREVIOUS VALVE FAILURES	15

1374

CAUSES

ISI / IST PROGRAM

- **DIFFERENT INTERPRETATION OF ASME CODE FOR CORRECTIVE ACTIONS**
- **IST PROGRAM IMPLEMENTATION WEAKNESSES**

ASCO VALVE PERFORMANCE

- **SERVICE WATER INTRUSION INTO INSTRUMENT LINES**
- **MODIFICATIONS TO SOV VENT PORT FOR EQ ENHANCEMENTS AFFECTED STROKE TIMES**

ACTIONS INITIATED PRIOR TO INSPECTION

- REVIEW OF PAST STATION DEVIATION REPORTS ON MOV PROBLEMS TO ENSURE ADEQUATE CORRECTIVE ACTION
- EVALUATION OF ASCO SOV FAILURES
- DEVELOPMENT OF ADMINISTRATIVE VALVE STROKE LIMITS TO DETECT DEGRADING VALVE PERFORMANCE
- BLOWDOWN AND DRAINING OF INSTRUMENT AIR SYSTEMS AFTER SERVICE WATER INTRUSION EVENT
- UPGRADE OF STATION CORRECTIVE ACTION PROGRAM TO ENHANCE ROOT CAUSE DETERMINATION AND PROVIDE EARLY IDENTIFICATION OF ADVERSE TRENDS
- QA AUDITS OF ISI / IST PROGRAM AS REQUIRED BY 10 CFR 50, APPENDIX B WERE ROUTINELY CONDUCTED OF BOTH THE STATION AND CORPORATE ISI / IST GROUPS

CORRECTIVE ACTIONS TAKEN

ASCO SOVs

- REVIEWED UNIT 1 AND UNIT 2 VALVE HISTORIES
- PERFORMED ADDITIONAL VALVE STROKING PRIOR TO RESTART OF UNIT 1 AND ON UNIT 2 WHILE AT POWER
- DEVELOPED AND APPROVED A JCO FOR UNIT 2 VALVES WHICH COULD NOT BE SAFELY STROKED AT POWER
- SHUT DOWN UNIT 2 ON FEBRUARY 12, 1988 FOR VALVE TESTING AND CORRECTIVE ACTION
- DISCRETIONARY ENFORCEMENT WAS GRANTED FOR ONE UNIT 1 VALVE WHICH COULD NOT BE STROKED SAFELY AT POWER - CORRECTIVE ACTION WAS TAKEN MARCH 18, 1988
- INCREASED SURVEILLANCE FREQUENCY OF ASCO SOVs IN IST PROGRAM TO 31 DAYS

CORRECTIVE ACTIONS TAKEN

ASCO SOVs (CONT'D)

- **REPLACED UNIT 2 SOV EXHAUST TUBING WITH PIPE ELBOWS**
- **REPLACED EXHAUST PORT LINES ON 3 UNIT 1 VALVES WITH PIPE ELBOWS BASED ON EVALUATION OF STROKE TIMES.**
- **INSPECTED FOUR MODEL 8321 (PISTON TYPE) AND SEVEN MODEL 206-380 (LEVER TYPE) ASCO SOVs AND REVIEWED WITH ASCO**
- **PERFORMED LABORATORY ANALYSIS OF MODEL 206-380 SOV**

CORRECTIVE ACTIONS TAKEN

ISI / IST PROGRAM

- REVIEWED VALVE STROKE HISTORIES TO ENSURE VALVES WERE IN ALERT, IF REQUIRED BY ASME CODE, AND TO IDENTIFY ANY ADVERSE TREND
- REVIEWED VALVES AND PUMPS IN ALERT STATUS TO ENSURE AUGMENTED SURVEILLANCES ARE BEING PERFORMED
- STRENGTHENED NOTIFICATION AND FOLLOWUP FOR PUMPS AND VALVES IN ALERT
- ISSUED OPERATIONS DIRECTIVE TO CLARIFY THE PROCESS FOR DOCUMENTING PERIODIC TESTS
- ISSUED MANAGEMENT AND OPERATIONS DIRECTIVES TO CLARIFY POLICY ON VOIDING WORK ORDERS
- ASSIGNED ENGINEER TO MAINTENANCE FOR ROOT CAUSE EVALUATION OF EQ FAILURES (INCLUDES IST PROGRAM VALVES)
- UPGRADED ADMINISTRATIVE PROCEDURE FOR PUMP AND VALVE IST PROGRAM

