UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
SAM NUNN ATLANTA FEDERAL CENTER
61 FORSYTH STREET SW SUITE 23T85
ATLANTA, GEORGIA 30303-8931

September 27, 2000

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

SUBJECT: SAFETY SYSTEM DESIGN INSPECTION AT SURRY POWER STATION, UNITS 1 & 2 (NRC INSPECTION REPORT NOS. 50-280, 50-281/2000-07)

Dear Mr. Christian:

This refers to the inspection conducted onsite on July 24 - 28 and August 7 - 11, 2000, at your Surry Power Station Units 1 and 2. Subsequent to the onsite inspection, your staff provided additional information to the team for review. Our in office inspection of this additional information was completed August 29, 2000. The results of this inspection were discussed with Mr. E. Grecheck and other members of your staff on August 11, and September 12, 2000.

The inspection was an examination of activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. Within these areas, the inspection consisted of a selective examination of procedures and representative records and interviews with personnel. The inspection found that engineering activities generally supported the safe and reliable operation of the diesel generators and the related support and interface systems.

Based on the results of this inspection, one issue was evaluated under the risk significance determination process and was determined to be of very low safety significance (Green). This issue has been entered into your corrective action program. This issue is discussed in the attached inspection report.

In accordance with 10 CFR 2.790 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/NRC/ADAMS/index.html (the Public Electronic Reading Room).

Sincerely,

/RA by J. LENAHAN/ FOR

Kerry D. Landis, Chief
Engineering Branch
Division of Reactor Safety

Docket No.: 50-280, 50-281
License No.: DPR-32, DPR-37

Enclosure: NRC Inspection Report w/Attachment

cc w/encl:
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U. S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos.:	50-280, 50-281
License Nos.:	DPR-32, DPR-37
Report No.:	50-280, 281/00-07
Licensee:	Virginia Electric and Power Company (VEPCO)
Facility:	Surry Power Station, Units 1 & 2
Location:	5850 Hog Island Road Surry, VA 23883
Dates:	July 24 - August 11, 2000
Lead Inspector:	M. Widmann, Senior Resident Inspector, Virgil C. Summer Station, Branch 5 Division of Reactor Projects
Team Inspectors:	R. Cooney, P.E., Instrumentation and Controls Consultant P. Fillion, P.E., Reactor Inspector, Region II T. Fredette, Resident Inspector, Edwin I. Hatch R. Moore, Reactor Inspector, Region II
Accompanying Personnel:	E. Girard, Senior Reactor Inspector, Engineering Branch, Region II
Approved by:	J. J. Lenahan, Chief (Acting) Engineering Branch Division of Reactor Safety

Enclosure

SUMMARY OF FINDINGS

Surry Power Station
NRC Inspection Report Nos. 50-280, 281/00-07

IR 05000280-00-07, IR 05000281-00-07, on 7/24-28 and 8/7-11/00, Virginia Electric and Power Company, Surry Power Station. Safety System Design and Performance Capability of the diesel generators and related support and interface systems. Engineering activities supported safe and reliable operation of the systems. One Green findings was identified.

The inspection was conducted by a regional engineering team. The inspection identified one Green finding. The significance of findings is indicated by their color (Green, White, Yellow, Red) and was determined by the Significance Determination Process in Inspection Manual Chapter 0609. (See Attachment)

Cornerstone: Initiating and Mitigating Events

- GREEN. The team identified that two of the three cables that connects offsite power to the Reserve Station Transformers (RSSTs) had less insulation than specified in industry standards. A special analysis was performed by an NRC Region II Senior Reactor Analyst (SRA) to determine the effect on risk of the two RSST feeder cables having less than standard insulation thickness based on the 17 years that the cables had been in service. The risk screening analysis performed for the postulated cable failure indicated that there would be a slight increase in the Loss of Offsite Power (LOOP) initiation frequency resulting in a change in the Core Damage Frequency (CDF) of less than $1.0x10^{-6}$. The SRA's review concluded that the change in LOOP initiation frequency and the resultant change in CDF was GREEN (Section 1R21.22).

