

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

Report Nos.: 50-250/89-39 and 50-251/89-39 Licensee: Florida Power and Light Company P. O. Box 14000 Juno Beach, FL 33408-0420 Docket Nos.: 50-250 and 50-251 License Nos.: DPR-31 and DPR-41 Facility Name: Turkey Point 3 and 4 Inspection Conducted: August 9-11, 1989 Inspectors: 1.23 54 ey, Team Leader Date Signed Team Members: M. Morgan A. Lopez Approved by: ノローネス T. Peebles, Chief Date Signéd Operations Branch Division of Reactor Safety

SUMMARY

Scope:

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This special announced inspection was a follow-up to the NRC-administered requalification examinations of March 13 - March 20, 1989, the special announced inspections of April 6 - May 4, 1989, and the NRC-adminstered "retake" examinations of May 31 - June 2, 1989.

This inspection was conducted in order to observe licensee performance of "day-to-day" control room operations and to further assess the performance of licensed technical staff and operating crews during requalification training.

These observations/assessments were used to ascertain the effectiveness of the licensee's program in the correction of generic weaknesses found during the aforementioned examinations/inspections.

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~ Results:

No violations or deviations were identified. The inspection revealed that improvements have been made in areas of shift turnover and relief, use of plant procedures - specifically use of EOPs - and in APSN/PSN role definition.

Improvements were also noted in logkeeping and supervision of plant operator actions, however, some weaknesses in verbal communications, control board manipulation, diagnoses of plant operating conditions, plant tagging procedures/practices, STA interface/usage and use of EPIPs and Technical Specifications exist.



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REPORT DETAILS

1. Persons Contacted

Licensee Employees

- *J. Cross, Plant Manager
- *L. Pearce, Operations Superintendent
- *T. Finn, Assistant Operations Superintendent
- *R. Mende, Operations Supervisor
- *H. Johnson Jr., Assistant Operations Supervisor
- D. Powell, Technical Department Assistant Superintendent
- P. McCullough, FP&L Nuclear Training Manager
- *K. Beatty, Training Superintendent
- *G. Hollinger, Operator Training Supervisor
- *S. Day Jr., Regulation and Compliance Engineer

NRC Representatives

- *T. McElhinney, Resident Inspector
- *M. Morgan, DRS/OLS_1 Examiner
- A. Lopez Jr., PNL Examiner

*Attended exit interview

2. August 9-11, 1989, Regualification Training Crew Assessments/Observations

Six simulator training classes were observed. Of three crews involved in this portion of "requal" training, two crews were made up of licensed operations department personnel and the remaining crew consisted of four licensed individuals from the plant's technical support staff.

a) Crew Communications

In two of the three groups observed - operations department crews weaknesses were presented in the "RO-to-APSN", "BOP-to-APSN" and the "APSN-to-PSN" communications interface. Crew ROs and BOPs often tended to take actions independent of APSN/PSN directions.

For example, during a simulated LOCA event, the RO noticed that the RCS leak was increasing and he mentioned that such a condition was occurring. He failed, however, to clearly direct his remarks toward the APSN. In presenting verification statements, the RO would turn away from the APSN. He failed to ensure that the APSN had clearly heard him. Delays in prompt performance of EOP steps was caused by this lack of "repeat-back" since the APSN had to continually ask if steps had been performed by the RO.



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2. August 9-11, 1989, Requal Training Crew Observations (Continued)

a) Crew Communications (Continued)

During the same event, the BOP - during performance of EOP immediate and subsequent actions - failed to inform the APSN, or other members of the crew, of these actions. The BOP continued to act independant of crew throughtout most of the event until the APSN took charge of the situation and told the BOP to follow supervisory direction.

Performance of EOP actions without a series of verbal "checks and balances" between the RO, the BOP and the APSN can result in operation of systems/components during time periods when it is not desirable to operate them.

During a main steam leak event, the BOP, from the other operations crew, failed to inform the APSN of the failure of a MSIV to close in response to the simulated main steam line rupture.

