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JAN 17 1991

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

Virginia Electric and Power Company
ATTN: Mr. W. L. Stewart
Senior Vice President - Nuclear
5000 Dominion Boulevard
Glen Allen, VA 23060

Gentlemen:

SUBJECT: ENFORCEMENT CONFERENCE SUMMARY
(NRC INSPECTION REPORT NOS. 50-338/90-29 AND 50-339/90-29)

This letter refers to the Enforcement Conference held at our request on January 8, 1991. This meeting concerned activities authorized for your North Anna facility. The issues discussed at this conference related to the service water/recirculation spray system operability. A list of attendees, a meeting summary, and a copy of your handout are enclosed. We are continuing our review of these issues to determine the appropriate enforcement action.

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 matter, please contact us.

Sincerely,

Original signed by

Luis A. Reyes, Director
Division of Reactor Projects

Enclosures:
1. List of Attendees
2. Meeting Summary
3. Handout

cc w/encls:
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Vice President - Nuclear Operations
Virginia Electric & Power Company
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Glen Allen, VA 23060

(cc w/encls cont'd - See pag 2)

IE01

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bcc w/encls: See page 3)

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01/17/91	01/17/91	01/17/91	01/17/91	01/ /91

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ENCLOSURE 1

LIST OF ATTENDEES

Virginia Electric and Power Company

W. Stewart, Senior Vice President, Nuclear
E. Harrell, Vice President, Nuclear Operations
F. Moore, Vice President, Nuclear Engineering Services
G. Kane, Station Manager, North Anna
J. Stall, Assistant Station Manager, North Anna
M. Bowling, Manager, Nuclear Licensing
D. Sommers, Licensing Supervisor, Surry

Nuclear Regulatory Commission

J. Milhoan, Deputy Regional Administrator, Region II (RII)
E. Merschoff, Deputy Director, Division of Reactor Projects (DRP), RII
T. Peebles, Branch Chief, Division of Reactor Safety, RII
M. Sinkule, Branch Chief, DRP, RII
P. Fredrickson, Section Chief, DRP, RII
M. Lesser, Senior Resident Inspector, North Anna, DRP, RII
B. Uryc, Senior Enforcement Coordinator, RII
G. Jenkins, Director, Enforcement and Investigation Coordination Staff (EICS), RII
W. Holland, Senior Resident Inspector, Surry, DRP, RII
G. Belisle, Section Chief, DRP, RII
A. Ruff, Project Engineer, DRP, RII
H. Berkow, Director, Project Directorate II-2, Office of Nuclear Reactor Regulation (NRR)
L. Engle, Licensing Project Manager, NRR

NRC Representatives (Participation by Telecon)

R. Pedersen, Office of Enforcement (OE)
A. Allmon, OE

ENCLOSURE 2

ENFORCEMENT CONFERENCE SUMMARY

An Enforcement Conference was held at the NRC's Region II Office with Virginia Electric and Power Company (Virginia Power) on January 8, 1991, to discuss North Anna's service water/recirculation spray systems operability as discussed in NRC Inspection Report 50-338,339/90-29 dated December 28, 1990. After the NRC Deputy Regional Administrator opened the meeting by briefly discussing the specific NRC concerns, the Senior Vice President - Nuclear, provided opening remarks for Virginia Power. He stated that they had thoroughly investigated the issue and concluded that the health and safety of the public were not affected, that no significant safety hazard existed, and that their presentation would satisfy the many concerns raised by the NRC.

The Assistant Station Manager gave the formal presentation which followed the items and topics listed in a handout (Enclosure 3). Questions that were asked by the NRC participants were answered satisfactorily by the licensee's representatives.

The safety significance and evaluation issues as listed in Enclosure 3 were discussed in detail. Virginia Power emphasized that there was no significant safety hazard for the specific plant configuration, that the item was reported to the NRC (LER N1-90-012-000), and that the NRC was kept informed of all aspects on the concern via the Resident Inspector.