REPORT DETAILS

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R21 Safety System Design and Performance Capability (71111.21)

.1 SYSTEM NEEDS

.11 Energy Source

.111 Diesel Fuel Oil

a. Inspection Scope

The team reviewed design documentation, calculations, drawings, and installed equipment to verify that the sizing of the storage tanks and capacity of transfer pumps were adequate to provide the fuel requirements to operate diesels for the period of time assumed in accident analysis. Additionally, the station acceptance criteria for fuel oil quality were reviewed to verify these were consistent with licensing commitments and diesel vendor recommendations.

The team reviewed calculation EE-0423, Fuel Oil Level Setpoint, to assure that the available fuel in the day tank is always equal to or greater than 290 gallons as required by Technical Specification (TS) 3.16-1. The team also reviewed calculation 1250-122-C022, Unit 1 EDG Fuel Oil Transfer Flow Accuracy, Revision (Rev.) 0.

b. Findings

No findings of significance were identified.

.112 Starting Air

a. Inspection Scope

The team reviewed design documentation, drawings, and equipment specifications to verify that the air start capacity and storage capability was consistent with design base assumptions for EDGs and AAC diesel.

b. Findings

No findings of significance were identified.

.113 Electrical Power Source

a. Inspection Scope

The team reviewed design basis documents, calculations of record, and industry standards for sizing of batteries for the Engineered Safety Feature (ESF) 125 volt Direct Current (DC) main station batteries in order to verify that the batteries had been adequately sized for the 10 CFR 50.63 Station Blackout (SBO) four hour coping duration. The team evaluated the adequacy of the 125 volt DC power supplies for (1) EDG field flashing; (2) EDG exciter cubicle; (3) EDG engine control panels; and (4) EDG auxiliary fuel oil pumps. The team also evaluated the AAC diesel generator batteries.

b. Findings

No findings of significance were identified.

.12 Controls

a. Inspection Scope

The team reviewed the elementary wiring diagrams which depict permissives and EDG starting circuits for undervoltage and degraded voltage, safety injection, consequence limiting safeguards and manual initiation. The team reviewed the elementary wiring diagrams for sequencing all components that are required under safety injection, containment limiting safeguards and Loss of Offsite Power (LOOP) conditions. This review also included permissives for closing each of the EDG output circuit breakers and permissives that trip the normal supplies to the emergency buses from the Reserve Station Service Transformers (RSSTs). The permissives were reviewed to assure auto closure of the swing diesel (EDG 3) output breakers to either Unit 1 Emergency Bus 1J or to Unit 2 Emergency Bus 2J on a loss of voltage on either bus. The review was performed to verify that for a LOOP/accident condition, the EDG 3 breaker to the accident unit would be the one that closed and the breaker to the non-accident unit would be prevented from closing.

The team reviewed and assessed the control logic scheme for the AAC diesel generator system, which provides Surry with Station Blackout (SBO) capability. The team specifically reviewed elementary and control logic diagrams for the AAC system starting and sequencing; controls and logic for loading the AAC diesel generator; AAC system specifications and design requirements; and procedures and operations controls governing the AAC system.

The team also reviewed the undervoltage relay circuits on the transfer buses that would operate at 46.7 percent nominal voltage to verify that operation of these relays on transfer buses F and D or F and E would automatically start the AAC EDG. This would then allow operator action in the control room to energize transfer buses D and E from the AAC source.

b. Findings

No findings of significance were identified.

.13 Operator Actions

a. Inspection Scope

The team reviewed operations procedures, observed administrative controls in place, and walked through portions of the procedures for utilizing the 4160 volt (4 kV) emergency bus-tie circuit breakers under controlled conditions to restore power to selected loads following a LOOP. The team also reviewed requirements and walked through the setup and installation of main transformer backfeed operations, to verify that the backfeed could be accomplished within eight hours as described in the Final Safety Analysis Report (FSAR) to provide a dependable alternate AC power source to emergency buses.

The team reviewed Abnormal and Emergency Contingency Action (ECA) procedures and discussed with operators the actions taken to verify load sequencing of EDGs following a LOOP, and that actions were consistent with design basis and required system alignment. The team verified operator actions to evaluate the impact of manipulating the alignment of EDG 3 to emergency buses depending on specific events (LOOP or accident signal).

