



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

Report Nos.: 50-348/85-17 and 50-364/85-17

Licensee: Alabama Power Company
 600 North 18th Street
 Birmingham, AL 35291

Docket Nos.: 50-348 and 50-364

License Nos.: NPF-2 and NPF-8

Facility Name: Farley 1 and 2

Inspection Conducted: March 18-22, 1985

Inspection at Farley site near Dothan, Alabama

Inspectors:	<u>L. E. Foster</u>	<u>4/17/85</u>
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	T. E. Conlon, Section Chief	Date Signed
	Engineering Branch	
	Division of Reactor Safety	

SUMMARY

Scope: This routine, announced inspection entailed 135 inspector-hours at the site concerning licensee response to Generic Letter 83-28, Required Actions Based on Generic Implications of Salem Anticipated Transient without Scram (ATWS) Events. Areas inspected included: post-trip review; equipment classification; vendor interface and manual control; post-maintenance testing; and reactor trip system reliability.

Results: One violation was identified - Failure to Follow Procedure FNP-0-AP-52 on Maintenance Work Request No. 107514 - paragraph 8.c.

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REPORT DETAILS

1. Persons Contacted

Licensee Employees

- *D. N. Morey, Assistant Plant Manager - Operations
- *W. B. Shipman, Assistant Plant Manager - Support
- *B. R. Yance, Section Supervisor - Electrical
- *W. G. Ware, Safety Audit Engineering Review (SAER) Supervisor
- *L. A. Ward, Maintenance Superintendent
- L. Williams, Training Representative
- L. Bradshaw, General Plant Technical Service (GPTS) Supervisor
- *R. D. Hill, Operations Supervisor
- K. Kendricks, General Plant Technical Service (GPTS) Technician
- C. Nesbitt, Technical Superintendent
- J. R. Gibson, Electrician Foreman
- S. Taylor, Electrician
- R. Rogers, Computer Services Supervisor
- L. M. Stinson, Modification Supervisor
- R. G. Berryhill, System Performance and Planning Superintendent
- J. Hudspeth, Document Control Supervisor
- J. Luckie, Electrician
- R. Cobb, Document Control
- *P. W. Trotter, Systems Engineer
- R. Morrow, Planner
- D. Sherer, Planner
- H. R. Garland, Mechanical Supervisor
- T. W. Cherry, I&C Supervisor
- *B. W. VanLandingham, Unit 2 Supervisor
- L. Enfinger, Materials Supervisor
- R. Johnson, Systems Engineer

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

NRC Resident Inspector

W. Bradford, Senior Resident Inspector

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on March 22, 1985, with those persons indicated in paragraph 1 above. The inspectors described the areas inspected and discussed in detail the inspection findings listed below. The licensee had dissenting comments which are discussed in paragraph 8.c.

Violation 348/85-17-02, Failure to Follow Procedure FNP-AP-0-52 on Maintenance Work Request No. 107514 - paragraph 8.c.

Inspector Followup Item 348, 364/85-17-01, Training Licensed Operators on Interpretation of Printout Data - paragraph 5.

Inspector Followup Item 348, 364/85-17-03, Review of Vendor Manuals (DS-416 Breakers) To Determine Applicability to the As-Installed DS-416 Breakers - paragraph 7.

Inspector Followup Item 348, 364/85-17-04, Review of Vendor Manual No. U212498 and Revision Notices to Ensure Incorporation of Approved Revisions - paragraph 7.

Inspector Followup Item 348, 364/85-17-05, Evaluate and Revise Procedure MP-28.114 to Include all Vendor Recommended Measurements and Include Measuring Equipment List in the Procedure - paragraph 8.

The licensee did not identify as proprietary any of the material provided to or reviewed by the inspectors during this inspection.

3. Licensee Action on Previous Enforcement Matters

This subject was not addressed in the inspection.

