



UNITED STATES
 NUCLEAR REGULATORY COMMISSION
 REGION II
 101 MARIETTA STREET, N.W.
 ATLANTA, GEORGIA 30323

Report Nos.: 50-280/90-21 and 50-281/90-21

Licensee: Virginia Electric and Power Company
 5000 Dominion Boulevard
 Glen Allen, VA 23060

Docket Nos.: 50-280 and 50-281

License Nos.: DPR-32 and DPR-37

Facility Name: Surry 1 and 2

Inspection Conducted: June 3 through June 30, 1990

Inspectors:	<u><i>A. Ruff for</i></u>	<u>7/19/90</u>
	W. E. Holland, Senior Resident Inspector	Date Signed
	<u><i>J. W. York for</i></u>	<u>7/19/90</u>
	J. W. York, Resident Inspector	Date Signed
	<u><i>S. G. Tingen for</i></u>	<u>7/19/90</u>
	S. G. Tingen, Resident Inspector	Date Signed

Accompanying Inspector: A. Ruff

Approved by:	<u><i>P. E. Fredrickson for</i></u>	<u>7/20/90</u>
	P. E. Fredrickson, Section Chief	Date Signed
	Division of Reactor Projects	

SUMMARY

Scope:

This routine resident inspection was conducted on site in the areas of plant operations, plant maintenance, plant surveillance, licensee event report reviews, action on previous inspection findings, and 10 CFR Part 21 closeout. Backshift or weekend tours were conducted on June 9, 10, 16, 17, 26, 27, and 29.

Results:

During this inspection period, a violation was identified for failure to follow procedure while testing the Unit 1 turbine driven auxiliary feedwater pump (paragraph 5.b). This violation was similar to violation 280/89-24-01 discussed in NRC Inspection Report, dated September 28, 1989. Also a non-cited violation was identified for failure to accomplish a periodic test (PT-24.38) within the Technical Specification frequency requirements (paragraph 5.e).

An unresolved item was identified involving the review of proper classification of safety related parts (paragraph 4.b).

In the area of engineering/technical support, strengths were noted involving system engineer knowledge of their systems and review of completed periodic test procedures (paragraphs 3.d and 5.b).

In the area of safety assessment/quality verification, a strength was noted in the licensee's evaluation of the Unit 1 low pressure heater drain system pipe leak due to excessive pipe wall thinning (paragraph 6). The licensee's task team report was very comprehensive in scope and made recommendations which would minimize recurrence of the event.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

- *W. Benthall, Supervisor, Licensing
- R. Bilyeu, Licensing Engineer
- D. Christian, Assistant Station Manager
- *H. Collar, Supervisor, Quality Assurance
- J. Downs, Superintendent of Outage and Planning
- D. Erickson, Superintendent of Health Physics
- W. Gross, Supervisor, Shift Operations
- *R. Gwaltney, Superintendent of Maintenance
- *J. Hartka, Staff Engineer, Licensing
- *M. Kansler, Station Manager
- T. Kendzia, Supervisor, Safety Engineering
- J. McCarthy, Superintendent of Operations
- *A. Meekins, Supervisor, Administrative Services
- A. Price, Assistant Station Manager
- *K. Sloane, Supervisor, Operations Support
- E. Smith, Site Quality Assurance Manager
- *T. Sowers, Superintendent of Engineering
- *R. Thornsberry, Supervisor, Scheduling
- *L. White, Senior Fire Protection Specialist

*Attended exit interview.

Other licensee employees contacted included control room operators, shift technical advisors, shift supervisors and other plant personnel.

Acronyms and initialisms used throughout this report are listed in the last paragraph.

2. Plant Status

Unit 1 and Unit 2 began the reporting period at power. Both units operated at power for the duration of the inspection period.