The team reviewed manual actions for starting and loading the AAC diesel generator, to assure that actions affecting the sequencing and loading of the AAC system were as described in the licensee's SBO commitments and analysis.

b. Findings

No findings of significance were identified.

.14 Heat Removal

.141 Internal Cooling

a. Inspection Scope

The team reviewed calculations and equipment specifications to verify that the internal cooling systems for engine cooling and lubricating oil cooling were adequate to maintain equipment operation within vendor specifications. This included the design of the radiator fans, the louver control system, and historic ambient regional temperature ranges to verify an adequate heat sink was available to remove heat generated by the diesel engines.

b. Findings

No findings of significance were identified.

.142 Ventilation

a. Inspection Scope

The team reviewed design documentation and calculations for the ventilation design for the EDG and AAC diesel spaces to verify that the systems were capable of maintaining ambient temperatures within the ranges specified for equipment operation. This included ventilation for the EDG rooms, AAC diesel building and AAC battery room.

b. Findings

No findings of significance were identified.

.2 SYSTEM CONDITION AND CAPABILITY

.21 Installed Configuration

a. Inspection Scope

The team performed a walkdown inspection of the 500 kV, 230 kV and 34.5 kV switchyards to look for any degraded conditions and to verify the installed configuration matched the design drawings. Voltmeters in the main control room were checked to verify that the 500 kV and 230 kV bus voltages were consistent with information furnished in response to a question concerning the normal daily target voltage for those buses.

The team conducted a walkdown of Unit 1 emergency buses 1H & 1J 4160 volt switchgear, as well as 480 volt motor control centers 1H1 and 1J1. The walkdown included verification of the configuration of transfer buses D, E and F and their connections to RSSTs A, B and C. The team verified the arrangement of the degraded and undervoltage relays mounted on a panel in close proximity to the switchgear. The team also walked down the EDG 1 room, including the engine and electrical control panels and the diesel generator isolation panel. Bus circuit breakers and associated components were reviewed to verify lineups were consistent with the FSAR, design basis documents and operating procedures.

The team conducted field walkdowns of the EDG and AAC diesel fuel oil and support systems to verify the configuration was consistent with drawings and design calculation assumptions. Additionally, the team assessed material condition of piping, valves, tanks, and pumps.

b. Findings

No findings of significance were identified.

.211 Instrument Setpoints

a. Inspection Scope

The Surry Units 1 & 2 voltage profiles were reviewed under various grid voltages, as well as a calculation for proposed new safety limits for undervoltage and degraded voltage setpoints. The team reviewed the setpoints for the degraded voltage and loss of voltage protective relays and their associated time delay relays. The setpoints, reset points and uncertainty band were compared to the minimum expected steady state voltage, minimum allowable steady state voltage, maximum motor starting voltage dip, and duration of the motor starting transient. Coordination with other protective relays was also considered. A sampling of records of the last calibration of the relays was reviewed to verity that the as-found and as-left setpoints were within the allowable tolerance of the calibration. The team also reviewed the setpoints for overcurrent relays associated with the AAC diesel and buses. The team reviewed AAC system electrical buses 0M and 0L protective relay setpoints to verify that setpoints were established consistent with the design of the AAC system. In addition, the team reviewed the calculation for the undervoltage relay setpoints for the transfer bus which are utilized to automatically start the AAC diesel generator. Additional calculations reviewed included the channel statistical allowance for the undervoltage and degraded voltage relays setpoints, and diesel fuel oil transfer flow.

b. Findings

An Unresolved Item (URI) was identified related to a licensee position that a sustained degraded voltage above the trip setpoint coincident with a single failure of the redundant train does not have to be addressed in the design basis of the plant. Additionally, the URI questioned the adequacy of the 1B Low Head Safety Injection (LHSI) pump to meet the design flow at degraded motor frequency/voltage conditions.

