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

Report Nos.: 50-338/89-028 and 50-339/89-028

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

Docket Nos.: 50-338 and 50-339 License Nos.: NPF-4 and NPF-7

Facility Name: North Anna 1 and 2

Inspection Conducted: August 23 - September 25, 1989

Inspectors: M.S Lewis for 10/30/89
J. L. Caldwell, Senior Resident Inspector Date Signed

M.S Lewis for 10/30/89
L. P. King, Resident Inspector Date Signed

M.S. Lewis for 10/30/89
J. F. Munro, Resident Inspector Date Signed

Approved by: M.V. Sinkule for 10/30/89
P. E. Fredrickson, Section Chief Date Signed
Division of Reactor Projects

SUMMARY

Scope:

This routine inspection by the resident inspectors involved the following areas: plant status, maintenance, surveillance, engineered safety featured walkdown, operational safety verification, operating reactor events, operator license verfication and safety assessment. During the performance of this inspection, the resident inspectors conducted reviews of the licensee's backshift operations on the following days: August 23, 24, 30, 31, September 8, 10, 15, 16, 18, 19, 21, 22, and 23, 1989.

Results:

Within the areas inspected, the following violation was identified:

Violation 338/89-028-03, Failure to comply with TS 3.6.2.2 requirements by inadvertently rendering two recirculation containment spray subsystems inoperable for 47 minutes (paragraph 7).

Also, within the areas inspected, one unresolved item was identified. This item involved the transportation of contaminated teledosimetry instrumentation to the Waterford Nuclear Station (paragraph 6).

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The inspector also identified a number of weaknesses during the course of the inspection period. These weaknesses involved the following: the licensee's reliance on installed instrumentation for the purposes of verification of Technical Specification acceptance criteria, without using the same calibration controls as required for portable maintenance and test equipment; the lack of engineering support to properly address the reversed orifice issue in a timely manner; the lack of timely deviation reports being initiated concerning known orifice discrepancies; and for several components, the lack of work requests being initiated for identified corrective maintenance problems.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

*M. Bowling, Assistant Station Manager
*R. Driscoll, Quality Control Manager
*R. Enfinger, Assistant Station Manager
G. Gordon, Electrical Supervisor
D. Heacock, Superintendent, Engineering
*J. Hegner, Supervisor - Licensing (Corporate)
*S. Hughes, Operation Coordinator
*G. Kane, Station Manager
*P. Kemp, Supervisor Licensing
T. Porter, NSE Supervisor
*R. Saunders, Manager - Licensing (Corporate)
J. Stall, Superintendent, Operations
*A. Stafford, Superintendent, Health Physics
F. Terminella, Quality Assurance Supervisor
D. Thomas, Mechanical Maintenance Supervisor
W. Matthews, Superintendent, Maintenance
G. Flowers, Configuration Management Supervisor

Other licensee employees contacted included engineers, technicians, operators, mechanics, security force members, and office personnel.

NRC management site visit: On August 24, B. Grimes, L. Reyes, H. Berkow, P. Fredrickson and L. Engle visited the North Anna Power Station to present the SALP results to the licensee. Following the SALP presentation B. Grimes and L. Reyes were given a tour of the station. On August 25, P. Fredrickson remained on site for a tour, discussions with the inspectors, and a discussion with the licensee.

*Attended exit interview

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

2. Plant Status

On August 23, the beginning of the inspection period, Unit 1 was operating at 100% power, day 36 of continuous on line operation. On August 26, while adjusting the SW flow isolation valves to the RSHXs to reduce SW inleakage, the licensee improperly secured SW to two RSHXs. As a result, two containment recirculation spray subsystems were rendered inoperable for approximately 47 minutes (see paragraph 7 for details). On September 8, a four-hour report was made concerning an unplanned release from the waste gas decay tank. This report was not made due to any release limits being exceeded, but due to the licensee's agreement with the state to report any unplanned release regardless of the release levels. On September 14, during performance of the train "A" solid state protection periodic test, the "A" reactor trip breaker opened and the source range nuclear instruments re-energized unexpectedly (see paragraph 4 for details). On September 22, the licensee implemented the procedural actions for severe weather in anticipation of Hurricane Hugo (see paragraph 6 for details). The inspection period concluded on September 25 with the unit at 100% power and on line for 69 days of continuous operation.