3. Operational Safety Verification (71707 & 42700)

a. Daily Inspections

The inspectors conducted daily inspections in the following areas: control room staffing, access, and operator behavior; operator adherence to approved procedures, TS, and LCOs; examination of panels containing instrumentation and other reactor protection system elements to determine that required channels are operable; and review of control room operator logs, operating orders, plant deviation reports, tagout logs, temporary modification logs, and tags on

components to verify compliance with approved procedures. The inspectors also routinely accompanied station management on plant tours and observed the effectiveness of their influence on activities being performed by plant personnel.

b. Weekly Inspections

The inspectors conducted weekly inspections in the following areas: operability verification of selected ESF systems by valve alignment, breaker positions, condition of equipment or component, and operability of instrumentation and support items essential to system actuation or performance. Plant tours were conducted which included observation of general plant/equipment conditions, fire protection and preventative measures, control of activities in progress, radiation protection controls, physical security controls, plant housekeeping conditions/cleanliness, and missile hazards. The inspectors routinely noted the temperature of the AFW pump discharge piping to ensure increases in temperature were being properly monitored and evaluated by the licensee.

c. Biweekly Inspections

The inspectors conducted biweekly inspections in the following areas: verification review and walkdown of safety-related tagouts in effect; review of sampling program (e.g., primary and secondary coolant samples, boric acid tank samples, plant liquid and gaseous samples); observation of control room shift turnover; review of implementation of the plant problem identification system; verification of selected portions of containment isolation lineups; and verification that notices to workers are posted as required by 10 CFR 19.

d. Other Inspection Activities

Inspections included areas in the Units 1 and 2 cable vaults, vital battery rooms, steam safeguards areas, emergency switchgear rooms, diesel generator rooms, control room, auxiliary building, cable penetration areas, independent spent fuel storage facility, low level intake structure, and the safeguards valve pit and pump pit areas. RCS leak rates were reviewed to ensure that detected or suspected leakage from the system was recorded, investigated, and evaluated; and that appropriate actions were taken, if required. The inspectors routinely independently calculated RCS leak rates using the NRC Independent Measurements Leak Rate Program (RCSLK9). On a regular basis, RWPs were reviewed, and specific work activities were monitored to assure they were being conducted per the RWPs. Selected radiation protection instruments were periodically checked, and equipment operability and calibration frequency were verified.

During this inspection period, the inspectors walked down the SW, CCW, FW, CH, CS, SI, EDG, MS, ventilation, UPS, radiation monitoring, reactor protection, and electrical systems with the respective system

engineers. The inspectors noted that the system engineers' experience levels varied, but overall they appeared to be knowledgeable on their systems which was identified as a strength.

e. Physical Security Program Inspections

In the course of monthly activities, the inspectors included a review of the licensee's physical security program. The performance of various shifts of the security force was observed in the conduct of daily activities to include: protected and vital areas access controls; searching of personnel, packages and vehicles; badge issuance and retrieval; escorting of visitors; and patrols and compensatory posts. No discrepancies were noted.

f. Licensee 10 CFR 50.72 Reports

On June 7, 1990, the licensee made a report to the NRC withdrawing a 10 CFR 50.72 report that was made on May 13, 1990. That report addressed a condition concerning IRPI. The withdrawal was based on additional licensee reviews which concluded that the condition was not unanalyzed due to their conclusion that rods remained operable throughout the event and that TS 3.12.E.3 was applicable to this condition.

Within the areas inspected, no violations were identified.

4. Maintenance Inspections (62703 & 42700)

During the reporting period, the inspectors reviewed maintenance activities to assure compliance with the appropriate procedures. Inspection areas included the following:

a. Repair of ESW Pump 1A Fuel Oil Line

On June 12 the licensee attempted to adjust the governor of ESW pump 1A in order to correct a lower than normal speed which had been identified during past periodic testing. This attempt by a vendor representative was unsuccessful, and it was concluded that a distorted fuel line may have been limiting fuel oil flow to the diesel engine. The licensee then processed a work request to replace the distorted fuel line and completed the maintenance activity on June 15. After completion of work, ESW pump 1A was satisfactorily tested and returned to an operational status. The testing was reviewed by the inspector and is discussed in paragraph 5.a.