The inspectors reviewed the plant condition where the 4160 volt system was operating just above the degraded voltage setpoint (90 percent nominal voltage) and the loads for containment limiting safeguards were in operation. During this review, the inspectors learned that several 480 volt emergency buses and motor control centers would provide less than 90 percent voltage at several motors terminals. Given this information, the inspectors questioned if the licensee could meet the design basis of the plant by considering that sustained degraded voltage occurred coincident with a single failure of the opposite redundant train. The licensee stated that they had not specifically analyzed this condition. However, the licensee provided an analysis (Engineering Transmittal (ET) CME-98-0010, Rev. 0) that considered one EDG operating at a frequency reduction of 0.33 hz with a failure of the other train. The licensee stated that this analysis was bounding, in that the motor speed reduction with the existing relay setting is bounded by the speed reduction assumed for the EDG frequency variation. The licensee further stated that ET CEE-98-013, Rev. 0, correlated to the reduced frequency analysis to a motor speed reduction of 0.55 percent at 60 hz and thereby corresponded to a reduced flow of the pump. The inspectors' review of the reduced frequency condition contained in ET CEE-98-013 indicated that most pumps analyzed could meet design flows with exception of the 1B LHSI pump. The licensee noted this vulnerability in their analyses prior to presenting the material to the team for review. The licensee has performed some preliminary calculations that evaluated the 1B LHSI pump to meet design basis flow under this reduced frequency condition. Based on this review, it appears that at a reduced frequency of 0.5 Hz (worse case) the pump would still be able to meet its intended design flow requirement. However, the inspectors noted that this was only a preliminary analysis of the condition and a final computation would need to be completed. The inspectors noted that the licensee maintains the position that this condition, of a sustained degraded voltage above trip setpoint with a single failure of the redundant train, is not a design basis requirement and, therefore, does not need to be specifically addressed. However, the licensee did inform the team of their plans to perform an upgrade of the calculations within the next five years. These calculations, similar to those performed under ET CEE-98-013, would be re-performed at a frequency reduction of 0.5 hz for all pumps operated in an engineered safety features actuation. Based on the inspectors' review two questions remain unanswered. One, the team was unable to determine if it was acceptable for the licensee to not specifically address in the design basis of the plant a sustained degraded voltage condition above the trip setpoint coincident with a single failure of the redundant train of equipment. Two, given the existing analyses or the future upgrade of calculations to be performed at the reduced frequency of 0.5 hz, is the LHSI pump capable of meeting its design function and the plant capable of meeting the minimum design basis flow requirement at degraded voltage/reduced frequency conditions. Pending further review by the NRC this item is identified as an URI 50-280, 281/00-07-01.

.22 Design

a. Inspection Scope

The team reviewed the interface between the plant electrical distribution system and the offsite grid system to verify compliance with 10 CFR 50, Appendix A, General Design Criteria 17 requirements, and the licensee's operating procedures. Coordination between the groups responsible for controlling the interface between the plant electrical system and the offsite grid system was also reviewed. The team verified that the correct value of voltage for the 500 kV and 230 kV systems was used in the plant load flow calculations.

The fast dead bus transfer of the balance of plant buses from the unit auxiliary transformers to the RSSTs was reviewed to determine whether there was any concern that these transfers could cause loss of power to the safety-related buses fed from the RSSTs. The team also reviewed the application of lightning arresters on the 34.5 kV system, particularly with regard to protection of the 34.5 kV underground cables which connect to overhead lines. In addition, application of the 34.5 kV cables which supply offsite power to the safety-related buses was reviewed.

EDG loadings were reviewed and compared to the diesel nameplate ratings. The team also reviewed electrical loading requirements for the AAC diesel generator to ensure that the generator rating was sufficient to simultaneously supply selected loads on both units to cope with an SBO scenario. The team reviewed the AAC system Design Change Package 92-052-3 and electrical design calculations associated with the AAC installation to verify that electrical cabling capacities were sufficient for electrical loads postulated as part of SBO coping and recovery.

b. Findings

One finding was identified related to the 34.5 kV cables which constitute the connection to offsite power.