On August 23, the beginning of the inspection period, Unit 2 was operating at 100% power, day 108 of continuous on line operation. On August 24, during the performance of a periodic test, the licensee identified that the valves supplying cooling water to the packing of several AFW pumps were inappropriately positioned (see paragraph 6 for details). On September 24, the unit established a new world record of 1184 days without experiencing an at-power automatic reactor trip. The inspection period concluded on September 25 with the unit at 100% power and on line for 141 days of continuous operation.

3. Maintenance (62703)

Station maintenance activities affecting safety-related systems and components were observed/reviewed, to ascertain that the activities were conducted in accordance with approved procedures, regulatory guides and industry codes or standards, and in conformance with TS.

During the month of August, the inspectors witnessed or reviewed portions of the following maintenance activities:

a. On August 23 1989, the inspector observed the removal of piping from 1-RM-LW-111, the instrument used to monitor the station's effluent release to the discharge canal. The maintenance was being performed to allow the lead shield to be removed and cleaned to reduce the background radiation levels. The licensee was unable to remove the instrument's pig from the pipe, so the pipe and pig were cleaned together and reinstalled. The subsequent count rate was significantly reduced to approximately 1000 counts.

b. On August 25, 1989, the inspector reviewed maintenance procedure MEMP-C-CH-1, Inspection and Repair of Boric Acid Transfer Pump, and the associated RWP 89-3016 initiated for the maintenance on the seals of the boric acid transfer pump 2B.

c. On August 31, 1989 the inspector observed replacement of oil seals on 1-CC-P-1B.

The inspectors did not identify any problems associated with the above discussed maintenance activities.

No violations or deviations were identified.

4. Surveillance (61726)

The inspectors observed/reviewed required testing and verified that testing was performed in accordance with adequate procedures, that test instrumentation was calibrated, that LCOs were met and that any deficiencies identified were properly reviewed and resolved.

The inspector witnessed the performance of the following tests:

a. 1-PT-71.2, Auxiliary Feedwater Pump (1-FW-P-3A) Test, on September 5, 1989.

b. 1-PT-213.9, Valve Inservice Inspection (Safety Injection System), on September 6, 1989.

c. 2-PT-30.2.2 and 2-PT-30.2.3, NIS Power Range Rate Channel Calibration (N42 and N43) Protection Channels II and III, on September 8, 1989.

d. 1-PT-36.1A, Reactor Protection and ESF Logic Test Train A, on September 14, 1989.

e. Portions of 2-PT-34.3, Turbine Valve Freedom Test, on September 15, 1989.

f. Portions of 1-PT-36.Q, AMSAC System Logic Test, on September 25, 1989.

The tests were satisfactorily conducted in accordance with the procedures. The test data was subsequently reviewed and met the acceptance criteria.

On September 5, while observing 1-PT-71.2, the inspector noted that the calibration stickers for AFW pump (1-FW-P-3A) inlet and discharge pressure gauges (1-FW-PI-156B and 1-FW-PI-155B) indicated past due. The calibration due dates were listed as August 29 and 30, 1989 respectively. The discharge pressure gauge is used during the surveillance test to verify compliance with TS 4.7.1.2.a.1, "...each motor driven pump develops a discharge pressure of greater than or equal to 1250 psig...". A similar situation was noted concerning the calibration stickers on the inboard and outboard lube oil pressure gauges (1-FW-PI-603A-1 and 1-FW-PI-603A-2). Also, on September 12, 1989, the inspector noted that the calibration stickers for AFW pump (1-FW-P-2) inlet and discharge pressure gauges (1-FW-PI-156A and 1-FW-PI-155A) indicated past due. The calibration due dates were listed as August 29 and 30, 1989 respectively. The inspector reviewed the last calibration data performed in 1987 for the Unit 1 AFW pumps suction and discharge pressure gauges and noted that all results were found to be within the specified tolerance. The inspector requested the Instrument Department Supervisor address the practice of utilizing instrumentation in which the calibration is past due, to obtain operational data for compliance with TS surveillance acceptance criteria. The supervisor indicated that a 25% grace period has typically been applied to the calibration frequency, however he could not reference any station procedure that would justify such an extension. Following further review, the supervisor stated that the allowance for a 25% grace period was inadvertently deleted from Instrument Department Memorandum, procedure number 25.0, during its last revision.