The inspector monitored licensee's activities associated with the ESW pump 1A repairs, including a review of initial conditions and prerequisites to accomplish the work, material and testing requirements, discussions with the system engineer, and periodic trips to the low level intake structure to evaluate corrective actions and monitor maintenance activities. A review was also made

of the completed work order and associated documentation for the maintenance activity. No discrepancies were identified.

b. Replacement of Unit 2 SI Test Switch

On June 26 the licensee replaced the Unit 2 Train A, Channel III, high steam flow SI test switch. This work was accomplished on work order 3800092251 and was witnessed by the inspectors from the Unit 2 switchgear room. Temporary jumpers were required to be installed for this maintenance. The inspectors reviewed the work order, the temporary modification log, and the electrical schematics. Since the work order indicated the switch to be a non-safety related component, the inspectors questioned the system engineer as to this classification. The system engineer did not have an immediate answer, but did initiate action to verify the switch's classification. After the switch was installed, it was determined that the component classification on the work order was in error. The switch was satisfactorily tested but it remained in an inoperable status pending the necessary work to upgrade it to a safety related component. The licensee is continuing the investigation of this discrepancy. Since this was identified late in the inspection period and an investigation is still in process, this item is identified as URI 280,281/90-21-03, Review of Classification of Safety Related Components.

Two additional problems were identified by the licensee during the replacement of the switch. The first was that the initial switch used for replacement was discovered to be defective after it was installed. This precipitated the installation of a second switch. Based on this problem, the licensee was evaluating if a 10 CFR 50 Part 21 Notice is required. The second problem was that the control room Q-list was found to be outdated. The licensee initiated a deviation report in response to the outdated control room Q-list.

Within the areas inspected, no violations were identified.

5. Surveillance Inspections (61726 & 42700)

During the reporting period, the inspectors reviewed various surveillance activities to assure compliance with the appropriate procedures as follows:

- Test prerequisites were met.
- Tests were performed in accordance with approved procedures.
- Test procedures appeared to perform their intended function.
- Adequate coordination existed among personnel involved in the test.
- Test data was properly collected and recorded.

Inspection areas included the following:

a. Testing of ESW Pump 1A

On June 15, 1990, ESW Pump 1A was tested in accordance with PT 25.3A, Emergency Service Water Pump (1-SW-P-1A) dated October 10, 1989. The test was performed to verify pump operability after completion of corrective maintenance on the pump diesel fuel oil line. This maintenance activity was discussed in paragraph 4.a. The inspector reviewed the completed periodic test with the system engineer. No discrepancies were noted.

b. Testing of Turbine Driven AFW Pump 1-FW-P-2

On June 2 Unit 1 turbine driven auxiliary feedwater pump was tested in accordance with 1-PT-15.1C, Turbine Driven Auxiliary Feedwater Pump (1-FW-P-2), dated May 10, 1990. This pump was tested after unit restart as required by TS. The pump was then declared operable and unit startup continued. On June 12, during a review of the completed PT by the system engineer, it was discovered that the procedure had been performed incorrectly and deviation report S1-90-815 was issued. On June 17, after management became aware of the DR, the problem of improper testing was discussed with the residents.

The DR addressed the fact that procedural steps were performed which were not required. Step 5.29 of periodic test 1-PT-15.1C states in part, "If the shaft speed does not exceed 4250 RPM, N/A all steps below and proceed to step 5.30." During performance of step 5.28, the operator recorded shaft speed as 4145 RPM. If procedure had been followed, the operator would not have made adjustments to shaft speed and would have proceeded to step 5.30. However, the operator adjusted the pump shaft speed upward to 4200 RPM at the direction of the SRO in charge of the test in accordance with Step 5.29. This adjustment was not in accordance with procedural requirements. It was also noted that this readjustment was a recurrence of a past similar problem.