CORRECTIVE ACTIONS TO BE TAKEN

ASCO SOVs

- **REPLACE REMAINING UNIT 1 EXHAUST PORT LINE ELBOWS (NEXT COLD SHUTDOWN)**
- **COMPLETE ROOT CAUSE EVALUATION OF ASCO SOV FAILURES INCLUDING INSTRUMENT AIR PURITY AND NEED FOR PERIODIC VALVE REPLACEMENT (DECEMBER, 1988)**

ISI / IST PROGRAM

- **NEW ORGANIZATIONAL EMPHASIS ON NDE / ISI FUNCTIONS AT CORPORATE LEVEL (APRIL 1, 1988)**
- **CONDUCT AN INDEPENDENT TECHNICAL REVIEW OF THE STATION ISI / IST PROGRAM AND IMPLEMENTATION (APRIL 30, 1988)**
- **QUALITY ASSURANCE DEPARTMENT TO CONDUCT A PERFORMANCE-BASED SURVEILLANCE AUDIT OF THE IST PROGRAM (APRIL 30, 1988)**

CORRECTIVE ACTIONS TO BE TAKEN

ISI / IST PROGRAM (CONT'D)

- **COVER NEW PUMP AND VALVE IST PROGRAM IN CONTINUING TRAINING (JULY 31, 1988)**
- **ENHANCE ISI PERIODIC TEST PROCEDURES (OCTOBER 31, 1988)**
- **UPGRADE STATION CORRECTIVE ACTION PROGRAM TO ENHANCE ROOT CAUSE DETERMINATION AND PROVIDE EARLY IDENTIFICATION OF ADVERSE TRENDS (DECEMBER, 1988)**
- **OP 1-A CHECKLIST FOR UNIT STARTUP FROM COLD SHUTDOWN TO BE REVISED TO REQUIRE ISI SIGNOFF (APRIL 30, 1988)**

SAFETY SIGNIFICANCE

JUSTIFICATION FOR CONTINUED OPERATION PROVIDED BY ONE OR MORE OF THE FOLLOWING:

- VALVES OPERABLE BY TECHNICAL SPECIFICATIONS STROKE TIME REQUIREMENTS
- INITIATING EVENT FOR PREVIOUS FAILURES IDENTIFIED
- CORRECTIVE ACTIONS (BLOWDOWN OF AIR LINES, SOV REPLACEMENT, VALVE EXERCISING) WERE EFFECTIVE
- REDUNDANT VALVES WERE OPERABLE
- POTENTIAL CONSEQUENCES ARE GREATLY REDUCED BY EXPECTED OPERATOR AND SYSTEM ACTIONS

REVIEWED WITH NRC

**QUALITY ASSURANCE AUDITS
OF ISI / IST PROGRAM**

NAPS AUDIT N-85-18 - CORRECTIVE ACTION

- 2 FINDINGS
- POST-MAINTENANCE TESTING OF COLD SHUTDOWN VALVES

relief request to NRC (?)

NAPS INSPECTION REPORT IR-N-85-772

- TESTING OF MAIN STEAM CODE SAFETY VALVES

→ one left to determine set point

CORPORATE AUDIT N-86-79 - INSERVICE INSPECTION

- 8 FINDINGS
- ISI MANUAL REVISION

NAPS AUDIT N-86-21 - INSERVICE INSPECTION

- 1 FINDING
- 5 AREAS NEEDING PROGRAMS, PROCEDURES, OR PROGRAM SUMMARIES

NAPS ACTIVITY REPORT AR-N-86-1647

- POST-MAINTENANCE TESTING

NAPS AUDIT N-87-21 - INSERVICE INSPECTION

- 1 FINDING
- UNIT 2 40 MONTH PLAN NOT IN STATION RECORDS

CONCLUSIONS

- QA AUDIT PROGRAM IS ADEQUATE
- IST PROGRAM IS ADEQUATE
- VALVE PROGRAM IS CURRENTLY IN COMPLIANCE WITH ASME SECTION XI AND TECH SPECS
- INCREASED EMPHASIS ON EFFECTIVE IMPLEMENTATION IS BEING MADE
- CORRECTIVE ACTIONS HAVE BEEN IDENTIFIED AND ARE BEING IMPLEMENTED ON A PRIORITY BASIS
- NONCOMPLIANCE WITH ASME CODE FOR AFFECTED ASCO SOV TRIP VALVES HAD MINIMAL SAFETY SIGNIFICANCE