The NRC Deputy Regional Administrator closed the meeting by thanking Virginia Power for the presentation.

ENCLOSURE 3

VIRGINIA POWER

NORTH ANNA POWER STATION

ENFORCEMENT CONFERENCE

JANUARY 8, 1991

RECIRCULATION SPRAY HEAT EXCHANGER OPERABILITY

AGENDA

- EVENT ASSESSMENT
- ISSUES
- DESIGN BASES AND SYSTEM DESCRIPTION
- TECHNICAL SPECIFICATION AND ADMINISTRATIVE REQUIREMENTS
- CORRECTIVE ACTIONS
- SAFETY SIGNIFICANCE
- CONCLUSIONS

EVENT ASSESSMENT

WHEN A UNIT WAS SHUTDOWN WITH ONE OF ITS EMERGENCY DIESEL GENERATORS OUT OF SERVICE FOR GREATER THAN 72 HOURS AND THE OTHER UNIT OPERATING IN MODES 1-4, TECHNICAL SPECIFICATION 3.0.5 FOR THE SHUTDOWN UNIT WAS NOT APPLIED TO THE OPERATING UNIT.

ALTHOUGH ALL TECHNICAL SPECIFICATIONS FOR THE SERVICE WATER SYSTEM AND EMERGENCY DIESEL GENERATORS WERE MET FOR BOTH UNITS, THE MORE CONSERVATIVE ADMINISTRATIVE CONTROLS WERE NOT FULLY COMPLIED WITH BECAUSE ONE SERVICE WATER PUMP DID NOT HAVE ITS RESPECTIVE EMERGENCY POWER SUPPLY AVAILABLE FROM THE SHUTDOWN UNIT.

ISSUES

- ADEQUACY OF SERVICE WATER TECHNICAL SPECIFICATION
- FAILURE TO PERFORM 10 CFR 50.59 EVALUATION FOR DEVIATION FROM CCHX OPERATIONS AS DESCRIBED IN UFSAR
- EFFECTIVENESS OF PREVIOUS ESCALATED ENFORCEMENT CORRECTIVE ACTIONS
- SAFETY SIGNIFICANCE OF REDUCED SERVICE WATER FLOW TO THE RECIRCULATION SPRAY HEAT EXCHANGERS

DESIGN BASES FOR CONTAINMENT DEPRESSURIZATION

- LIMITING PEAK PRESSURE IS 45 PSIG
- LIMITING PEAK TEMPERATURE IS 280°F
- RETURN CONTAINMENT TO SUBATMOSPHERIC PRESSURE WITHIN ONE HOUR AND MAINTAIN SUBATMOSPHERIC CONDITIONS THEREAFTER
- REQUIRED SERVICE WATER FLOW TO THE RECIRCULATION SPRAY HEAT EXCHANGERS IS 9000 GPM (i.e., 2 RSHXs)

DESIGN BASES FOR SERVICE WATER SYSTEM

- SIMULTANEOUS LOCA FOR ONE UNIT AND LOSS OF OFFSITE POWER FOR BOTH UNITS (ASSUMING A SINGLE FAILURE OF LOSS OF ONE EMERGENCY DIESEL GENERATOR FOLLOWING THE LOCA)

- REQUIRED SERVICE WATER FLOW, WITH ONE SERVICE WATER PUMP PER HEADER THROUGH FOUR RSHXs, ONE CCHX AND OTHER REQUIRED LOADS IS 30,362 GPM