The BOP took appropriate immediate actions for the MSIV failure, as per directions given by the PSN, however, he then proceeded to "go it alone" for the remainder of the event. He was inattentive to any follow-up directions given by the PSN or APSN. The BOP also failed to report subsequent actions taken to either the APSN or PSN. This failure to report such actions resulted in many questions of status by the APSN, e.g., "Have you shifted ...", or "Did you perform ...?"

In the case of both operations department crews, the APSN/PSN "faceto-face" verbal communications interface was weak. Little or no effort was made on the part of the PSN to keep the APSN informed of changes in the status of the EPIPs. Updates from the PSN to the APSN on the status of critical plant parameters, during simulated events, was inadequate and ofttimes, nonexistent.

All three crews exhibited a common problem of failing to clearly identify the STA as part of the crew. All crews failed to establish a proper "STA-to-PSN/APSN" verbal communications interface.

In four of the six classes observed, the STA had the responsibility of filling out critical data sheets for updates on the status of the "critical safety functions" (CSFs). At no time did the STAs clearly (verbally) communicate the information obtained to the PSN or APSN.

Plant parameters would change from "red path to an orange path", "green path to yellow path", CSF conditions with little or no verbal exchange between the STA and the PSN/APSN. The STA also failed to describe or otherwise provide "non-CSF related" plant conditions. The STAs were never encouraged to take part in discussions of event corrective actions.



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2. August 9-11, 1989, Requal Training Crew Observations (Continued)

a) Crew Communications (Continued)

During observed events, the STA would simply fill out CSF status sheets, place them by the APSN's desk and he would provide no verbal communication of on-going CSF status. This lack of any verbal communication and lack of continual CSF status update resulted in the APSN being unaware of entry into "yellow path" conditions.

b) SRO Supervisory Skills

APSN crew supervision, e.g., "directing immediate operator actions", has improved and was adequate. In most observed events, the APSNs made sure that the crew followed given directions and they assisted the ROs/BOPs as necessary. The APSNs clearly defined their position among the crew and they remained "in control" of crew activities.

The following supervisory skill weaknesses were presented by those personnel in the APSN/PSN/STA roles:

- Little or no reference was made to plant Technical Specifications by the PSNs, APSNs or STAs, however, no violations of specification requirements occurred.
- (2) The PSNs tended to focus solely on E-Plan activities and they failed to provide an "on-going" status of these E-Plan activities to the APSN or the other crew members.
- (3) During activites which required E-Plan guidance, the PSNs became detached from direct plant operation. In performing their activities, they were not facing control room panels and crew, i.e., the PSNs were reviewing the E-Plan rather than evaluating plant conditions. This has an impact on the effectiveness of PSNs to diagnosis plant conditions.
- (4) It appeared that the PSNs provided more administrative than technical assistance. Such technical input would have improved crew performance in scenarios involving excessive steam leakage and those requiring determinations of pressurized thermal shock (PTS).

While it is necessary for the PSNs to be continually cognizant of E-Plan functions it was to the detriment of PSN participation in other plant evolutions.

c) Use of Procedures

Generally, the use of operating, abnormal, and emergency procedures by the crews was exemplary. APSNs and PSNs, however, continued to display weaknesses in effectively using the EPIPs. STAs were weak in their use of EOP "CSF logics" - specifically, CSF determinations.

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2. August 9-11, 1989, Requal Training Crew Observations (Continued)

During an RCS leak scenario, the APSN failed to thoroughly review the EPIP when the PSN showed him an "Unusual Event" (UE) classification. This "UE" classification noted that the plant Technical Specifications should be referenced, however, no referral to the specifications was made by either the PSN, APSN, or STA.

While, in this scenario, no violations of Technical Specification LCOs occurred, this lack of reference to plant specifications, as required by procedure, presents weaknesses in procedural adherence.