Station Administrative Procedure, ADM-12.0, Control of Measuring and Test Equipment, implements the licensee's commitments made in Quality Assurance Topical Report VEP-1-5A, item 17.2.12 and establishes a calibration program to control and verify the accuracy of MT/E used in activities affecting quality. This equipment is defined as "... tools, instruments, gauges, fixtures, ... and measuring devices that are used to obtain test or operational data ...". The procedure specifies that the instrument be in calibration prior to use and does not address extensions to the calibration frequency. The licensee does not interpret this procedure as being applicable to installed system instrumentation since Topical Report VEP-1-5A addresses only portable instrumentation. However, installed system instrumentation, currently excluded from the controls of procedure ADM-12.0, is being utilized to obtain test data on safety-related equipment for the determination of operability. The licensee's calibration program for MT/E, procedure ADM-12.1, requires an evaluation be performed to determine the validity of tests and measurements since the last calibration, should a piece of MT/E be found not to be within established limits or rejected on calibration. No specific procedural guidance exists that directs a similar evaluation be performed for installed instrumentation should it be determined to be out of calibration. Instrument Calibration Program, procedure ADM-11.5, is less specific and directs the device to be declared inoperable, the applicable Action Statements of the TS entered, and a plant deviation report initiated. This process is less explicit than the guidance contained in ADM-12.1 and may not address the utilization of the out of calibration device on past surveillance tests. The inspectors identified a weakness regarding the licensee's reliance on installed system instrumentation to provide test data relevant to TS surveillance acceptance criteria without the procedural controls associated with MT/E devices. The licensee indicated that the current deviation report system should be sufficient to identify the effects, if any, of an out of calibration device on previous surveillance tests. The licensee indicated that a review of the current accepted practice in this area would be done. This review would address, as a minimum, the following two issues.

a. Justification for a 2 year calibration frequency and its associated 25% grace period.

b. Calibration sticker system that provides information to the operator on when instrumentation is to be considered out of calibration.

The licensee's review and any subsequent actions will be followed up by the inspectors and identified as inspector followup item (338,339/89-28-01).

On September 14, 1989, during the performance of procedure 1-PT-36.1A, Reactor Protection and ESF Logic Test Train A, the "A" reactor trip breaker unexpectedly opened and both source range nuclear instruments re-energized. No source range alarms were received and, as a result, the energization of the source range instruments was not recognized for approximately 38 minutes. Source range instrument N-31 failed low and instrument N-32 remained off-scale high. The source range instruments were deenergized, declared inoperable, and TS 3.3.1.1 action statement was entered. Subsequent troubleshooting revealed that the problem was caused by the "input error inhibit" test switch not making up when placed in the inhibit position. The knob on the switch appeared to have rotated on its shaft when repositioned from normal to inhibit. This allowed energization of the source range instruments and resulted in the actuation of the "A" reactor trip breaker during testing of the source range trip function. With the plant at power, there is no indication available to the instrument technician that will verify the switch has made up in the inhibit position. The licensee completed troubleshooting and satisfactorily performed procedure 1-PT-36.1A within the action statement time limits specified in TS 3.3.1.1 and 3.3.2.1.

No violations or deviations were identified.