- REQUIRED SERVICE WATER FLOW THROUGH FOUR RSHXs IS 18,000 GPM

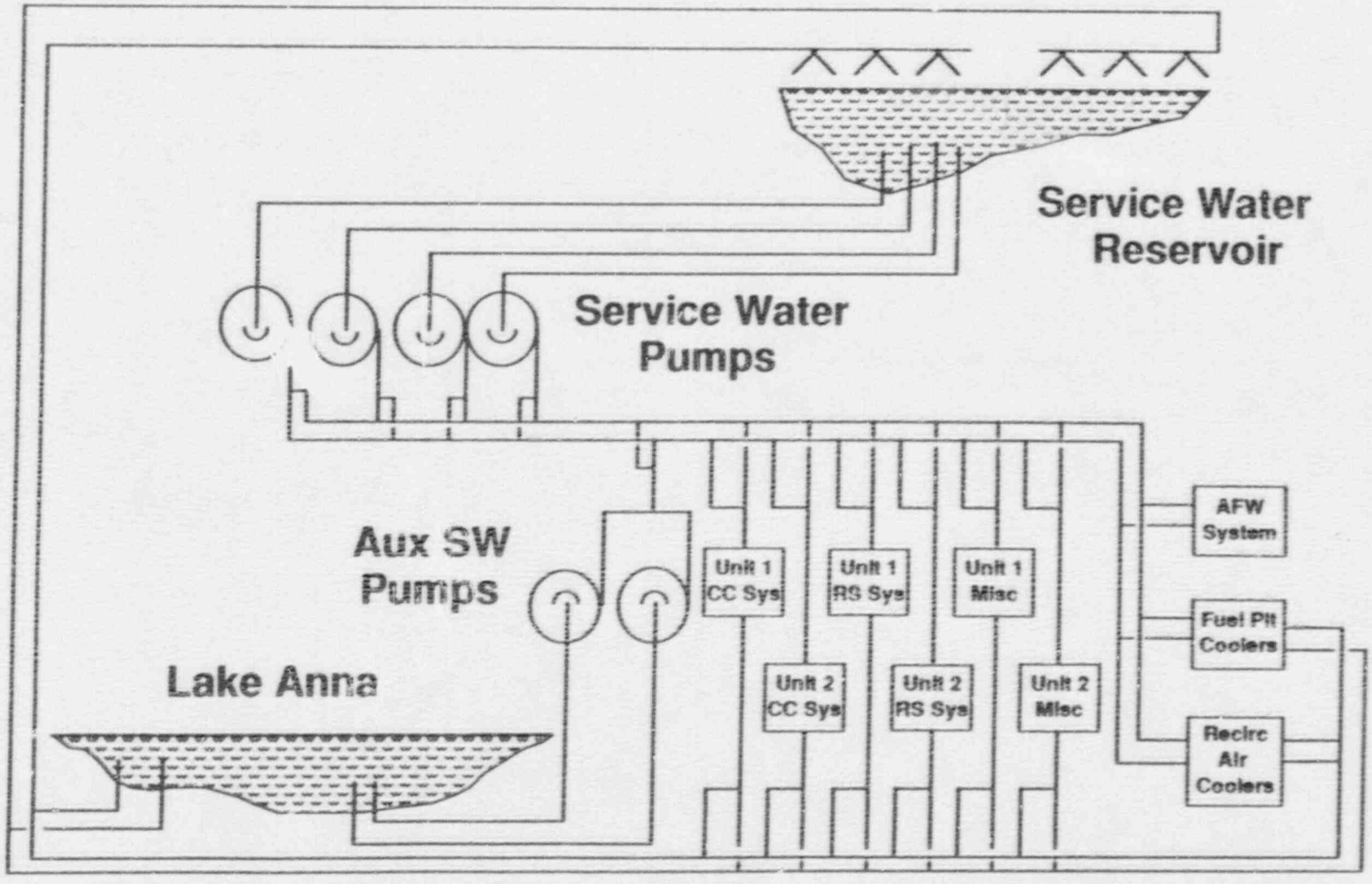
DESIGN CRITERIA

10 CFR 100 LIMITS

- 25 REM WHOLE BODY AND 300 REM THYROID DOSE AT THE EXCLUSION AREA BOUNDARY DURING THE FIRST TWO HOURS

GDC 19 LIMITS

- 5 REM WHOLE BODY AND 30 REM THYROID TO THE MAIN CONTROL ROOM DURING THE FIRST 30 DAYS



SERVICE WATER SYSTEM

SERVICE WATER SYSTEM
TECHNICAL SPECIFICATION REQUIREMENTS

- TECHNICAL SPECIFICATION 3.7.4.1: AT LEAST TWO SERVICE WATER LOOPS (SHARED WITH UNIT 2) SHALL BE OPERABLE.