In a similar scenario, with a different crew, the PSN classified the event as a "UE", however, he failed to mention it to the APSN. Upon later changing the classification to a "Site Area Emergency" (SAE) the PSN displayed an unfamiliarity with the EPIP classification tables and a weakness in being able to correctly use the EPIPs.

In confirming of his original "UE" classification - by checking the requirements of events other than an RCS leak - he failed to immediately note that a classification for "RCS Leak" existed. After approximately twenty minutes, the PSN noted the correct table heading and classified the event as a "SAE" for an RCS leak.

In followup questioning by the NRC observers, the PSN stated that he had based his final decision on the premise that the leak was greater than 50 gpm and that the event was solely an RCS leak.

STAs presented deficiencies in their use of CSF status sheets. They would simply note parameter changes with no thought as to what technical/operational purpose was being served by their actions, e.g., control of reactivity, heat sink, inventory, etc...following an event.

In all observed events, the STAs failed to properly use emergency procedures since no true "trending" of parameters was performed. The STAs failed to associate changes in CSF "yellow path/green path" conditions and other changes in plant operation with any "on-going", "dynamic change" information received. Their ability to adequately use the EOPs, specifically CSF information, is questionable.

d) Crew Ability to Diagnose Plant Conditions

Overall, with the exception of the STAs, the crews performed well in the area of event and plant condition diagnosis.

Observed weaknesses in this area include the failure of the STA to correctly interpret data input from recorder strip charts and QSPDS.

2. August 9-11, 1989, Requal Training Crew Observations (Continued)

One crew's STA was asked by the APSN to determine if RC temperatures were "stable or decreasing". Upon looking at the QSPDS, he mentioned that it was "increasing". In fact, RC temperature, at this time, was stable or slightly "decreasing". The STA failed to allow the QSPDS to complete its RC temperature input cycle - an approximate 15 second update - before noting actual trends and before giving his answer. QSPDS information noted by the STA - and relayed to the APSN - was inaccurate and incorrect.

There was a heavy reliance, on the part of the STA and the PSN, on information received from the QSPDS. Very little follow-up verification, by noting of backup parameter indications - e.g., plant trend recorders - was performed by either the STA or PSN.

e) Crew Ability to Manipulate Controls

Most of the observed crews responded promptly and efficiently to simulated events, however, the technical staff crew RO was often hesitant in his performance of required operator actions.

In one observed "event" - Main Steam Leak - the technical staff RO was told by the APSN to reset the safety injection (SI) signal. The RO was unable to find the SI reset switches until they were pointed out to him by the APSN. At this point, the RO was still hesitant to perform the required action. The RO then proceeded to "reset the SI signal", however, he failed to verify that SI reset had occurred.

The technical staff crew RO was unable to correctly keep abreast of various plant conditions, e.g., the change in safety injection/CCW valve alignments upon SI actuation. Direct APSN guidance corrected this particular problem.

f) Conformance to Facility Technical Specifications

All three crews exhibited a general weakness in conformance to the facility Technical Specifications, in that, they did not refer to nor use them during routine operation or in event recovery. Even when problems presented were covered by a specific specification LCO or numerous LCOs, no reference was made to the specifications.

During two observed "RCS leakage" events, crew APSNs failed to refer to the specifications although a note in the EPIP stated that such action should be taken - see comments on "Use of Procedures".

3. August 10-11, 1989, Control Room Observations

Four separate control room observations performed. One evaluation was conducted the morning of August 10th, two, the afternoon of August 10th and the final observation was made during the morning of August 11th. All inspections included both unit three and unit four control room personnel and equipment.