5. ESF System Walkdown (71710)

On September 10 and 11, the inspector walked down the accessible portions of the LHSI system on Unit 2. The valve checkoff list 2-OP-7.1A and drawing number 12050-FM-096A, Revision 19, were reviewed. The inspector noted no inconsistencies between the valve checkoff list and the system drawing. The inspector also verified that the system's flow orifices were correctly installed with respect to flow direction. The inspector noted that yellow poly bags were placed on or under several valves to contain leakage. This action enables the licensee to reduce the potential for the spread of contamination and to continue in their program to reduce the plant's total contaminated area. The inspector noted that two valves, 2-SI-262 and 2-SI-303, were bagged, but no work request stickers were installed. The licensee determined that no work requests had been initiated for these valve leaks. This is a concern because without work requests being initiated, identified corrective maintenance problems cannot be properly tracked, scheduled and corrected. The inspector also noted the presence of boric acid crystallization on the following four components, indicating the potential of leakage.

a. 2-SI-25, boric acid crystallization observed on valve packing.

b. FE-2948, boric acid crystallization observed on flow orifice between the flanges.

c. 2-SI-42, boric acid crystallization observed on cap threads.

d. 2-SI-198, boric acid crystallization observed on cap threads.

None of these components exhibited any active leakage. These observations were identified to the licensee for review and appropriate action. No other problems were identified.

No violations or deviations were identified.

6. Operational Safety Verification (71707)

By observations during the inspection period, the inspectors verified that the control room manning requirements were being met. In addition, the inspectors observed shift turnover to verify that continuity of system status was maintained. The inspectors periodically questioned shift personnel relative to their awareness of plant conditions. Through log review and plant tours, the inspectors verified compliance with selected TS and LCOs. In the course of the monthly activities, the resident 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; and escorting of visitors. On a regular basis, RWPs were reviewed and the specific work activity was monitored to assure the activities were being conducted per the RWPs. The inspectors kept informed, on a daily basis, of overall status of both units and of any significant safety matter related to plant operations. Discussions were held with plant management and various members of the operations staff on a regular basis. Selected portions of operating logs and data sheets were reviewed daily. The inspectors conducted various plant tours and made frequent visits to the control room. Observations included: witnessing work activities in progress; verifying the status of operating and standby safety systems and equipment; confirming valve positions, instrument and recorder readings, and annunciator alarms; and observing housekeeping.

On August 24, 1989. during the performance of a scheduled surveillance test on motor driven AFW pump 2-FW-P-3B, the licensee noted steam issuing from one packing gland. Licensee investigation revealed that the valves supplying cooling water to the packing for all of the Unit 2 AFW pumps and the steam driven pump on Unit 1 were inappropriately positioned.

There are a total of eight supply valves for the two packing glands associated with each of the four affected AFW pumps. Three valves were closed and the other five valves were almost closed (1/8 to 1/4 turn open). The valves on the remaining Unit 1 AFW pumps were properly positioned. The affected valves were repositioned and special order tags attached to preclude unauthorized operation. These isolation valves were not identified with a valve number, included on the system drawing or aligned by the AFW system's valve line-up operating procedure. The licensee has since identified the valves by number, included them on the valve line-up operating procedure, and revised the system drawings for their inclusion.

The effects of cooling water isolation to the pump packing glands on equipment operability was evaluated by the licensee. The following conclusions were reached.

a. The pump packing could be damaged if the packing was adjusted too tightly.

b. The damaged packing would allow the flow of water along the shaft and into the gland area.

c. No pump damage would occur due to the positive pump suction pressure (10 psig). Cooling water is supplied off the first stage of the pump.

The pump vendor, contacted by the licensee, indicated general concurrence with this evaluation. The vendor stated that in a worst case scenario the absence of leakage could cause shaft sleeve scoring, premature packing wear, and excess leakage. This excess leakage could cause some water to enter the bearing housing and affect bearing life. The vendor concluded that the bearing would operate for more than 2 hours with a water/oil mixture.

The inspectors reviewed the licensee's conclusions and the vendor's comments with the system engineer and engineering supervisor. There exists no technical documentation that addresses the expected length of pump operation under these conditions. The conclusions of the licensee and the vendor are based on their collective engineering experience and judgement with these and similarly designed pumps. The inspectors agree with their assessment and feel that reasonable assurance exists that the AFW pumps were operable while cooling water was partially isolated to the packing glands.

The licensee reviewed the security records for entry into the AFW pump rooms in an attempt to determine if an individual(s) improperly isolated cooling water to the pump packing glands. The licensee was unable to determine any commonality that would identify the individual(s) likely to have caused the problem. The licensee concluded that the valves were most likely shut by unknowledgeable personnel during plant cleanup to secure packing flow to the floor drains.

