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NUDOES

VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261

September 26, 1997

Mr. James Lieberman, Director
Office of Enforcement
United States Nuclear Regulatory Commission
One White Flint North
11555 Rockville Pike
Rockville, MD 20852-2738

Serial No. 97-516
SPS/BCB R2.1
Docket Nos. 50-280
50-281
License Nos. DPR-32
DPR-37

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PUBLIC DOCUMENT ROOM

Dear Mr. Lieberman:

VIRGINIA ELECTRIC AND POWER COMPANY
SURRY POWER STATION UNITS 1 AND 2
REPLY TO A NOTICE OF VIOLATION
NRC INSPECTION REPORT NOS. 50-280/97-01, 50-281/97-01

We have reviewed Inspection Report Nos. 50-280/97-01 and 50-281/97-01 dated February 20, 1997, and your August 29, 1997 letter and enclosed Notice of Violation for Surry Units 1 and 2. While plant safety and materiel condition have been maintained at a high level, we recognize that our implementation of the Maintenance Rule was not adequate. We have carefully re-examined our approach to the implementation of the Maintenance Rule program and have conducted an independent assessment of the management factors involved. As discussed at the March 11, 1997, predecisional enforcement conference, we have addressed the identified weaknesses and have implemented a recovery plan to address the specific Maintenance Rule program issues. In addition, we have clarified the self-assessment program requirements to ensure that identified deviating conditions are resolved through the corrective action program.

As part of the recovery plan, a dedicated team was established to revise and revalidate Virginia Power's Maintenance Rule program. The team essentially redeveloped the entire program to ensure consistency with NUMARC 93-01 and compliance with 10 CFR 50.65. Independent assessments were also performed during the course of the recovery effort to confirm and enhance the program redevelopment. The results of the recovery team effort were discussed with the NRC at the Region II office on August 4, 1997.

Additional programmatic corrective actions and enhancements are discussed in the attached violation response, as well as the corrective actions related to the specific examples cited in the violations. These actions have achieved and will enable us to maintain compliance with the Maintenance Rule.

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We have no objection to this letter being made a part of the public record. Please contact us if you have any questions or require additional information.

Very truly yours,

James P. O'Hanlon

James P. O'Hanlon
Senior Vice President - Nuclear

No additional commitments are made in response to the Notice of Violation in NRC Inspection Report Nos. 50-280/97-01 and 50-281/97-01.

Attachment

cc: Regional Administrator
U. S. Nuclear Regulatory Commission
Region II
Atlanta Federal Center
61 Forsyth Street, SW, Suite 23T85
Atlanta, Georgia 30303

Mr. R. A. Musser
NRC Senior Resident Inspector
Surry Power Station

REPLY TO A NOTICE OF VIOLATION
NRC INSPECTION CONDUCTED JANUARY 13 - 17, 1997
SURRY POWER STATION UNITS 1 AND 2
INSPECTION REPORT NOS. 50-280/97-01, 50-281/97-01

NRC COMMENT:

"During an NRC inspection conducted between January 13 and 17, 1997, violations of NRC requirements were identified. In accordance with the 'General Statement of Policy and Procedures for NRC Enforcement Actions,' NUREG 1600, the NRC proposes to impose a civil penalty pursuant to Section 234 of the Atomic Energy Act of 1954, as amended (Act), 42 U.S.C. 2282, and 10 CFR 2.205. The particular violations and associated civil penalty are set forth below:

A. 10 CFR 50.65(a)(1) requires, in part, that the holders of an operating license shall monitor the performance or condition of structures, systems, or components (SSCs) within the scope of the rule as defined by 10 CFR 50.65(b), against licensee-established goals, in a manner sufficient to provide reasonable assurance that such structures, systems, and components, are capable of fulfilling their intended functions. Such goals shall be established commensurate with safety. When the performance or condition of a structure, system, or component does not meet established goals, appropriate corrective action shall be taken.

Contrary to 10 CFR 50.65(a)(1), as of January 13, 1997, the licensee failed to monitor the performance and establish goals commensurate with safety for the emergency switch gear heating ventilation and air conditioning system, as required by 10 CFR 50.65(a)(1), in a manner sufficient to provide reasonable assurance that such a structure, system, and component, was capable of fulfilling its intended functions. The emergency switch gear heating ventilation and air conditioning system is a system required in order for the facility to shut down the reactor and maintain it in a safe shutdown condition. (01013)

B. 10 CFR 50.65(a)(1) requires, in part, the holders of an operating license shall monitor the performance or condition of SSCs, as defined by 10 CFR 50.65(b), against licensee-established goals, in a manner sufficient to provide reasonable assurance that such structures, systems, and components are capable of fulfilling their intended functions. When the performance or condition of a structure, system, or component does not meet established goals, appropriate corrective action shall be taken.