Two of the three 34.5 kV cables that constitute the connection from the transmission network to the onsite electrical distribution system had less insulation thickness than specified in industry standards. Insulated Cable Engineers Association (ICEA) standard S-66-524, “Cross-Linked-Thermosetting-Polyethylene-Insulated Wire and Cable for the Transmission and Distribution of Electrical Energy,” and Association of Edison Illuminating Companies (AEIC) standard CS-5, “Specification for Cross-Linked Polyethylene Insulated Shielded Power Cables Rated 5 through 46 kV,” have required, since at least 1980, insulation thickness of 345 mils for circuits rated 34.5 kV. However, feeder cables to 34.5 kV RSSTs A and B have 260 mils of insulation. The above cited standards indicate that cable having 260 mils of insulation are suitable for use on systems rated 25 kV.

The cables were manufactured and installed in 1983 in a ground level sand and gravel based trench with hard-board or concrete sides and cover. The cable jacket is stamped 35 kV and 260 mils. At times, the cables are submerged in water. The cables connect to overhead lines at riser poles. Lightning arresters are installed at both ends of the cable. According to the AEIC standard, 260 mils of insulation corresponds to a basic lightning impulse insulation level of 150 kV, and the 27 kV metal-oxide lightning arresters should provide a good margin of protection against lightning surges. The cables are continuously energized, except for maintenance and special outages.

The fact that the cables have less than the standard insulation thickness for the 34.5 kV system indicates that the insulation may be over stressed at the normal operating voltage and that the useful life of the cable may be reduced. Should a fault occur on one of these cables, offsite power would be lost to one of two safety-related 4.16 kV bus. The licensee has written Problem Issue (PI) S-2000-1844 to evaluate this condition and the need for replacement of the cable.

A special analysis was performed by an NRC Region II Senior Reactor Analyst (SRA) to determine the effect on risk of the two RSST feeder cables having less than standard insulation thickness based on the 17 years that the cables had been in service. The risk screening analysis performed for the postulated cable failure indicated that there would be a slight increase in the Loss of Offsite Power (LOOP) initiation frequency resulting in a change in the Core Damage Frequency (CDF) of less than $1.0x10^{-6}$. The SRA’s review concluded that the change in LOOP initiation frequency and the resultant change in CDF was GREEN.

.23 Testing

a. Inspection Scope

The team reviewed maintenance procedure data sheets for 4160-volt circuit breakers to determine whether breaker operating times were being checked, and whether the measured times and criteria were consistent with assumptions related to the fast bus transfers.

The team reviewed test methods and procedures for Unit 1 4160-volt emergency bus undervoltage and degraded voltage relays, specifically for the 1H and 1J 4 buses. The team also reviewed recent calibration data from previous tests to verify that the test and acceptance criteria were appropriate for these types of relays.

The team reviewed the last battery performance test results for the main station batteries, and the emergency diesel generator batteries. The team reviewed pre-operational and surveillance tests data to verify acceptance criteria were consistent with design base assumptions and that equipment function was appropriately verified for system performance.

b. Findings

No findings of significance were identified.

.3 SELECTED COMPONENTS

.31 Component Inspection

a. Inspection Scope

The team reviewed maintenance and testing documentation to assess the licensee's actions to verify and maintain the safety function, reliability and availability of selected components. The selected components included: EDG engines, AAC diesel, radiator fans and louvers, fuel oil transfer pumps and fuel oil storage tanks, air start system tanks and air start motors, relief valves on air storage tanks and fuel oil transfer pumps

b. Findings

No findings of significance were identified.

.32 Component Degradation

a. Inspection Scope

The team reviewed licensee activities for inspection and testing of EDGs and AAC diesels and associated support system equipment to identify performance degradation.

b. Findings

No findings of significance were identified.

.33 Design Changes

a. Inspection Scope

The team reviewed design changes of equipment accomplished through the licensee's design change process and component level design changes accomplished via the procurement process to verify that system and equipment function was appropriately evaluated and maintained.

The team specifically reviewed two design change packages related to a modification of the fuel oil transfer pump power supply and a change in the EDG starting air compressor setpoint value.

b. Findings

No findings of significance were identified.

.34 Operating Experience

a. Inspection Scope

The team reviewed the licensee's evaluation for two Information Notices (IN) IN 2000-06, "Offsite Power Voltage Inadequacies," and IN 97-21, "Availability of Alternate AC Power Source Designed for Station Blackout Event."