  APPLICABILITY: MODES 1, 2, 3 AND 4.

  ACTION: WITH ONLY ONE SERVICE WATER LOOP OPERABLE, RESTORE AT LEAST TWO LOOPS TO OPERABLE STATUS WITHIN 72 HOURS OR BE IN AT LEAST HOT STANDBY WITHIN THE NEXT 6 HOURS AND COLD SHUTDOWN WITHIN THE FOLLOWING 30 HOURS.

NOTE: THERE ARE NO TECHNICAL SPECIFICATIONS FOR SERVICE WATER OPERABILITY IN MODES 5 AND 6

TECHNICAL SPECIFICATION 3.8.1.1
REQUIREMENTS FOR AC ELECTRICAL POWER

MODE 1, 2, 3 AND 4 REQUIREMENTS

A. TWO PHYSICALLY INDEPENDENT CIRCUITS BETWEEN THE OFFSITE TRANSMISSION NETWORK AND THE ONSITE CLASS 1E DISTRIBUTION SYSTEM, AND

B. TWO SEPARATE AND INDEPENDENT DIESEL GENERATORS

MODE 5 AND 6 REQUIREMENTS

A. ONE CIRCUIT BETWEEN THE OFFSITE TRANSMISSION NETWORK AND THE ONSITE CLASS 1E DISTRIBUTION SYSTEM, AND

B. ONE INDEPENDENT DIESEL GENERATOR

TECHNICAL SPECIFICATION 3.0.5
REQUIREMENTS FOR
EMERGENCY POWER SOURCES

WHEN A SYSTEM, SUBSYSTEM, TRAIN, COMPONENT OR DEVICE IS DETERMINED TO BE INOPERABLE SOLELY BECAUSE ONE OF ITS POWER SOURCES IS INOPERABLE, IT MAY BE CONSIDERED OPERABLE FOR THE PURPOSE OF SATISFYING THE REQUIREMENTS OF IT APPLICABLE LIMITING CONDITIONS FOR OPERATION PROVIDED:

(1) ITS CORRESPONDING NORMAL OR EMERGENCY POWER SOURCE IS OPERABLE

(2) ALL OF ITS REDUNDANT SYSTEM(S), SUBSYSTEM(S), TRAIN(S), COMPONENT(S) AND DEVICE(S) ARE OPERABLE, OR LIKEWISE SATISFY THE REQUIREMENTS OF THIS SPECIFICATION.

NOTE: THIS SPECIFICATION IS NOT APPLICABLE IN MODES 5 OR 6.

ADEQUACY OF SERVICE WATER TECHNICAL SPECIFICATIONS

- PRESENT SERVICE WATER TECHNICAL SPECIFICATIONS MAY NOT BE CONSERVATIVE FOR ALL MODES OF OPERATION
- RECOGNIZED BY VIRGINIA POWER IN OCTOBER OF 1988 AND REVIEWED WITH THE NRC IN THE MAY 1989 CONFERENCE
- APPROPRIATE ADMINISTRATIVE CONTROLS WERE DEVELOPED AND IMPLEMENTED TO ENSURE OPERABILITY OF SERVICE WATER AND RECIRCULATION SPRAY SYSTEMS
- MERITS TECHNICAL SPECIFICATION SUBMITTED ON THE SERVICE WATER SYSTEM TO ADDRESS THE LACK OF CONSERVATISM
- PRESENT TECHNICAL SPECIFICATION REQUIREMENTS WERE FULLY MET AT ALL TIMES