10 CFR 50.65(a)(2) requires, in part, that monitoring as specified in 10 CFR 50.65 Section (a)(1) is not required where it has been demonstrated that the performance or condition of a structure, system, or

component is being effectively controlled through the performance of appropriate preventive maintenance, such that the structure, system, or component remains capable of performing its intended function.

Contrary to 10 CFR 50.65(a)(2), as of July 10, 1996, the time that the licensee elected to not monitor the performance or condition of certain SSCs against licensee-established goals pursuant to the requirements of Section (a)(1), the licensee failed to demonstrate that the performance or condition of SSCs within the scope of 10 CFR 50.65 had been effectively controlled through the performance of appropriate preventive maintenance, as evidenced by the following examples, each of which would constitute a separate violation:

(1) The licensee failed to demonstrate that the performance of the risk-significant, direct current power, emergency switch gear heating, ventilation and air conditioning (chillers), and service water systems, and the non-risk-significant emergency lighting and condensate polishing systems, had been effectively controlled through the performance of appropriate preventive maintenance in accordance with the requirements of 10 CFR 50.65(a)(2). Specifically, the licensee failed to evaluate the appropriateness of the performance of preventive maintenance on these systems prior to placing these SSCs under Section (a)(2). The evaluation of the appropriateness of the preventive maintenance system failures was not adequate because it failed to consider system failures prior to July 10, 1996. Without an evaluation of the appropriateness of preventive maintenance performed on these systems prior to July 10, 1996, the licensee was unable to demonstrate that the performance or condition of these systems were effectively controlled through the performance of appropriate preventive maintenance, such that the SSCs remain capable of performing their intended functions.

(2) The licensee failed to demonstrate that the performance of the non-risk-significant radiation monitors had been effectively controlled through the performance of appropriate preventive maintenance in accordance with the requirements of 10 CFR 50.65(a)(2). Specifically, the licensee failed to adequately evaluate the appropriateness of the performance of preventive maintenance on the radiation monitors prior to placing these SSCs under Section (a)(2). The evaluation of the appropriateness of the preventive maintenance was not adequate because it had failed to identify that maintenance performed on the system had not prevented excessive inoperability and unavailability of the radiation monitors such that the monitors may not have been capable of performing

their intended function of either (1) alerting the licensee that radiological set points had been exceeded, or (2) initiating an automatic safety system actuation.

(3) The licensee failed to demonstrate that the performance of the risk-significant reactor protection system (RPS) and safety injection actuation system (SIAS) were being effectively controlled through the performance of appropriate preventive maintenance in accordance with the requirements of 10 CFR 50.65(a)(2). Specifically, the licensee failed to demonstrate it had established adequate measures to evaluate the effectiveness of preventive maintenance on these risk significant SSCs prior to placing these SSCs under Section (a)(2) in that it used a standard that would allow up to three maintenance preventable functional failures (MPFF) per operating cycle. Allowing three MPFFs for the risk-significant RPS and SIAS would not demonstrate that the performance of the SSCs were being effectively controlled through appropriate preventive maintenance.

(4) The licensee failed to demonstrate that the performance of the risk-significant component cooling water pumps and the instrument air compressor had been effectively controlled through the performance of appropriate preventive maintenance in accordance with the requirements of 10 CFR 50.65(a)(2). Specifically, the licensee failed to establish any measure to evaluate the appropriateness of the performance of preventive maintenance on the component cooling water pumps and the instrument air compressor prior to placing these SSCs under Section (a)(2). Measures to evaluate the appropriateness of the preventive maintenance were necessary to demonstrate that the performance or condition of the components were being effectively controlled through appropriate preventive maintenance such that the component cooling water pumps and the instrument air compressor remain capable of performing their intended function.

(5) The licensee failed to demonstrate that the performance of the risk-significant reactor coolant system code safety valves had been effectively controlled through the performance of appropriate preventive maintenance in accordance with the requirements of 10 CFR 50.65(a)(2). Specifically, the licensee had failed to establish adequate measures to evaluate the appropriateness of the performance of preventive maintenance on the reactor coolant system code safety valves prior to placing these SSCs under Section (a)(2). The measures used in the evaluation of the appropriateness of the preventive maintenance were not adequate

because they failed to consider set point drift of the valves. Measures for the evaluation of set point drift were necessary because, if preventive maintenance fails to preclude change to the set point of the reactor coolant system code safety valves, the valves may not be capable of performing their intended function of protecting the reactor coolant system from over pressurizing and failing.