The team reviewed Surry Licensee Event Reports (LERs) covering the period of 1985 to the present to confirm that no 34.5 kV RSST feeder cable faults and no fast bus transfer problems had occurred, and to look for electrical system issues in general. The team also asked questions concerning the performance history for all the 34.5 kV cables.

The team reviewed documentation of the licensee's analyses of industry and vendor information notices related to EDG and AAC diesels and support systems to determine if appropriate evaluations had been accomplished to determine if station equipment was impacted.

b. Findings

No findings of significance were identified.

.4 IDENTIFICATION AND RESOLUTION OF PROBLEMS

a. Inspection Scope

The team reviewed the complete summary of problem reports for the relevant systems covering at least the last five years. Eight problem reports which dealt with electrical system issues were selected for further review. Nine problem reports primarily relating to Instrumentation and Control items were reviewed. The team also reviewed plant issue reports for the EDGs, AAC diesel, and support system components for the past three years to assess the adequacy of corrective actions for identified problems.

b. Findings

No findings of significance were identified.

4. **OTHER ACTIVITIES**

4OA6 Management Meetings

The lead inspector presented the inspection results to Mr. E. Grecheck, Site Vice President, and other members of the licensee's staff at the conclusion of the onsite inspection on August 11, 2000. Subsequent to the onsite inspection, the licensee provided additional information to the team for review. The in office inspection of the additional information was completed on August 29, 2000, and the lead inspector held a follow up conference call with Mr. R. Blount, licensee engineering and licensing representatives on September 12, 2000. The licensee acknowledged the findings presented, but did not consider the condition of a sustained degraded voltage above trip setpoint with a single failure of the redundant train to be a design basis requirement. Proprietary information is not included in this inspection report.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

M. Adams, Superintendent, Engineering
B. Benthall, Supervisor, Station Procedures
R. Cramer, Superintendent, Site Services
M. Crist, Superintendent, Operations
B. Garber, Licensing Engineer
E. Grecheck, Site Vice President
J. Grau, Supervisor, Nuclear Technical Training
R. MacManus, Assistant Superintendent, Engineering
D. Modlin, Nuclear Specialist, Nuclear Oversight
P. Phelps, Supervisor, Electrical Design
B. Stanley, Supervisor, Licensing
C. Steinert, Licensing Engineer

Other licensee employees contacted included engineers, operators, and administrative personnel.

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

50-280, 50-281/00-07-01	URI	Ability of the LHSI pump to meet the design basis flow requirement with a sustained degraded voltage above trip setpoint coincident with a single failure of the redundant train (Section 1R21.211)

APPENDIX

LIST OF DOCUMENTS REVIEWED

Modifications and NCNs with Full 10 CFR 50.59 Evaluations
DCN 99-058, EDG 3 Fuel Oil Transfer Pump Power Supply Modification
DCP 91-044, Replace Relief Valves 1-EE-RV-103 thru 1089,
DCP 92-052-3, Installation of Alternate AC (AAC) System for Station Blackout Capability
DCP 95-003, EDG FO Piping
DCP 95-029, EDG FO Piping Tie-in Connections
DCP 96-037, EDG Fuel Level Switch Mod.
DCP 99-007, Setpoint Change for Emergency Diesel Generator Air Compressor Start
DCP 99-103, EDG Lube Oil Mod (REA 99-0134, REA 98-0297)

Item Equivalency Evaluation Reports

SD850016.A00	1543 Model Changes EDG Air Start, dated 12/29/97
SEL00707-00	Volt. Reg. Fuses, dated 8/12/98
SE035002.000\001	EDG Fuel Oil Level Switch, dated 10/2/96
SM650001.00	EDG Fuel Oil Level Switch, dated 9/30/96
SM678002-000/001	EDG Fuel Oil Level Switch, dated 6/26/95
SM678003-000/001	EDG Fuel Oil Level Switch, dated 9/10/96
SOM00006-G00/G01	EDG Fuses, dated 11/12/98
SOM00008-000	EDG Over Speed Trip Assy., dated 5/21/98
SOM00031-000	EDG Temperature Switch, dated 9/24/99