TS 6.4 requires, in part, that procedures for the testing of components and systems involving nuclear safety of the station shall be followed. Failure to follow the procedural requirements of 1-PT-15.1C on June 2 is identified as a violation of TS 6.4 (280/90-21-01). This is a repeat of a similar violation that occurred when this pump was tested using the same PT on August 1, 1989. The violation for this occurrence is discussed in NRC Inspection Report 280,281/89-24, dated September 28, 1989.

The inspectors discussed the DR with the system engineer and were informed that an analysis was conducted which concluded that the pump operability was not affected by the governor adjustment. The system engineer explained that previous test results show that when the pump

is operated at 4200 RPM, the pump head falls within the acceptable range and that the pump will not trip from overspeed when started.

On June 20 the inspectors witnessed the test on the same pump using the same PT. The valve alignment, pump start, and the taking of the data was observed by the inspectors. The reading recorded for step 5.28 was 4196 RPM and no adjustments were made. The test was performed satisfactorily with no discrepancies.

The inspectors noted that the problem with the auxiliary feedwater pump periodic test was identified during the system engineer's review of the completed test procedure and was documented on a DR. Additional reviews of DRs by the inspectors noted where heat trace circuits were left outside their setpoint tolerances during periodic testing. This problem was also identified and documented by a system engineer as the result of his review of the completed test procedure. These examples of problem identification by systems engineers are considered a strength with regards to engineering/technical support at the station.

c. Verification of Position and Stroke Testing on Valve TV-DG-208A

Trip valve No. TV-DG-208A had indicated an intermediate position on the control room board i.e. both the closed and open light positions were illuminated. This required the licensee to make a containment entry in order to repair this valve. On June 7 the inspectors witnessed verification of valve position using periodic test 2-PT-18.10A, Verification of Local and Remote Valve Position Indications of Containment Trip Valves Inside Containment, dated October 27, 1989. The inspectors observed the coordination between the control room operators and the maintenance personnel in adjusting the valve position and the position indicator. After completion of the adjustment, the stroke testing of the valve was performed in accordance with 2-PT-18.6B, Quarterly Testing of Miscellaneous Containment Trip Valves, dated December 12, 1989. 2-PT-18.10A was subsequently completed to return the valve to service. The inspectors observed the manipulation of the valve by the control room operators, the illumination of the appropriate valve position indication light, and the timing of the stroking of the valve. No discrepancies were noted.

d. Control Rod Assembly Testing

On May 21 the inspectors witnessed the performance of periodic test 1-PT-6.0, Control Rod Assembly Partial Movement, dated February 15, 1990, from the control room. The purpose of this test was to verify movement of the control rod assemblies as required by TS 4.1. During the test, the inspectors noted that control bank D was not tested. Operations explained that control bank D was routinely moved to control reactor temperature and flux distribution which satisfied the TS requirement to verify control rod system operability every two

weeks. Also during the test, a "computer printout rod control system" alarm occurred and would not clear. The operator annotated the procedure critique sheet of this condition. After the test was satisfactorily completed, it was reviewed by the inspectors. A work request, No. 689961, was also issued to clear the alarm. With the approved work request, an I&C technician then cleared the alarm by resetting the P250 computer. The operator annotated on the procedure critique sheet that this condition had occurred. The inspectors have noted similar occurrences in the past where annunciators would not automatically clear when their alarm condition cleared. The inspectors will continue to monitor this condition during routine tours to evaluate the effect of similar occurrences on operator performance. No discrepancies were noted.