On August 25, the inspectors became aware of a problem involving improperly installed flow orifices at the Surry Power Station. Based on the Surry discovery, the inspectors requested North Anna review the situation and determine whether or not it was generic to them. The inspectors were informed that North Anna had initiated action to inspect the station flow orifices on August 30, 1988 based on the initial discovery of a flow orifice problem at the Surry Station. The task of developing and performing the inspection program was assigned to engineering on November 3, 1988. However, due to lack of engineering support and the lack of a high priority being placed on the inspection, the due date for this item was extended four times until the present request by the inspectors. During the extension period, four orifices had been identified as being installed backwards. Of these four, only two had work requests initiated and there were no deviation reports written. Consequently, the safety committee and station management were not properly made aware of the potential problem associated with improperly installed flow orifices. This resulted in decisions to extend the inspection due dates which were not based on complete information.

Following this discovery, the licensee initiated action to inspect the accessible orifices in the station. The results identified five additional orifices which had been installed backwards. An engineering evaluation was conducted on each of the nine improperly installed orifices and a determination was made concluding that none of the orifices presented either an operational flow problem or a flow indication problem. Consequently the licensee concluded that a safety issue did not exist and the orifices could remain installed until an outage occurred allowing them to be corrected. The inspectors reviewed portions of the evaluation and concurred with the licensee's conclusion. Of the remaining orifices for which orientation could not be determined, either due to their inaccessibility or the lack of indication on the orifice tab, the licensee evaluated the effect of each of the orifices as if they were installed backwards and came to the same conclusion as determined for the nine orifices discussed above, that no safety issues exist.

Even though no safety-related problems were identified by these evaluations, a number of weaknesses associated with the licensee's programs were identified. These are discussed as follows:

a. The situation demonstrated a lack of the proper engineering support to address either the safety significance of the issue or to perform the inspection. Consequently, the orifice inspections were extended through refueling outages for both units in early 1989, where not only could the inspections have been easily performed on all of the orifices but corrective actions could have been taken. These extensions were requested by engineering even though there had been several orifices identified as installed backwards indicating a potential problem.

b. The failure of the engineer, given the assignment, to initiate deviation reports for the improperly installed orifices, prevented station management from reviewing the situation and making an informed decision concerning the actions to be taken.

c. The failure of the engineer to ensure that work requests were generated on two of the improperly installed orifices demonstrates a problem with the licensee's corrective maintenance program. Another example of this problem, concerning valves which were identified as having potential leaks for which no work requests were initiated is discussed in paragraph 5 of this report.

On September 6, 1989, the Waterford 3 Nuclear Power Station notified the licensee that contaminated teledosimetry instrumentation, shipped from North Anna by the Westinghouse corporation, was received at the Waterford Station. The contamination was detected when the instrumentation alarmed the portal monitor at the entrance to the plant. No contamination was detected on the exterior or interior packing. The licensee determined, working with the Waterford Health Physics department, that the limits for reportability, with respect to 10CFR20, were not exceeded. This item will be identified as an unresolved item (338,339/89-28-02) pending a review by region based health physics inspectors.

On September 21, 1989, the licensee began preparations for potential severe weather as a result of Hurricane Hugo. Site walkdowns were conducted to secure any loose equipment and remove potential missile hazards. The inspectors conducted site walkdowns on September 21 and 22. As a result of discussions with the inspectors, the licensee relocated several loosely secured high pressure gas cylinders and one fire extinguisher. By September 22, lake level had been lowered by approximately 1/2 foot to 249.59 mean sea level and was trending down. A tornado watch was declared for Louisa County at 5:40 a.m. on September 22. The licensee implemented the Abnormal Procedure for Severe Weather Conditions, 1-AP-41, and closed the plant's roll-up and rolling steel doors. The tornado watch was suspended at 12:00 noon and 1-AP-41 was exited.

No violations or deviations were identified.