(6) The licensee failed to demonstrate that the performance of the risk-significant emergency service water system had been effectively controlled through the performance of appropriate preventive maintenance in accordance with the requirements of 10 CFR 50.65(a)(2). Specifically, the licensee failed to adequately evaluate the appropriateness of the performance of preventive maintenance on this system prior to placing this SSC under Section (a)(2). The evaluation of the appropriateness of the preventive maintenance system failures was not adequate because it failed to consider failures of periodic tests for system operability prior to July 10, 1996. Without an evaluation of the appropriateness of preventive maintenance performed on this system prior to July 10, 1996, the licensee was unable to demonstrate that the performance of the system was effectively controlled through the performance of appropriate preventive maintenance, such that this SSC remains capable of performing its intended function.

(7) The licensee failed to demonstrate that the performance of standby function of the electro-hydraulic control system, bearing cooling system, boric acid transfer pumps (emergency boration mode), auxiliary building heating, ventilation and cooling system, and the control room emergency ventilation system had been effectively controlled through performance of appropriate preventive maintenance in accordance with the requirements of 10 CFR 50.65(a)(2). Specifically, the licensee failed to establish any measures to evaluate the appropriateness of the performance of preventive maintenance on these SSCs prior to placing these SSCs under Section (a)(2). Without any measures to evaluate these standby functions, the licensee was unable to demonstrate that the performance or condition of these SSCs were effectively controlled through the performance of appropriate preventive maintenance, such that these SSCs remain capable of performing their intended function. (01023)

C. Technical Specification (TS) 6.4, Unit Operating Procedures, states in Part A.7, that detailed written procedures with appropriate checkoff lists and instructions shall be provided for preventive or corrective

maintenance operations which could have an effect on the safety of the reactor. Part D of TS 6.4 states that all procedures described in Specification 6.4.A shall be followed.

Virginia Power Station Administrative Procedure VPAP-0815, Maintenance Rule Program, Revision 3, and VPAP-2001, Station Planning and Scheduling, were established to provide instructions for preventive and corrective maintenance operations.

(1) VPAP-0815, Revision 3, included the screening criteria for cause determinations of Maintenance Preventable Functional Failures (MPFF), an activity which could have an effect on the safety of the reactor. Section 4.11 of VPAP-0815 included a requirement that a SSC within the scope of the Rule must experience a failure which resulted in a loss of risk-significant or standby train function and/or loss of a non-risk-significant system function that affected plant level monitoring criteria prior to screening for a MPFF.

Contrary to the above, as of January 13, 1997, the instructions provided in Virginia Power Station Administrative Procedure VPAP-0815, Revision 3, were not appropriate, in that VPAP-0815 did not prescribe adequate instructions regarding cause determinations for MPFFs in the main feedwater, chemical and volume control, and radiation monitoring systems. Specifically, Section 4.11 of VPAP-0815 did not provide instructions to allow for screening of MPFFs for a SSC within the scope of the Rule without experiencing a failure which resulted in a loss of risk-significant or standby train function and/or loss of a non-risk-significant system function that affected plant level monitoring criteria. During the inspection, examples of MPFFs were identified for the main feedwater, chemical and volume control, and radiation monitoring systems which had not been identified by the licensee due to this procedure inadequacy. Limiting the screening of functional failures to failures that actually cause plant transients does not provide assurance that the main feedwater system, the chemical and volume control system, and the radiation monitoring system remain capable of performing their intended function thereby affecting the safety of the reactor. (01033)

(2) VPAP-0815, Revision 3, Section 5.12, requires the Maintenance Rule Working Group to develop, review, and approve performance criteria for risk significant and Maintenance Rule structures, systems, and components.

Contrary to the above, the licensee failed to follow VPAP-0815 in that the performance criteria for the reactor protection system, a system where performance has an effect on the safety of the reactor, was changed on January 16, 1997 without approval of the Maintenance Rule Working Group as required by Section 5.12 of VPAP-0815. (01043)

(3) VPAP-2001, Revision 3, Section 6.7.2, requires that the approval of the Assistant Station Manager Operations and Maintenance be obtained whenever two or more risk-significant systems or components are to be unavailable which are not addressed in the site matrix for removing equipment from service during on line operations.