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3. August 10-11, 1989, Control Room Observations (Continued)

a) Control Room Conduct

During evaluations of control room conduct, the following was noted:

- (1) All licensed personnel PSNs, APSNs, ROs and BOPs were very professional in their conduct of operations and a professional attitude was maintained throughout the assessment period. Noise levels were held to a minimum.
- (2) Licensed board operators the BOPs/ROs remained within the "at the controls" area and were constantly aware of plant operating conditions.
- (3) The PSN, APSN, and other supervisory personnel were, for a majority of the time, aware of plant operating conditions and remained in the control room area at all times.
- (4) Effective communications existed between board operators and management/supervisory personnel.
- (5) The control room area was clean, uncluttered, well organized and the latest "up-to-date" revisions of plant procedures were readily available.
- (6) Shift staffing requirements consistently met or exceeded the technical specification "minimums" and the number of fire brigade personnel met minimum requirements.

It was noted by all inspection team members, that a "blind spot" - caused by the relative position of the NI Panels and the main control board (MCB) - exists between where the APSN/PSN is stationed during normal operations and the MCB. The "back one-third" of the vertical control panels, on both units, cannot be effectively nor adequately seen by supervisory personnel.

Plant management personnel have noted the above situation and they are currently awaiting approvals for a design change which could alleviate the problem.

b) Control Room Operations

During observations of plant operations the following was noted:

 The licensed board operators were consistently notified by other plant personnel - both personnel inside and outside the control room area - of functions which could have affected unit operation. • ,

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3. August 10-11, 1989, Control Room Observations (Continued)

- (2) Communications within the control room and between the control room and the plant was understandable, clear and concise. "Repeat back" communications was customary and slang, horsplay, other "non-business" communications were held to a minimum.
- (3) Observed surveillance testing spray pump testing was adequately planned, coordinated, conducted and documented in accordance with the approved/appropriate procedures. Supervisory review of the testing was adequate.
- (4) Observed maintenance tag-outs/clearances were adequately planned, coordinated, conducted, and documented in accordance with the approved/appropriate procedures. Supervisory review was adequate.

It was noted by the inspection team that the control board operators acknowledged alarms as required, however, there appeared to be a tendency, on the part of the operators, to quickly acknowledge, without concern, certain "common/nuisance" alarms.

Independent verification of maintenance/surveillance items appears to be "weak". On one (1) occasion, a completed surveillance was returned by the maintenance group. The RO verified, with the maintenance technician, that the job was complete and the system was returned to normal. The RO then initialed the appropriate block and had the other board operator (from the other unit) check the paperwork and completed the surveillance procedure.

It was noted, during an observed shift turnover, that this weakness in independent verification practices has been recognized by plant supervisory personnel. The PSN of the off-going crew informed both of the crews involved in shift turnover of verification problems. He further suggested that in the future they use true independence of actions in their practices of verifying system alignments.

c) Shift Turnover and Relief

During observations of shift turnover the following was noted:

- (1) Turnover checklists were completed and signed and control panel walkdowns were conducted prior to turnover/relief.
- (2) Significant maintenance or surveillances in progress, being planned or completed was adequately reviewed between shifts.
- (3) Sufficient information on plant status, operating events and abnormal component/system alignments was transferred.

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3. August 10-11, 1989, Control Room Observations (Continued)

- (4) A thorough shift briefing was conducted between shifts and involved all applicable plant operation personnel - both licensed and non-licensed. All personnel were informed of unusual plant conditions, tests planned, night order items and overall planned evolutions.
- (5) Generally, at each station, throughout turnover/relief, a professional attitude was presented, proper communication was maintained and a thorough review of turnover items was conducted. Turnover checklists were complete.

During an observed turnover of board operators, it was noted that four individuals, who were not involved in the turnover, had gathered around the desk area of the "on-coming" and "off-going" board operators. Conversation among this group included information on fishing and automobiles.

It has been recognized by facility management, that a "one-on-one" situation should be maintained throughout the turnover and during shift briefing preparations. It has also been recognized that turnover communications should be kept within the confines of plant operation and the specifics of maintaining the actual watchstation.

d) Shift Logs and Records

During observations of shift logs/records the following was noted:

- (1) Logbook entries were neat and legible and they adequately reflected plant status and abnormal system/equipment alignments. Errors were corrected by a single line drawn through the incorrect entry and they were initialed/dated.
- (2) Significant operational events, unusual parameters, and alterations to system alignments were recorded.