4. Background

In February 1983, the Salem Nuclear Power Station experienced two failures of the reactor trip system upon the receipt of trip signals. These failures were attributed to Westinghouse - Type DB-50 reactor trip system (RTS) circuit breakers. The failures at Salem on February 22 and 25, 1983, were believed to have been caused by a binding action within the undervoltage trip attachment (UVTA) located inside the breaker cubicle. Due to problems of the circuit breakers at Salem and at other plants, NRC issued Generic Letter 83-28, Required Action Based on Generic Implementations of Salem ATWS Events, dated July 8, 1983. This letter required the licensees to respond on immediate-term actions to ensure reliability of the RTS. Actions to be performed included development of programs to provide for post-trip review, classification of equipment, vendor interface, post-maintenance testing, and RTS reliability improvements. The licensee responded to Generic Letter 83-28 by correspondence with the following dates: September 6 and November 4, 1983; and February 6, February 15, and June 25, 1984. This inspection was performed to review Alabama Power Company (APCOs) current program, planned program improvements, and implementation of present procedures associated with post trip review equipment classification, vendor interface, post maintenance testing, and reactor trip system reliability for the Joseph M. Farley Nuclear Plant - Units 1 and 2.

5. Post-Trip Review

The licensee was requested in GL 83-28 to describe their program procedures and data collection capability to assure that the causes for unscheduled reactor shutdowns, as well as the response of safety-related equipment, are fully understood prior to plant restart. The licensee's response to GL 83-28 gives a detailed description of the program and procedures pertinent to performing post-trip reviews. The inspector reviewed their response, appropriate procedures, and interviewed responsible licensee personnel to assess the adequacy of the licensee's program for post-trip reviews. The result of this inspection are identified below:

The licensee has prepared and revised several procedures to more clearly define responsibilities, authorities, methods of assessment, training, and equipment needed to perform a timely technical post-trip review.

Administrative Procedure FNP-0-AP-16, Revision 13, "Conduct of Operations - Operations Group," provides a clear and concise description of the actions to be taken by the shift supervisor subsequent to a reactor trip. These actions include:

- a. Ensure that the plant is placed in a safe condition (Reactor Trip Procedure FNP-1-EOP-5.0)
- b. Notify the Emergency Director
- c. Make other off-site notifications as required
- d. Direct a review of plant conditions prior to, during, and subsequent to the trip to determine the cause and to verify proper operation of all systems

Administrative Procedure FNP-0-AP-30, Preparation and Processing of Incident Reports, Plant Event Reports and Licensee Event Reports, specifies the requirements for the preparation and processing of reports. A Reactor Trip Report and Incident Report must be completed upon a reactor trip and the Emergency Director must give permission prior to returning the reactor to a critical state. If the review and analysis by the Shift Supervisor does not positively determine the cause of the transient or verify proper operation and response of the reactor and associated equipment systems, it will be the responsibility of the on-call Emergency Director to determine the need for, and the appropriate individuals or group for, independent assessment of the trip.

The completed Reactor Trip Report must be accompanied by the computer post-trip printout, the alarm typewriter printout, the sequence of events, and incident report. This package is prepared by the shift supervisor, reviewed by the Operations Supervisor, Unit Supervisor and Technical Group Supervisor, and finally reviewed within 30 days by the Systems Performance Supervisor.

The plan for return to power includes (a) any corrective action required to correct the cause of the trip, (b) any maintenance required and (c) any surveillances required to change modes. Other plant procedures associated with post-trip review were examined and are listed below:

FNP-1-EOP-5.0	Reactor Trip
FNP-1-EOP-15.0	Anticipated Transients Without Trip (ATWT)
FNP-0-AP-3	Plant Organization and Responsibility
FNP-0-AP-45	FNP Training Plan

Plant personnel involved with the preparation or review of post trip review documentation receive initial and refresher training in post-trip review procedures through a formal program for licensed operators. FNP-0-AP-16 delineates the qualifications and training required for personnel participating in the post-trip review process. Specific duties of key individuals are identified in FNP-0-AP-3 and FNP-0-AP-16.

Discussions with the training department indicated that formalized training has been conducted for the engineering staff in the systems performance group on the interpretation of information available from the sequence of events and post-trip printouts. Further discussions revealed that the above formal training was not being given to the licensed operators. Until formal training on the interpretation of information available from the Sequence of Events and Post-Trip printouts is incorporated into licensed operator training, this will be considered an Inspector Followup Item 348, 364/85-17-01, Training on Interpretation of Printout Data.

A review of training records revealed that records of initial and requalification training were being maintained.