Contrary to the above, the licensee failed to obtain approval from the Assistant Station Manager Operations and Maintenance on October 17, 1996, when one pressurizer power operated relief valve was blocked and an instrument air compressor was unavailable (both risk-significant components whose removal from service would have an effect on the safety of the reactor and not addressed in the site matrix) as required by Section 6.7.2 of VPAP-2001. (01053)

These violations represent a Severity Level III problem (Supplement I).
Civil Penalty - $55,000"

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SURRY POWER STATION UNITS 1 AND 2
INSPECTION REPORT NOS. 50-280/97-01, 50-281/97-01

Violation A

1. Reason for the Violation, or, if Contested, the Basis for Disputing the Violation

The violation is correct as stated. As discussed at the predecisional enforcement conference at the NRC Region II office on March 11, 1997, Virginia Power failed to adequately implement the Maintenance Rule. This failure was caused by weaknesses in the development and execution of Virginia Power's Maintenance Rule program that resulted from 1) management's insufficient knowledge of the industry guidelines (i.e., NUMARC 93-01), 2) inadequate management oversight, 3) the lack of program ownership, and 4) the absence of a well defined implementation plan.

Due to the development and implementation weaknesses described above, the Maintenance Rule program was not consistent with the guidelines of NUMARC 93-01 and did not comply with all of the requirements of 10 CFR 50.65. As a result of these program deficiencies, we failed to properly monitor performance and establish goals for some structures, systems, and components (SSCs), as required by 10 CFR 50.65(a)(1), including the emergency switch gear (ESG) heating, ventilation, and air conditioning (HVAC) system.

2. Corrective Steps Which Have Been Taken and the Results Achieved

As discussed at the March 11, 1997, predecisional enforcement conference, a recovery plan was developed to address the Maintenance Rule program issues. As a part of the recovery plan, a dedicated Maintenance Rule Recovery Team was established to revise and revalidate Virginia Power's Maintenance Rule program. The team essentially redeveloped the entire program to ensure consistency with NUMARC 93-01 and compliance with 10 CFR 50.65. The results of the recovery team effort were discussed with the NRC at the Region II office on August 4, 1997.

Although normal maintenance and testing ensured the operability of the ESG HVAC system, the specific requirements of 10 CFR 50.65(a)(1) were not satisfied. To address the deficiencies cited in Violation A, appropriate goals and monitoring were established for the ESG HVAC air handling units (AHUs) in accordance with 10 CFR 50.65(a)(1). The (a)(1) goals were subsequently met

and the AHUs were recently returned to the normal (a)(2) performance monitoring category. An evaluation of the performance of the ESG HVAC chillers was also completed. Based on this evaluation, the chillers were placed in the (a)(1) performance monitoring category and appropriate goals and monitoring were established in accordance with 10 CFR 50.65(a)(1). These actions, in conjunction with routine maintenance and testing, provide reasonable assurance that the ESG HVAC system will remain capable of fulfilling its intended functions.

3. Corrective Steps Which Will be Taken to Avoid Further Violations

As described at the August 4, 1997, meeting with the NRC, the revised Maintenance Rule program presently implemented provides the framework to ensure future compliance with 10 CFR 50.65 and should preclude similar violations.

4. The Date When Full Compliance Will be Achieved

Full compliance with the Maintenance Rule was achieved on June 30, 1997, and was confirmed in our letter to the NRC, dated July 23, 1997 (Serial No. 97-410).

Violation B

1. Reason for the Violation, or, if Contested, the Basis for Disputing the Violation

The violation is correct as stated. As discussed in Section 1 of the response to Violation A, implementation weaknesses resulted in the development of a Maintenance Rule program that was not consistent with the guidelines of NUMARC 93-01 and did not comply with all of the requirements of 10 CFR 50.65. Due to these program deficiencies, we failed to demonstrate that the performance or condition of some SSCs had been effectively controlled through the performance of appropriate preventive maintenance, as required by 10 CFR 50.65(a)(2), including the examples cited in Violation B.

2. Corrective Steps Which Have Been Taken and the Results Achieved

The Maintenance Rule Recovery Team revised/established the performance criteria for the structures, systems, and components (SSCs) within the scope of the Maintenance Rule. This effort corrected the specific issues identified in the seven examples associated with Violation B and the related programmatic deficiencies that allowed these examples to occur. The performance criteria were revised/established on a functional level and were validated by the Maintenance Rule Expert Panel to ensure consistency with the latest Probabilistic Safety Analysis models and the NUMARC 93-01 criteria. The Maintenance Rule Recovery Team concurrently conducted a review of the previous three year's internal and external operating experience for the Maintenance Rule SSCs to collect reliability and unavailability data. This data was evaluated relative to the SSC performance criteria and the SSCs were placed in the (a)(1) or (a)(2) performance monitoring category, as appropriate.