One noted problem was a use of scrap paper for initial log entries.

Although this "scrap paper" information was later transferred to a formal logbook, this practice should not be encouraged since this scrap paper could just easily have been thrown out with other pieces of scrap paper prior to the transfer of pertinent information. This ill-advised routine was brought to the attention of management.

e) Control Room Operating Panels

During the inspection of operating panels the following was noted:

(1) For the most part, controls/instrumentation were clearly labeled and in accordance with procedure terminology.

3. August 10-11, 1989, Control Room Observations (Continued)

- (2) Units of measurement in the instruments and recorders were, the same as those used in the facility procedures.
- (3) Key locked controls had the keys removed and the keys were under supervisory control.
- (4) For the most part, personal protection/information tags were appropriately sized to prevent interference with other controls/instruments and sized to minimize operator distractions.

A general observation of the panels presented inconsistencies in the use of tags. Tags were either too small or outdated or associated equipment was tagged with "information" tags when they should have been tagged with "caution" tags.

Besides the tags being outdated, the equipment which was tagged had been "out of service" for long periods of time. Attention to proper equipment or annunciator function and operation is questionable.

The following are examples of these inconsistences:

- (1) PWO (green) tags Boration Control Panels
 - (a) Tag #1, Dated 7-29-88 Stated that the "Boric acid totalizer doesn't count"
 - (b) Tag #2, Dated 4-23-88 Stated that the "Boric acid totalizer counts with no flow"

Both tags were too small, not clearly visible and should have been caution tagged. The totalizer has not been repaired within a reasonable length of time.

(2) Tag T-89-162 (MOV3-1414) - Circulating Water Valve

Tag states - "Drifts closed and gives dual indication."

Tagged with an "information" tag, whereas a "caution" tag would be more appropriate. "Information" provided is more of a problem in operation of a system and/or component.

(3) Tag T-89-60 - Accumulator

Tag states - "N2 regulator will not regulate with CV-855 closed, pressure exceeds 675#, could damage HCV 936." Tagged with an "information" tag, whereas a "caution" tag would be more appropriate. "Information" provided is more of a problem in operation of a system and/or component.



3. August 10-11, 1989, Control Room Obervations (Continued)

(4) Information Tag dated August 3, 1989, Annunciator J 5/2, "Common Battery Charge D33 Trouble"

Tag states - "Annunciator lit due to low charging current and charger has been placed in standby."

Two years is a long time for an annunciator to remain lit for the above listed condition. Annunciator becomes a "common" or "nuisance" alarm and serves no real purpose.

(5) Information Tag dated September 17, 1988, Annunciator A 6/6, "Seal Water Injection Filter High Delta-P"

Tag states - "I&C has submitted request for engineering assistance."

Again, equipment has been out of service for too long. Annunciator becomes a "common" or "nuisance" alarm and serves no real purpose.

All of the above tagging inconsistences have been brought to the attention of facility supervision/management.

4. Action on Performance Enhancement Program (PEP) Items (92701)

a) Item #5.01.01.D (-01) - Utilize Training Feedback Sessions

Operations and facility training department representatives are currently meeting on at least a weekly basis; (normally "on-going"), in order to review various items contained within the facility's new requalification training program.

The above requalification training items are further evaluated for operational relevancy and to ensure that they reflect and address both operational needs and requirements. For example, during our observations of operations personnel performance, new "1A" revisions to EOPs were performed as part of requalification training.

These actions reflect a use of adequate "feedback" to enhance program content and quality and therefore, this item is closed.

b) Item #5.01.01.D (-02) - Ensure Plant Manager and Operations Superintendent Attend Final Simulator Exams/Participate In Critique

The plant manager and both the operations superintendent and supervisor attended, and was directly involved in, the individual critiques of the operators who participated in the NRC-adminstered "retake" examinations of May 31-June 2, 1989.