7. Operating Reactor Events (93702)

The inspectors reviewed activities associated with the below listed reactor events. The review included determination of cause, safety significance, performance of personnel and systems, and corrective action. The inspectors examined instrument recordings, computer printouts, operations journal entries, scram reports and had discussions with operations, maintenance and engineering support personnel as appropriate.

On August 26, 1989, following SW pump manipulations, the licensee performed periodic test 1-PT-62.2.1, RSHX SW Inleakage, to verify that the

RSHXs were being maintained in the required dry layup condition. The results of the test were unsatisfactory. Procedure 1-OP-49.6, Adjusting RWST Isolation MOVs to Reduce Service Water Inleakage, was initiated. This procedure first determines the header that is the source of the inleakage and then provides instructions to adjust the header isolation MOVs to stop the SW inleakage. The process for adjusting the MOV mechanical and electrical stops requires the removal of power from the MOV being worked. Procedure 1-OP-49.6 directs that power be removed and adjustments be made to one header isolation MOV at a time. One of the two series SW header cross-tie MOVs is closed while adjustments are being made to the header isolation MOVs. The cross-tie MOVs are normally open valves downstream of the header isolation MOVs and allow SW flow to be supplied to all four RSHXs from either SW supply header. Since SW supply header "A" was determined to be a source of inleakage, adjustments to the "A" SW header isolation MOVs, 1-SW-MOV-101A and 1-SW-MOV-101B, were required. These valves are normally shut and in a parallel alignment, suppling SW to the "A" and "D" RSHXs. The shift supervisor contacted the control room from the work site and authorized the placement of the danger tag to isolate and remove power from valve 1-SW-MOV-101A. This communication was apparently not clearly given by the shift supervisor or understood by the control room. Danger tags were placed and power removed from both 1-SW-MOV-101A and 1-SW-MOV-101B. These valves remained closed and de-energized for approximately 47 minutes. The shift supervisor discovered the error during his review of the completed tagging record. Power was then returned to 1-SW-MOV-101B.

During the time that both of these valves were closed and de-energized, SW flow was not automatically available to RSHXs "A" and "D" with the SW header cross-tie valve, 1-SW-102B also closed. On August 27, the licensee contacted the inspector and briefed him on the event.

Technical Specification 3.6.2.2 requires, in part, that the containment recirculation spray system be <u>OPERABLE</u> with four separate and independent containment recirculation spray subsystems, each composed of a spray pump, associated heat exchanger and flow path. Allowance is given by the associated action statement for one containment recirculation spray subsystem to be inoperable for up to seven days. By closing and de-energizing 1-SW-MOV-101A and B with 1-SW-MOV-102B closed, the licensee rendered two containment recirculation subsystems inoperable for 47 minutes. The failure to comply with the requirements of TS 3.6.2.2 is identified as Violation (338/89-028-03).

On November 11, 1988, an event similar to that described above occurred. With the "A" outside recirculation spray pump on both units tagged out for maintenance, the unit SRO's for both units authorized the performance of a calibration procedure on the casing cooling tank level instrumentation. Since this level instrumentation could prevent the associated casing cooling pump from starting and supporting the operating recirculation spray pump, the casing cooling subsystem for which the level instrument was being calibrated was also considered inoperable. TS 3.6.2.2 requires all four recirculation spray subsystems to be operable as well as the two casing cooling subsystems. The Action Statement associated with the TS allows one of the six subsystems to be inoperable for up to seven days. This violation of TS 3.6.2.2 was identified as Licensee Identified Violation (LIV 338,339/88-31-05).

On August 28, with adjustments completed to the SW header isolation MOVs and SW leakage reduced to acceptable values, a containment entry was made to perform 1-PT-62.2.1A, RSHX SW Inleakage. This test verifies that the RSHXs are being maintained in dry layup and drains any accumulated leakage. Approximately 34 gallons of SW were drained from each RSHX. This value meets the procedure acceptance criteria of less than 100 gallons of fluid from each RSHX drain valve in order to verify the continued maintenance of dry layup conditions. The acceptance criteria of 100 gallons is based on a licensee calculation of the volume of the RSHX and piping that is below the tubesheet and above the drain. The licensee has concluded that with this volume of SW inleakage below the tubesheet, fouling of the RSHXs tubes is not impacted and the RSHXs are considered to be maintained in a dry layup condition.