e. Failure to Conduct Periodic Testing of Fire Dampers

On June 28, the licensee discovered that periodic test PT-24.38, HVAC Fire Damper Operability, had not been performed within the allowable TS frequency requirements. TS 4.18.G.1.a requires that PT-24.38 be performed every 18 months. It was last performed on May 26, 1988. Therefore, after addition of a 25% grace period, the periodic test was required to be performed by March 1990. Failing to accomplish this testing resulted in the fire dampers associated with the control room, emergency switchgear rooms, and battery rooms being classified as inoperable. Upon discovery that the periodic test had not been performed, the licensee established fire watches in the affected areas within one hour in accordance with TS 3.21.B.7. PT-24.38 was then satisfactorily accomplished and the fire watches secured. At the end of the inspection period, the licensee was still investigating why the test was not accomplished within the allowable TS frequency requirements. Failure to accomplish PT-24.38 within TS frequency requirements was identified as a violation (NCV 280,281/90-21-02). This licensee identified violation is not being cited because criteria specified Section V.G.1 of the NRC Enforcement Policy were satisfied.

Within the areas inspected, one violation and one NCV were identified.

6. Licensee Event Report review (92700)

The inspector reviewed the LER's listed below to ascertain whether NRC reporting requirements were being met and to evaluate initial adequacy of the corrective actions. The inspector's review also included followup on implementation of corrective action and review of licensee documentation that all required corrective actions were complete.

(Closed) LER 280/89-35, Unplanned ESF Actuation, Automatic Start of an Auxiliary Ventilation System Fan Due to an Incorrectly Landed Lead. The issue involved improper landing of a previously lifted lead on a pressure switch due to personnel error. The incorrectly landed lead resulted in an auto-start of the subject fan when the fan control switch was returned to

the auto position. Immediate corrective action included properly relanding the lead and verifying correct fan operation. A root cause investigation of the event was conducted. That evaluation identified the root cause to be poor self checking techniques by the craft. In addition, the licensee determined that additional engineering guidance for this type of work would be provided. The inspector reviewed the root cause evaluation and agreed with the licensee's conclusions. This LER is closed.

(Closed) LER 280/90-03, Unit 1 LP Heater Drain System Pipe Leak Due to Excessive Pipe Wall Thinning. The issue involved a failure of piping downstream of one of the Unit 1 low pressure heater drain pumps due to excessive pipe wall thinning. Immediate corrective action included isolation of the leak area by stopping the pump and shutting the required valves. Some spurious actuations of fire protection equipment occurred due to the heat and moisture cause by the break. Moisture affected electrical circuits to alarm and heat caused some sprinklers to activate. The failure was attributed to single phase flow erosion/corrosion caused by the higher localized flow in the line immediately downstream of a flow control valve. Corrective action included replacement of the failed pipe and additional inspections of similar configurations for thinning. Based on these inspections, the piping in the same location for the other pump was replaced. A licensee task team was formed and investigated the event. They concluded in a report dated June 20, 1990, that several additional corrective actions were warranted to prevent recurrence of the event and identified these actions as concerns. The licensee added these concerns to their commitment tracking program for proper disposition. The inspectors monitored licensee corrective actions and reviewed the task team report. The inspectors noted that the task team report was very comprehensive in scope and is considered as a strength in the licensee's self assessment capability. This LER is closed.

(Closed) LER 280/90-04, Unit 1 Reactor Trip/Turbine Trip Due to Deluge Actuation on the "A" Main Transformer and Unit 2 Manual Reactor Trip Due to Erratic IRPI Indications. The details of this LER along with the corrective actions required to subsequently restart Units 1 and 2 were discussed in NRC Inspection Report 280,281/90-20. In order to preclude similar occurrences, the licensee will evaluate enhancements to the IRPI system and its power supply and also evaluate the separation between the A Main Transformer and the A Reserve Station Service bus bars. In the interim, the licensee has isolated the deluge system from the A Main Transformer. The inspectors consider the licensee's corrective actions to be adequate.

