UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
SAM NUNN ATLANTA FEDERAL CENTER
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ATLANTA, GEORGIA 30303-8931

April 6, 2004

Virginia Electric and Power Company
ATTN: Mr. David A. Christian
Senior Vice President and
Chief Nuclear Officer
Innsbrook Technical Center
5000 Dominion Boulevard
Glen Allen, VA 23060

SUBJECT: SURRY POWER STATION - NRC EXAMINATION REPORT
05000280/2004-301 AND 05000281/2004-301

Dear Mr. Christian:

During the period February 23 - March 2, 2004, the Nuclear Regulatory Commission (NRC) administered operating examinations to employees of your company who had applied for licenses to operate the Surry Power Station. At the conclusion of the examination, the examiners discussed the examination questions and preliminary findings with those members of your staff identified in the enclosed report. The written examination was administered by your staff on March 4, 2004.

All applicants passed both the written and operating examinations. There were three post examination comments submitted. The NRC post examination comment resolutions are included in this report as Enclosure 2.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Should you have any questions concerning this letter, please contact me at (404) 562-4638.

Sincerely,

/RA/

Michael E. Ernstes, Chief
Operator Licensing and
Human Performance Branch
Division of Reactor Safety

Docket Nos. 50-280, 50-281
License Nos. DPR-32, DPR-37

Enclosures: (See page 2)

Enclosures: 1. Report Details
2. NRC Resolutions to Surry Power Station Initial Post Exam Comments

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NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos.:	50-280, 50-281
License Nos.:	DPR-32, DPR-37
Report Nos.:	05000280/2004-301, 05000281/2004-301
Licensee:	Virginia Electric and Power Company (VEPCO)
Facility:	Surry Power Station, Units 1 & 2
Location:	5850 Hog Island Road Surry, VA 23883
Dates:	Operating Test - February 23 - March 2, 2004 Written Examination - March 4, 2004
Examiners:	Edwin Lea, Chief, Senior Operations Engineer Steven D. Rose, Chief (Under Instruction), Operations Engineer Timothy C. Kolb, Operations Examiner Mark A. Bates, Operations Engineer (Under Instruction)
Approved by:	M. Ernstes, Chief Operator Licensing and Human Performance Branch Division of Reactor Safety

Enclosure 1

SUMMARY OF FINDINGS

ER 05000280/2004-301, 05000281/2004-301; 2/23-3/2/2004 and 3/4/2004; Surry Power Station; Licensed Operator Examinations.

The NRC examiners conducted operator licensing initial examinations in accordance with the guidance of NUREG-1021, Draft Revision 9, “Operator Licensing Examination Standards for Power Reactors.” This examination implemented the operator licensing requirements identified in 10 CFR §55.41, §55.43, and §55.45.

The NRC administered the operating examination February 23 - March 2, 2004. The Surry Power Station training staff administered the written examination on March 4, 2004. The written examination, job performance measures (JPMs) and one scenario were developed by the NRC. The remaining scenarios (3) were developed by the Surry Power Station training staff from outlines developed by the NRC. All applicants, four Reactor Operators (RO) and six Senior Reactor Operators (SRO), passed both the operating and written examinations. All applicants were issued operator licenses commensurate with the level of examination administered.

No significant issues were identified.

Report Details

4. OTHER ACTIVITIES (OA)

4OA5 Operator Licensing Initial Examinations

a. Inspection Scope

The NRC developed the written examination, the NRC and licensee co-developed the operating examination in accordance with the guidelines specified in NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," Draft Revision 9. The NRC examination team reviewed the proposed examination. Examination changes agreed upon between the NRC and the licensee were made according to NUREG-1021 and incorporated into the final version of the examination materials.

The examiners reviewed the licensee's examination security measures while preparing and administering the examinations to ensure examination security and integrity complied with 10 CFR 55.49, Integrity of examinations and tests.

The examiners evaluated four Reactor Operator (RO) and six Senior Reactor Operator (SRO) applicants who were being assessed under the guidelines specified in NUREG-1021. The examiners administered the operating tests during the period February 23 - March 2, 2004. Members of the Surry Power Station training staff administered the written examination on March 4, 2004. The evaluations of the applicants and review of documentation were performed to determine if the applicants, who applied for licensees to operate the Surry Power Station, met the requirements specified in 10 CFR Part 55.

b. Findings

No findings of significance were identified.

The licensee's operating examination submittal was within the range of acceptability expected for a proposed examination. Four ROs and six SROs passed both the operating and written examinations. The licensee submitted three post examination comments concerning the written examination. The RO and SRO written examinations with answers and examination references, and licensee's post examination comments, may be accessed in the ADAMS system (ADAMS Accession Numbers, ML040890634, ML040890642, ML040890633).