Commercial Grade Item Evals (CGIE) and Procurement Technical Evaluations (PTE)

SE141003.A000/001	EDG 1,2,3 Batteries, dated 3/20/96
SEL00054-C00	Timer, EDG Battery Charger, dated 3/17/00
SEL00083-A00	EDG Level Switch, dated 8/26/99
SM67803.A00	Magnetrol Level Switches, dated 6/26/95
SM67804.A00	Magnetrol Level Switch Base/Cover, dated 4/9/94
SOM00006.P00	EDG Level Switch, dated 10/19/99

Part 21/Industry Notifications

OE-4784	EDG Overheats Due to Louver Roller Pin Failure, dated 9/24/91
Part 21 990-01	Possible Defect in Air Start Solenoid Valve, dated 1/29/90
Part 21 94-10	Potential Relay Failure in Control Circuitry, dated 5/9/94

Procedures
1-AP-10.07, Loss of Unit 1 Power, Rev. 18
0-AP-10.08, Station Power Restoration, Rev. 4
0-AP-10.10, Loss of Automatic Load Shed, Rev. 4
0-AP-17.04, EDG-1 or EDG-2 Emergency Operations, Rev. 8
0-AP-17.05, EDG-3 Emergency Operations, Rev. 8
0-AP-17.06, AAC DG Emergency Operations, Rev. 5
1-DRP-006, Protective Relay Setpoints, Rev.13
1-ECA-0.0, Loss of all AC Power, Rev. 17

Procedures (cont.)

0-ECM-2001-01, Electrical Corrective Maintenance – Level Switch Replacement and Adjustment
Rev. 6
0-ECM-2402-1, Main and Station Service Transformer Backfeed Setup/ Removal, Rev. 4
1-ECM-2403-03, RSS Transformer C Outage With Backfeed of Transfer Bus F, Rev. 4
1-EMP-P-RT-33, Preventative Electrical Maintenance – Protective Relay Maintenance for Breaker 15H3 Emergency Generator #1 Feed to Bus 1H, Rev. 5
1-EPT-1801.01, Emergency Bus Protective Relay Testing, Rev. 5
1-GOP-2.6, Unit Cooldown, Less Than 205°F To Ambient, Rev. 12
1-MOP-EP-304, RSS Transformer A Outage With Backfeed of Transfer Bus D and Emergency Bus1J Via Alternate AC Bus 0L, Rev. 1
0-0P-AAC-001A, AAC Diesel Generator System Alignment, Rev. 0
0-OSP-AAC-001, Quarterly Test of AAC Diesel Generator, Rev. 8
1-PT-2.33A, Instrumentation Periodic Test – Emergency Bus Undervoltage and Degraded Protection Test "H" Train, Rev. 2