Due to their involvement in the above simulator examinations and since they currently plan on continuing to participate in future simulator exams and critiques, this item is closed.



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4. Action on PEP Items (Continued)

c) Item #5.01.01.D (-04) - Develop/Implement Tracking Sys for Plant and Procedure Changes for Updating Trg Mat'l - Establish Accountability

A tracking program had been implemented just prior to this inspection. Accountability of this program was assigned to the training superintendent.

At the time of this inspection an inadequate time period had elapsed, since program implementation, to fully evaluate program effectiveness. This item remains open.

d) Item #5.01.01.D (-05) - Develop Schedule and Agenda for Meetings Between the Plant Manager and Training Personnel

Meetings are scheduled on a quarterly basis. Training department status reports and goal accomplishments are "on-going" and updated on at least a monthly and ofttimes weekly basis.

The agenda for these meetings include operations, maintenance and administrative training concerns and the training department interface. Updates on the aforementioned status reports and goals are also included as a regular part of the agenda.

This item is closed.

e) Item #5.01.01.D (-08), - Upgrade Plant Operator Training Materials and "Job Performance Measures" (JPMs).

Plant operator training materials are currently and continually being upgraded - e.g., ongoing changes to EOP training materials to reflect new revisions of plant EOPs.

JPMs are being both developed and upgraded as part of ongoing requalification program development.

The "upgrading" of both training materials and JPMs are ongoing and since, at the time of this inspection, an inadequate time period had elapsed, to fully evaluate upgraded material effectiveness, this item remains open.

f) Item #5.01.01.D (-09) - Assure Simulator Certification by December 1989.

At the time of this inspection, an "action plan" for certification was being completed. Scheduling for completion of various simulator certification "benchmarks" was to be completed. Some aspects of the actual certification process had begun.



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The facility intends to certify their simulator by December 1990.

Since the facility's action plan for simulator certification was not yet complete and since actual certification process is "on-going", this item remains open.

g) Item #5.01.01.D (-13) - Commence Monthly Training Meetings

Meetings are currently being scheduled on a monthly basis. Various facility training needs are addressed by department representatives. The agenda for the meetings include program development and reports on on-going training for the various plant departments.

This monthly meeting is attended by various plant department representatives, operations superintendent, quality control personnel, technical staff personnel, training department personnel and, at times, the site vice president and plant manager.

This item is closed.

5. Exit Interview

The inspection scope and results were summarized on August 11, 1989, with those persons indicated in Paragraph 1. The inspection team informed licensee management that some of the PEP items had been reviewed, and that conclusions regarding their status would be reported at a later date. Proprietary information is not contained in this report.

6. Acronyms and Initialisms

APSN	-	Assistant Plant Supervisor Nuclear
BOP	-	Balance of Plant (Operator)
CCW	-	Component Cooling Water (System)
CSF	-	Critical Safety Functions
DRS	-	Division of Reactor Safety
EOP	~	Emergency Operating Procedure
EPIP	-	Emergency Plan Implementing Procedures
1&C	-	Instrumentation and Control (Department)
IFI	-	Inspector Follow-up Item
LOCA	~	Loss of Coolant Accident
МСВ	-	Main Control Board
NRC	-	Nuclear Regulatory Commission
OLS	-	Operator Licensing Section
PEP	-	Performance Enhancement Program
PNL	-	Pacific Northwest Laboratories (Battelle)
PSN	••	Plant Supervisor - Nuclear
PTS	-	Pressurized Thermal Shock

PWO - Plant Work Order



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	5.	Acronyms	and	Initialisms	(Continued))
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RC - Reactor Coolant
RCS - Reactor Coolant System
RO - Reactor Operator
SAE - Site Area Emergency
SI - Safety Injection
SRO - Senior Reactor Operator
STA - Shift Technical Advisor
QSPDS - Qualified Safety Parameters Display System
UE - Unusual Event



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