4OA6 Meetings

Exit Meeting Summary

On March 2, 2004, the examination team discussed generic issues with Mr. Kenny Sloane and members of his staff. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

PARTIAL LIST OF PERSONS CONTACTED

Licensee personnel

K. Sloane, Director Nuclear Operations and Maintenance
D. Llewellyn, Manager Nuclear Training
P. Nelson, Supervisor Nuclear Shift Operations
J. Spence, Supervisor Nuclear Operations Training
M. Gabriele, Supervisor Nuclear Operations Support
B. Marshall, Lead License Class Instructor
S. Irwin, License Class Instructor
J. Ashley, Station Licensing Engineer

NRC personnel

G. McCoy, Senior Resident Inspector

NRC Resolutions to Surry Power Station Initial Post Exam Comments

1. Question #38

Facility Comment: Most trainees applied the Management standard for conservative decision making. If reactor trip is imminent, then manually trip the reactor and perform the immediate actions of E-0. The definition of IMMINENT is within one to two hours and continuing deteriorating conditions exist.

DNOS-0101, Nuclear Safety and Conservative Decision Making, states "Operators faced with unexpected or uncertain conditions will place the plant in a safe condition and will not hesitate, if necessary, to reduce power or trip the reactor."

The conditions provided in this question, one condensate pump running with feed pump suction pressure at 105 psig and decreasing, can only result if the only running condensate pump is also significantly degraded. This places the plant in a condition not considered in the development of AP-21.00, Loss of Main Feedwater Flow.

The Supervisor of Shift Operations said that he would not hesitate to trip the reactor given the conditions provided in the stem of the question.

We ran this scenario on the simulator and were unable to keep the unit online. It resulted in a reactor trip 100% of the time.

6 of 10 trainees chose answer (B).

Recommendations: Based on the above information, accept (B) as an alternate correct answer.

NRC Resolution: Recommendation accepted; the question has two correct answers (A and B). The NRC concurs that it is reasonable and conservative for an operator to manually trip the reactor with Main Feedwater pump suction pressure at 105 psig and slowly lowering. The stem conditions created the sense that the system conditions were continuing to degrade therefore, a natural assumption was that a reactor trip was imminent.

2. Question #41

Facility Comment: Question has no correct answer. If the battery charger DC output is lost, 1H1-1 cannot be the supply to Vital Bus 1/1A. When the battery charger is lost, the inverter via the DC Bus, supplies Vital Bus 1/1A not 1H1-2 as stated in choice (D).

Recommendations: Based on the above information, recommend dropping this question from the exam.

NRC Resolution: Recommendation not accepted. Facility comment that there is no correct answer to this question is incorrect. Given the conditions of Battery Charger DC Output for UPS 1A-1 reading zero amps, 1K-A8 (UPS SYSTEM TROUBLE) in alarm, and 1K-A7 (BATT SYSTEM 1A TROUBLE) in alarm, there is one correct answer. Answer (D) is correct for the following reasons:

- DC Bus 1A voltage remaining stable indicates that Battery 1A is not supplying the DC Bus; rather it is being supplied from a non-depleting source. UPS 1A-1 is not the source for the DC Bus due to the UPS 1A-1 Battery Charger DC Output indicating zero amps. The alternate source, UPS 1A-2, therefore, would be the source supplying DC Bus 1A.
- 1K-A8 will annunciate when the static switch is in the alternate position. With the static switch in the alternate position, the power supply to Vital Bus 1 and 1A would be 1H1-2.
- As stated in answer D, DC Bus 1A could be supplied by UPS 1A-2 as indicated by DC Bus voltage remaining stable and Vital AC Buses 1 and 1A could be supplied from 1H1-2. Thus, there is only one correct answer listed as an answer choice.
- A second possibility for supplying Vital Bus 1 and 1A would be from DC Bus 1A through the inverter; however, this option is not listed as an answer.

Based on this analysis, answer D is the only correct answer based on the initial conditions provided in the stem.

3. Question #66

Facility Comment: NOTE in 1-OP-VS-001 Page 17 of 51 states "If the Containment Purge Form allows greater than 3000 CFM but less than 20,000 CFM, 1-VS-MOV-100D will be used to obtain the desired flow. Fine tuning of purge flow using 1-VS-MOV-101 is allowed."

Step (m) on Page 17 states "Adjust 1-VS-MOV-100D and/or 1-VS-MOV-101 until the desired purge flow is indicated."

Since the stem of the question asked which valve is used to obtain the correct purge flow rate, some trainees applied the NOTE above and chose to do the final throttling with 1-VS-MOD-101 to obtain the final rate instead of continuing to throttle 1-VS-MOV-100D.

4 of 10 trainees chose answer (C).

Recommendations: Based on the above information, accept (C) as an alternate correct answer.

NRC Resolution: Recommendation not accepted. As stated in 1-OP-VS-001 (Page 17 of 51), fine tuning of flow rates is allowed using 1-VS-MOV-101. Answer choice (C) states that 1-VS-MOV-101 should be throttled instead of 1-VS-MOV-100D due to the low flow rate required by the Containment Purge Form. Answer choice (C) is incorrect because 1-VS-MOV-101 is NOT throttled instead of 1-VS-MOV-100D; rather it could be throttled in addition to 1-VS-MOV-100D. 1-VS-MOV-101 is not used due to the low flow rate, 1-VS-MOV-101 is simply used for fine tuning when flow rates are high between 3,000 and 20,000 cfm. 1-OP-VS-001 (Page 42 of 51) NOTE prior to step 5.10.22 states, "Physical limitations of 1-VS-MOV-101 will limit purge flow to approximately 3000 cfm for establishment of purge."