(Closed) LER 281/90-01, TAVE Protection Channel I Declared Inoperable Due to a Faulty Summator. This issue involves installation of a faulty summator in one of the three average temperature channel inputs to the reactor protection system. The original summator was replaced with a rebuilt summator that provided more noise filtration in the circuit to minimize spurious alarms. The replacement summator was satisfactorily bench tested before installation. However, after installation the temperature of the summator increased due to the ambient temperature of

the cabinet. The licensee considers that the summator failure which occurred after installation was caused by an increase in ambient temperature. This failure mechanism was not able to be duplicated during the bench test. In order to simulate the increased temperature on electrical components when bench testing, the licensee has obtained an oven to heatup electrical components prior to performance of a bench test. This type of testing should detect failure of electrical components such as the faulty summator prior to installation. The inspectors consider the licensee actions adequate.

(Closed) LER 281/90-02, Inoperable Individual Rod Position Indicators Due to Instrument Drift. At 77% during a rampdown from 100% power, IRPI for two control rods of control bank D differed from the rod group demand counter by greater than 12 steps which exceeded the TS limit. Corrective action involved changing abnormal procedure O-AP-1.02, Individual Rod Position Indication, dated May 19, 1990 to require operators to stop the ramp if IRPI and rod group demand counter differ by more than 10 steps. The inspectors reviewed O-AP-1.02 and consider the licensee actions adequate.

7. Action on Previous Inspection findings (92701, 92702)

a. (Closed) VIO 280/89-24-01, Failure to Comply With TS 3.0.1. This issue involved the licensee's incorrect use of a JCO to exit TS 3.0.1 action statement which resulted in a failure to follow the TS's action statement requirements. The licensee responded to this violation in a letter dated October 27, 1989. In that letter, the licensee stated that administrative procedure SUADM-LR-12, Safety Analysis/10 CFR 50.59/72.48 Safety Evaluations And Justifications For Continued Operation, was revised to clarify that JCOs alone may not be used to exit a TS action statement. The inspectors reviewed SUADM-LR-12 and consider that the licensee's corrective action was adequate.

b. (Closed) VIO 280, 281/89-24-03, Failure to Comply With the Allowable TS Intervals For Station Battery Testing. This issue involved battery surveillances not being performed in accordance within TS frequency requirements. The licensee responded to this violation in a letter dated October 27, 1989. In that letter, the licensee stated that corrective action involved daily listing of outstanding electrical surveillances, designating an electrical shop foreman to be responsible for the completion of electrical surveillances, and placing an increased emphasis on scheduling electrical surveillances on the plan of the day. The inspectors discussed this issue with the station battery system engineer who is responsible for reviewing and trending battery surveillance results. With the implementation of the above corrective action, the system engineer stated that surveillances have been performed in accordance with the TS frequency requirements. The inspectors consider that the licensee's corrective actions were adequate.

8. 10 CFR Part 21 Closeout (92700)

(Closed) 280,281/P2190-04, Notification by Rosemount, Inc. of Potential Failure for Models 1153 and 1154 Transmitters. On December 12, 1988 and February 7, 1989, Rosemount notified the industry of a potential failure mode for their 1153 and 1154 transmitters. As a result of identification of this problem, the NRC issued Information Notice 89-42, Failure of Rosemount Model 1153 and 1154 Transmitters on April 21, 1989; and more recently, on March 9, 1990, the NRC issued NRC Bulletin 90-01, Loss of Fill-Oil in Transmitters Manufactured by Rosemount.

The Part 21 notification indicated that the internal loss of fill-oil can cause the transmitters to exhibit reduced performance prior to a detectable failure. The reduced performance is considered most noticeable by a drift in the zero setpoint, by a drift in span setting, or as a slow response time to changes in pressure input. The notice also indicated that all reported failures occurred during the first 30 months of service and that all were preceded by the detectable degraded conditions discussed above.