SERVICE WATER OPERATING RESTRICTIONS
STANDING ORDER 177

OBJECTIVE

- ENSURE THE SERVICE WATER SYSTEM CAN SUPPLY ADEQUATE FLOW TO EQUIPMENT IN THE EVENT OF A CONTAINMENT DEPRESSURIZATION ACTUATION

CONTENT

- MAINTAIN ALL FOUR SERVICE WATER PUMPS OPERABLE AND ALL FOUR EMERGENCY DIESEL GENERATORS OPERABLE OR TAKE APPROPRIATE COMPENSATORY MEASURES

FAILURE TO PERFORM 10 CFR 50.59 EVALUATION FOR DEVIATION FROM CCHX OPERATIONS DESCRIBED IN UFSAR

- SERVICE WATER FLOW BALANCE TESTS WERE PERFORMED TO DETERMINE ACCEPTABLE OPERATING CONFIGURATIONS
- UFSAR ALLOWS FOR TWO CCHX OPERATION PER UNIT DURING PLANT COOLDOWN MODES
- UFSAR DESCRIPTION OF TWO CCHX OPERATION PER UNIT ALONG WITH FLOW TEST RESULTS FORMED THE ENGINEERING BASIS FOR TWO CCHX OPERATION PER UNIT DURING NORMAL OPERATING MODES
- TWO CCHX OPERATION PER UNIT DURING NORMAL OPERATING MODES OF SW SYSTEM WAS REVIEWED AND APPROVED BY THE STATION NUCLEAR SAFETY AND OPERATING COMMITTEE
- A 10 CFR 50.59 EVALUATION FOR TWO CCHX OPERATION PER UNIT DURING NORMAL OPERATING MODES WAS SUBSEQUENTLY COMPLETED WITH NO UNREVIEWED SAFETY QUESTIONS

EFFECTIVENESS OF PREVIOUS ESCALATED ENFORCEMENT CORRECTIVE ACTIONS (IR 89-14)

- STANDING ORDER 165 AND SUBSEQUENT REVISIONS DID NOT ANTICIPATE EVERY POSTULATED CONDITION FOR OPERATION AND THEREFORE WAS NOT ADEQUATELY INCORPORATED INTO OPERATING DOCUMENTS IN EVERY CASE.

- REVISIONS TO STANDING ORDER 165 WERE MADE AS ENGINEERING EVALUATIONS FURTHER DEFINED ALLOWABLE OPERATING CONFIGURATIONS

- ALL OTHER COMMITMENTS WERE EFFECTIVELY IMPLEMENTED

EFFECTIVENESS OF PREVIOUS ESCALATED ENFORCEMENT CORRECTIVE ACTIONS (IR 89-14) (CONTINUED)

- CLEANED THE CCHXs TO IMPROVE HEAT TRANSFER CAPABILITIES (COMMITMENT COMPLETED)
- FLOW BALANCE THE CCHXs USING ULTRASONIC FLOW METERS (COMMITMENT COMPLETED)
- SERVICE WATER PUMPS HEAD CURVES VERIFIED (COMMITMENT COMPLETED)
- ADJUSTED THE ELECTRIC AND MECHANICAL LIMITS ON THE SERVICE WATER INLET MOVs TO ACHIEVE REQUIRED FLOW THROUGH THE RSHXs (COMMITMENT COMPLETED)

EFFECTIVENESS OF PREVIOUS ESCALATED ENFORCEMENT CORRECTIVE ACTIONS (IR 89-14) (CONTINUED)

- ADMINISTRATIVELY PROHIBIT THROTTLING THE SERVICE WATER BYPASS MOVs (COMMITMENT COMPLETED - MOVs UPGRADED)

- REVISED MAINTENANCE PROCEDURES TO ENSURE LIMITS ARE PROPERLY SET AND CHECKED AFTER MAINTENANCE ON THE SERVICE WATER INLET MOVs TO THE RSHXs (COMMITMENT COMPLETED)

- REVISED APPROPRIATE DOCUMENTS TO REFLECT THE AS-LEFT LIMIT SWITCH SETTINGS OF THE SERVICE WATER INLET MOVs TO THE RSHXs (COMMITMENT COMPLETED)