Drawings
11448 ESK-3J, Control Switch Contact Diagrams sh9, Rev. 3
11448 ESK-3K, Control Switch Contact Diagrams sh10, Rev. 2
11448 ESK-5F, sh001 Elem Diagram Component Cooling Water Pump Unit 1, Rev. 16
11448 ESK-5F1, sh001 Elem Diagram Component Cooling Water Pump Unit 1, Rev. 2
11448 ESK-5G, sh001 Elem Diagram Residual Heat Removal Pump Unit 1, Rev. 13
11448 ESK-5K, sh001 Elem Diagram 4160V Aux Stm Gen Feed Pumps Unit 1, Rev. 26
11448 ESK-5K1, sh001 Elem Diagram Aux Steam Generator Feed Pumps Unit 1, Rev. 5
11448 ESK-5P, Elem Diagram 4160V Charging Pumps sh1, Rev. 24
11448 ESK-5Q, Elem Diagram 4160v Charging Pumps sh2, Rev. 24
11448 ESK-5R, Elem Diagram 4160V Charging Pumps sh3, Rev. 19
11448 ESK-5U, Elem Diagram 4160V Charging Pumps sh4, Rev. 16
11448 ESK-5S, Elem Diagram 4160V Stub Bus 1H & 1J
11448 ESK-6AA, Elem Diagram 480V Low Head Safety Injection Pumps Unit1, Rev. 10
11448 ESK-6AB, Elem Diagram 480V Recirc Spray Pumps-(Inside Cont), Rev. 7
11448 ESK-6AC, Elem Diagram 480V Containment Spray Pumps, Rev. 6
11448 ESK-6AD, Elem Diagram 480V Recirc Spray Pumps-(Outside Cont), Rev. 9
11448 ESK-6KK, Elem Diagram Aux Ventilation System 1-VS-F-58A, Rev. 10
11448 ESK-8AB, Elem Diagram Emer Diesel Generator Protection Unit 1, Rev. 13
11448 ESK-11AA, Elem Diagram Bus H Degraded and Undervoltage Sensing Unit1, Rev. 9
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11448 LSK-1E & 1F, Station Blackout Sequence Start Logic Diagram, Rev. 1, Rev. 0
11448 LSK-1G, 4160-volt Bus 0M Logic Diagram, Rev. 0
11448-LSK-1N, AAC Generator Protection Logic Diagram, Rev. 0
11448 LSK-1P, 4160-volt Bus 0L Logic Diagram, Rev. 0
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11448-04D-J, Yard Fuel Oil Lines, Surry Staion Unit 1, Rev. 0,
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Sections 8.3 through 8.5

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S-1999-2514, EDG Exceeds Maintenance Rule Goal for Unavailability
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1-OPT-EG-008, EDG 1 Starting Sequence Test, (performed 6/8/00)
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NRC's REVISED REACTOR OVERSIGHT PROCESS

The federal Nuclear Regulatory Commission (NRC) recently revamped its inspection, assessment, and enforcement programs for commercial nuclear power plants. The new process takes into account improvements in the performance of the nuclear industry over the past 25 years and improved approaches of inspecting and assessing safety performance at NRC licensed plants.

The new process monitors licensee performance in three broad areas (called strategic performance areas): reactor safety (avoiding accidents and reducing the consequences of accidents if they occur), radiation safety (protecting plant employees and the public during routine operations), and safeguards (protecting the plant against sabotage or other security threats). The process focuses on licensee performance within each of seven cornerstones of safety in the three areas:

Reactor Safety

- Initiating Events
- Mitigating Systems
- Barrier Integrity
- Emergency Preparedness

Radiation Safety

- Occupational
- Public

Safeguards

- Physical Protection

To monitor these seven cornerstones of safety, the NRC uses two processes that generate information about the safety significance of plant operations: inspections and performance indicators. Inspection findings will be evaluated according to their potential significance for safety, using the Significance Determination Process, and assigned colors of GREEN, WHITE, YELLOW or RED. GREEN findings are indicative of issues that, while they may not be desirable, represent very low safety significance. WHITE findings indicate issues that are of low to moderate safety significance. YELLOW findings are issues that are of substantial safety significance. RED findings represent issues that are of high safety significance with a significant reduction in safety margin.

Performance indicator data will be compared to established criteria for measuring licensee performance in terms of potential safety. Based on prescribed thresholds, the indicators will be classified by color representing varying levels of performance and incremental degradation in safety: GREEN, WHITE, YELLOW, and RED. GREEN indicators represent performance at a level requiring no additional NRC oversight beyond the baseline inspections. WHITE corresponds to performance that may result in increased NRC oversight. YELLOW represents performance that minimally reduces safety margin and requires even more NRC oversight. And RED indicates performance that represents a significant reduction in safety margin but still provides adequate protection to public health and safety.

The assessment process integrates performance indicators and inspection so the agency can reach objective conclusions regarding overall plant performance. The agency will use an Action Matrix to determine in a systematic, predictable manner which regulatory actions should be taken based on a licensee's performance. The NRC's actions in response to the significance (as represented by the color) of issues will be the same for performance indicators as for inspection findings. As a licensee's safety performance degrades, the NRC will take more and increasingly significant action, which can include shutting down a plant, as described in the Action Matrix.

More information can be found at: http://www.nrc.gov/NRR/OVERSIGHT/index.html.