On August 29, following satisfactory completion of several surveillance checks for SW inleakage at an increased frequency of every 4 hours, the surveillance interval for 1-PT-62.2.1 was returned to its normal weekly frequency.

8. Operator License Verification (RAI 89-34, 41701)

The inspector reviewed the controlling procedural guidance for operator license verification and control. The licensee does not presently provide the on-duty shift supervisor with a mechanism to accurately and efficiently assess the current license status for all potential shift licensed operators. The licensee does, however, have various mechanisms, both formal and informal, to provide qualification information on licensed operators to the shift supervisors. The Superintendent of Operations periodically issues an Operations Department Roster that lists the licensed operators assigned to the five shifts with some accompanying medical restrictions, e.g. glasses or no solo. Another memorandum, addressing the shift assignment of staff licensed operators for training and shift coverage purposes, is also routinely issued by the Superintendent of Operations. This memorandum does not identify license restrictions like the one previously discussed. Neither document addresses the active/inactive status of operators or their currency with respect to requalification training. Discussions with a shift supervisor indicates that some are tracking the active license status and the qualification training status of the Operations Department personnel assigned to their shift. The staff operators are not being tracked by the shift supervisors.

The removal from licensed duties of an operator is the responsibility of the Superintendent of Operations. In making this determination, the superintendent relies on input primarily from the Training Department. The controlling guidance is contained in the "Licensed Operator Requalification Program" nuclear training program guide. The program guide addresses the removal of operators from license duties as a result of the following two situations:

a. An operator is placed in an inactive status.

b. An operator exhibits significant deficiencies in the requalification training program or during licensed duty performance.

The mechanism for removal is by means of a memorandum. Should an operator be placed in an inactive status, the memorandum is sent to the Superintendent Nuclear Training with distribution copies to the affected operator, station management and shift supervisor. In the event of demonstrated operator performance deficiencies, a memorandum is sent to the operator with no specified distribution list for copies. Review of some past examples and discussions with the licensee have identified the two following concerns with this methodology.

a. A time delay could be incurred from the onset of identification of the disqualifying event until the formal memorandum to the operator is issued. In one instance, an operator was verbally notified of his removal from licensed duties on May 6, 1988, but the memorandum was not issued until May 10, 1988. The inspector reviewed the operators' logs and verified that this operator did not perform licensed duties from May 6 to May 10, 1988.

b. A copy of the memorandum removing an operator from licensed duties is not routinely distributed to all shift supervisors. If the affected operator is a member of the Operations Department, a copy is forwarded to the operator's shift supervisor. If the operator is not a member of the Operations Department, the memorandum would not necessarily be distributed to the shift supervisors. As a result, all shift supervisors may not be cognizant of a change in status of a potential licensed shift watchstander.

The licensee's Training Department is responsible for tracking and maintaining the records to support the licensed operators' currency with respect to both an active license status and the requalification training program. In addition to the filed records that support the operators' status, the Administrative Assistant maintains several computerized tracking systems. This information base allows one to quickly check on an operator's active/inactive status, requalification training status and required on-shift time completion. The Administrative Assistant and senior training inspector indicated these summaries are periodically reviewed to assure timely completion of any outstanding items by an operator. There exists, however, no formalized requirement for these checks or a flagging system that would identify an operator about to become delinquent with respect to the requalification training program or required on-shift time. The inspector identified four licensed operators who had been removed from licensed duties in 1988 for requalification training deficiencies, medical concerns or failure to maintain an active license status. In no case did any of these operators stand a licensed shift during the time that they were disqualified. The inspector also verified with shift records that the dates submitted by 3 licensed operators (2 in 1989 and 1 in 1987) for completion of on-shift time in maintenance of their active license status were valid.

The existing license controls in this area rely substantially on the integrity and veracity of the licensed operator. Some information, as previously discussed, is supplied to the shift supervisor. However, this information does not provide shift management with a definitive mechanism to assure that shift watchstanders are qualified in all respects.