IMMEDIATE CORRECTIVE ACTIONS

- VERIFIED COMPLIANCE WITH TECHNICAL SPECIFICATIONS
- ADMINISTRATIVELY RESTRICTED OPERATIONS TO ENSURE THAT DESIGN BASIS WAS MET
- REVIEWED BY THE STATION NUCLEAR SAFETY AND OPERATING COMMITTEE FOR REPORTABILITY
- PROMPT NOTIFICATION MADE TO THE NRC AND RESIDENT INSPECTOR
- PERFORMED 10 CFR 50.59 EVALUATION

COMPLETED CORRECTIVE ACTIONS

- OPERATIONS STANDING ORDER 177 IMPLEMENTED TO ENSURE THE SW SYSTEM CAN SUPPLY ADEQUATE FLOW TO EQUIPMENT IN THE EVENT OF A DBA AND TO ENSURE AT LEAST 3 SW PUMPS ARE OPERABLE
- SERVICE WATER SYSTEM DESIGN BASIS DOCUMENTATION COMPLETED
- SUBMITTED LER N1 90-012-00
- REVISED STATION PROCEDURES TO ADDRESS INOPERABLE SW PUMPS
- SUBMITTED MERITS TECHNICAL SPECIFICATION TO DEFINE ACCEPTABLE SERVICE WATER PUMP OPERATING CONFIGURATIONS

ADDITIONAL ENHANCEMENTS

- SUBMIT TECHNICAL SPECIFICATION CHANGE TO CLARIFY SERVICE WATER PUMP AND POWER SOURCE REQUIREMENTS
- ONGOING SERVICE WATER UPGRADE PROCESS - CONTINUING SERVICE WATER FLOW BALANCE

SAFETY SIGNIFICANCE

MINIMUM SAFEGUARDS ANALYSIS (DBA)

- CONTAINMENT NOT REDUCED TO SUBATMOSPHERIC PRESSURE WITHIN FIRST HOUR
- OFFSITE DOSES WITHIN 10 CFR 100 CRITERIA
- CONTROL ROOM DOSES WITHIN GDC 19 CRITERIA
- PROBABILITY OF OCCURRENCE IS LOW (5.1×10^{-9} PER YEAR)
- SINCE THE FLOW IS MAINTAINED FROM AT LEAST ONE LHSI PUMP, ACTUAL FUEL TEMPERATURES WOULD NOT EXCEED THOSE TEMPERATURES ASSOCIATED WITH FUEL FAILURES
- MAXIMUM CONTAINMENT PRESSURES ARE NOT INCREASED SO THE PROBABILITY OF CONTAINMENT FAILURE IS NOT INCREASED

NORMAL SAFEGUARDS ANALYSIS (OFFSITE POWER AVAILABLE)

- CONTAINMENT DEPRESSURIZES WITHIN FIRST HOUR
- OFFSITE DOSES WITHIN 10 CFR 100 AND GDC 19 CRITERIA

ACTUAL AVAILABLE CONTAINMENT DEPRESSURIZATION CAPABILITY EXCEEDED THAT ASSUMED IN THE DESIGN BASIS ANALYSIS

CONCLUSIONS

- ALL SERVICE WATER ISSUES IN THE MAY 1989 ENFORCEMENT CONFERENCE WERE LICENSEE IDENTIFIED
- AGGRESSIVELY PURSUED FURTHER UNDERSTANDING OF BEST WAY TO OPERATE SYSTEM
- NRC RESIDENT INSPECTOR WAS KEPT INFORMED OF CONTINUING ENGINEERING EVALUATION
- FORMALLY REPORTED TO THE NRC
- ALL REQUIRED CORRECTIVE ACTIONS COMPLETED
- NO SIGNIFICANT SAFETY HAZARD EXISTED
- THE HEALTH AND SAFETY OF THE PUBLIC WERE NOT AFFECTED