The inspector discussed this issue with the licensee and was provided the following information:

- Most of the subject transmitters have been in service at Surry longer than the 30 months called out in the Part 21 notice.
- An engineering/evaluation for Rosemount transmitters has been established.
- Operations and I&C personnel have been briefed on the potential internal fill-oil loss failure mechanism and associated symptoms.
- Procedure IMP-C-MI-50, Transmitter Pre-installation, Testing and Replacement, had been revised to notify engineering and the NPRDS coordinator when replacing a transmitter that required changeout due to a failure.
- Surry has had transmitters fail in the past that exhibited characteristics similar to those discussed in the NRC Information Notice. In those cases, the transmitters were replaced in accordance with approved maintenance practices.

The inspector noted that NRC Bulletin 90-01 requested licensee's to provide NRC with information/data on Rosemount transmitters and to take specific corrective actions to minimize undetected failures of the subject transmitters. Based on the licensee's actions to date and the requested actions of NRC Bulletin 90-01, this item is closed.

9. Exit Interview

The inspection scope and results were summarized on July 3, 1990 with those individuals identified by an asterisk in paragraph 1. The following summary of inspection activity was discussed by the inspectors during this exit.

- A violation (280/90-21-01) was identified for failure to follow procedure while testing the Unit 1 turbine driven auxiliary feed water pump which was similar to a previously issued violation (paragraph 5.b).
- A non-cited violation (280, 281/90-21-02) was identified for failure to accomplish PT-24.38 within the Technical Specification frequency requirements (paragraph 5.e).
- An unresolved item (280, 281/90-21-03) was identified involving NRC review of the licensee's evaluation of proper classification of safety related parts (paragraph 4.b).
- In the area of engineering/technical support, strengths involving system engineer knowledge of their system and system engineer review of completed periodic test procedures were noted (paragraphs 3.d and 5.b).
- In the area of safety assessment/quality verification, a strength was identified with regards to the licensee's evaluation of the Unit 1 low pressure heater drain system pipe leak due to excessive pipe wall thinning. The inspectors noted that the task team report was very comprehensive in scope and made recommendations which should minimize recurrence of the event. This report was considered to be an excellent example of the licensee's self assessment capability (paragraph 6).
- Licensee management was informed of the items closed in paragraphs 6 and 7.

The licensee acknowledged the inspection conclusions with no dissenting comments. The licensee did not identify as proprietary any of the materials provided to or reviewed by the inspectors during this inspection.

10. Index of Acronyms and Initialisms

AFW	-	AUXILIARY FEEDWATER
CFR	-	CODE OF FEDERAL REGULATIONS
CCW	-	COMPONENT COOLING WATER
CH	-	CHARGING
CS	-	CONTAINMENT SPRAY
DR	-	DEVIATION REPORT
EDG	-	EMERGENCY DIESEL GENERATOR
ESW	-	EMERGENCY SERVICE WATER

FW	-	FEEDWATER
HVAC	-	HEATING VENTILATION AND AIR CONDITIONING
I&C	-	INSTRUMENTATION AND CONTROL
IRPI	-	INDIVIDUAL ROD POSITION INDICATION
JCO	-	JUSTIFICATION FOR CONTINUED OPERATION
LCO	-	LIMITING CONDITION FOR OPERATION
LER	-	LICENSEE EVENT REPORT
N/A	-	NOT APPLICABLE
MS	-	MAIN STEAM
NCV	-	NON-CITED VIOLATION
NPRDS	-	NUCLEAR PLANT RELIABILITY DATA SYSTEM
NRC	-	NUCLEAR REGULATORY COMMISSION
PT	-	PERIODIC TEST
RCS	-	REACTOR COOLANT SYSTEM
RPM	-	REVOLUTIONS PER MINUTE
RWP	-	RADIATION WORK PERMIT
SI	-	SAFETY INJECTION
SRO	-	SENIOR REACTOR OPERATOR
SW	-	SERVICE WATER
TS	-	TECHNICAL SPECIFICATIONS
UPS	-	UNINTERRUPTIBLE POWER SUPPLY