The programmatic corrective actions discussed in Section 2 of the response to Violation A are also applicable to Violation B.

3. Corrective Steps Which Will be Taken to Avoid Further Violations

As discussed in Section 2 above, the revised Maintenance Rule program provides the framework to ensure future compliance with 10 CFR 50.65 and should preclude similar violations.

4. The Date When Full Compliance Will be Achieved

Full compliance with the Maintenance Rule was achieved on June 30, 1997, and was confirmed in our letter to the NRC, dated July 23, 1997 (Serial No. 97-410).

Violation C

1. Reason for the Violation, or, if Contested, the Basis for Disputing the Violation

The violation is correct as stated. As discussed in Section 1 of the response to Violation A, implementation weaknesses resulted in the development of a Maintenance Rule program that was not consistent with the guidelines of NUMARC 93-01 and did not comply with all of the requirements of 10 CFR 50.65. These program deficiencies were largely responsible for the examples cited in Violation C. The specific causes are discussed below.

The procedural inadequacies described in Example No. 1 of Violation C were caused by the improper and non-conservative application of the guidelines of NUMARC 93-01 during the development of the Maintenance Rule program.

Example No. 2 of Violation C was caused by a personnel error. Although the changes to the performance criteria for the reactor protection system had been discussed by the Maintenance Rule Working Group, the changes were not formally approved before the Maintenance Rule database was revised.

The lack of training with respect to Maintenance Rule program responsibilities and the resulting insufficient knowledge level led to the procedural compliance deviations described in Example No. 3 of Violation C. In addition, we identified that the SSC matrix that was being used to assess on-line maintenance risk was incomplete and did not address certain equipment configurations.

2. Corrective Steps Which Have Been Taken and the Results Achieved

The corrective actions that addressed the Maintenance Rule program development and implementation weaknesses are discussed in Section 2 of the response to Violation A and are also applicable to Violation C. The specific corrective actions related to the examples cited in Violation C are discussed below.

Example No. 1

Station Administrative Procedure VPAP-0815, "Maintenance Rule Program," has been carefully evaluated and revised by the Maintenance Rule Recovery Team to ensure that the program is consistent with NUMARC 93-01. The resulting procedural changes appropriately define maintenance rule functional failures (MRFFs) and maintenance preventable functional failures (MPFFs). The MRFF/MPFF evaluation forms in VPAP-0815 were also enhanced to ensure that the screening process is performed properly.

2. Corrective Steps Which Have Been Taken and the Results Achieved (Continued)

The corrective steps described in Section 2 of the response to Violation B ensured that MPFFs in the main feedwater, chemical and volume control, and radiation monitoring systems were identified and evaluated with respect to their performance criteria, goals, and monitoring.

Example No. 2

The performance criteria for the reactor protection system was reviewed and approved by the Maintenance Rule Working Group.

Training was conducted for appropriate personnel regarding their responsibilities in the implementation of the Maintenance Rule program, as delineated in VPAP-0815. This corrective action also addressed Example No. 3.

The Senior Vice-President, Nuclear, issued a memorandum to Nuclear Business Unit personnel, reinforcing management's expectations for complete compliance with the Maintenance Rule program. This corrective action also addressed Example No. 3.

Example No. 3

Station Administrative Procedure VPAP-2001, "Station Planning and Scheduling," has been revised to improve on-line maintenance practices. The procedural changes clarified the responsibilities for assessing the risk associated with the performance of on-line maintenance and changed the work planning/scheduling processes to ensure that risk is appropriately evaluated and that availability and reliability are reasonably balanced.

To facilitate the assessment of on-line maintenance risk, additional tools have been developed which provide a complete list of PSA risk significant components and an expanded PSA evaluation of on-line maintenance configurations. Appropriate Outage and Planning and Operations Department personnel have been trained in the use of these new tools.

3. Corrective Steps Which Will be Taken to Avoid Further Violations

The corrective steps described in Section 2 of the response to Violation C are sufficient to preclude similar violations.

4. The Date When Full Compliance Will be Achieved

Full compliance with the Maintenance Rule was achieved on June 30, 1997, and was confirmed in our letter to the NRC, dated July 23, 1997 (Serial No. 97-410).