The licensee has indicated that they are reviewing their system of controls to ensure that only fully qualified operators perform license required duties. Preliminary indications are that enhancements will be made that will enable the shift supervisors to rapidly determine the qualification status of all assigned licensed personnel. The anticipated completion date for any changes is November 1989. The inspectors will follow this program and review any changes for effectiveness.

9. Safety Assessment (40500)

On September 21, 1989, resident inspectors from Surry and North Anna, and the NRC project engineer for Virginia Power plants visited corporate offices at Innsbrook Technical Center in Richmond, Virginia. The visit included discussions associated with the scheduling of current projects, discussions with Nuclear Operations management, discussions with Engineering management, and overviews of ongoing activities in the Emergency Planning, Nuclear Operations Support, Quality Assurance and Licensing areas. Although the schedule did not provide for detailed review of any area, it was apparent that the licensee had a lot of new programs in progress. These new programs were in various stages of preparation and/or development. The inspectors concluded that additional inspection time in the corporate offices to focus on specific programmatic enhancements was warranted and additional inspection activities will be scheduled as implementation of the new programs progress.

10. Exit

The inspection scope and findings were summarized on September 25, 1989, with those persons indicated in paragraph 1. The inspectors described the areas inspected and discussed in detail the inspection results listed below. The licensee did not identify as proprietary any of the material provided to or reviewed by the inspectors during this inspection. Dissenting comments were not received from the licensee.

Item Number	Description and Reference
338,339/89-28-01	Inspector Followup Item: Review of licensee's actions concerning calibration of installed TS related instrumentation (paragraph 4).
338,339/89-28-02	Unresolved Item: Potential violation concerning the transportation of contaminated instrumentation from North Anna to the Waterford Station (paragraph 6).
338/89-28-03	Violation: Failure to comply with TS 3.6.2.2 by inadvertently rendering two recirculation spray subsystems inoperable for approximately 47 minutes (paragraph 7).

13. Acronyms and Initialisms

AP	Abnormal Procedure
AFW	Auxiliary Feed Water
AMSAC	ATWS Mitigation System Actuation Circuitry
ATWS	Anticipated Transient Without Scram
CAD	Computer Assisted Drawing
CAE	Condenser Air Ejector
CDA	Containment Depressurization Actuation
CRO	Control Room Operator
DCP	Design Change Package
DHR	Decay Heat Removal
DUR	Drawing Update Request
EDG	Emergency Diesel Generator
EP	Emergency Procedure
ESF	Engineered Safety Feature
EWR	Engineering Work Requests
GPM	Gallons Per Minute
HP	Health Physics
IFI	Inspector Follow-up Item
LCO	Limiting Condition for Operation
LER	Licensee Event Report
LHSI	Low Head Safety Injection
MCC	Motor Control Center
MOV	Motor Operated Valve
MPC	Maximum Permissible Concentration
MREM	Millirem
MSSV	Main Steam Safety Valve
MT/E	Maintenance and Test Equipment
NIS	Nuclear Instrumentation System
NRC	Nuclear Regulatory Commission
NSE	Nuclear Safety Engineering
PDTT	Primary Drain Transfer Tank
PES	Plant Engineering Services

PORV	Power Operated Relief Valve
PROM	Programmable Read Only Memory
PSIG	Pounds Per Square Inch Gauge
PTSS	Periodic Test Scheduling System
RCS	Reactor Coolant System
RHR	Residual Heat Removal
RMS	Radiation Monitoring System
RSHX	Recirculation Spray Heat Exchanger
RTD	Resistance Temperature Detector
RWP	Radiation Work Permit
RWST	Refueling Water Storage Tank
S/G	Steam Generator
SALP	Systematic Assessment of Licensee Performance
SI	Safety Injection
SNSOC	Station Nuclear Safety and Operating Committee
STA	Shift Technical Advisor
SW	Service Water
TS	Technical Specification
TSC	Technical Support Center
UE	Unusual Event
URI	Unresolved Item
UFSAR	Updated Final Safety Analysis Report
VCT	Volume Control Tank
WOG	Westinghouse Owners Group