The sources of plant information necessary to conduct a review and analysis of a transient causing an unscheduled reactor trip include:

- a. The plant computer alarm typewriter printout,
- b. The plant computer sequence of event report,
- c. The post-trip report,
- d. The main control board recorders,
- e. An interview of on-duty plant operators,
- f. The plant operator's log,
- g. The listing of any outstanding limiting condition of operation, and
- h. The listing of any major maintenance currently in progress.

In the event that the plant computer alarms typewriter (sequence of events recorder) is out of service, the computer will automatically dump its information to the following printers in descending order of preference:

- a. Trend typewriter
- b. Line printer
- c. Auxiliary typewriter

The licensee stated that the capability to gather and analyze post-trip data and gain more precise time separation between distinct occurrences will be enhanced with the installation of the safety parameter display system, which is expected to be installed in mid-1986.

The post-trip review package, after completion of review by the system performance group, is forwarded to document control for permanent retention within 30 days of the trip. Additionally, a licensee event report (LER) is generated for each reactor trip. The inspector reviewed 11 post-trip review packages to verify thoroughness of preparation and proper preservation of physical evidence needed to perform post-trip reviews. While it was found that all necessary data were preserved, it was noted that the record keeping was a bit fragmented and difficult to track down. A given incident is presently filed in the Quality Control (QC) vault by two different methods, (a) by the incident report number and (b) by the reactor-trip number. [The supporting evidence is sometimes filed with (a) and other times with (b). The disadvantage of not using a singular filing method was discussed with the licensee.]

The inspector inquired and found that incident reports, reactor-trip reports, and Licensee Event Reports (LERs) are routed through the training department for possible incorporation into site specific simulator training for new or requalified licensed operators. The classic ATWS incidents are also simulated for training purposes.

Within the areas examined, no violations or deviations were identified.

6. Equipment Classification

The inspector reviewed the licensee's response which described their program for equipment classification. Their response described the following:

The program for identifying safety-related systems and components at Farley is contained within plant procedures, design procedures, the Operations Quality Assurance Policy Manual, and Section 17.3 of the APCO Final Safety Analysis Report (FSAR). The systems utilized by the licensee to identify safety-related components consists of the Q-list, safety-related classification numbering, design documents, and prior procurement packages.

The inspector conducted a review of appropriate licensee procedures and records and interviewed responsible licensee personnel to confirm that the licensee's program for equipment classification was adequate and consistent with their response to Generic Letter 83-28. The inspector confirmed that the licensee's program for equipment classification included the following elements:

Plant and component controls for classification of structures, systems, and components as safety-related were being implemented.

The licensee has developed a program to assure that safety-related or non-safety-related maintenance activities are identified during the planning stage.

The Q-Listing is reviewed by design personnel during the modification process to determine if the modification affects safety-related structures, systems or components.

Personnel participating in activities impacting safety-related structures, systems, and components were aware of the appropriate level of QA controls.

Written directives assigned principal responsibility for satisfactory completion of procurement, maintenance, and modification activities associated with safety-related structures, systems, and components.

Repairs, maintenance, or modifications to equipment to correct failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances were performed, documented, and reviewed to determine reliability of replacement components.

The inspector examined the following procedures and documents:

Administrative Procedure FNP-0-AP-52, Equipment Status Control and Maintenance Authorization

Administrative Procedure FNP-0-AP-8, Design Modification Control

Administrative Procedure FNP-0-AP-9, Procurement and Procurement Document Control

Q-List, Section 17.3 of FSAR

Maintenance Work Requests Nos. 101440, 101441, 101442, 101443, 35789, 37166, 24040, 19393, and 88454

Purchase Order Nos. 13627 and 35957

Plant Change Notice PCN-B-83-2410

Maintenance Procedure FNP-0-MP-28.114, Inspection, Maintenance and Testing of Reactor-Trip Breakers

The information systems utilized at Farley Plant to identify safety-related components are identified as follows:

Safety-related Q-List contained in Section 17.3 of the FSAR

Total Plant Numbering System Safety-Related Classification Numbering

Prior Procurement Packages

Design Documents

The FNP Q-List identifies safety-related systems, major components, supports, and structures. The Q-List also identifies categories of safety-related components which are not explicitly identified within the Q-List. Changes and additions to the Q-List are initiated by design changes to the plant. The Q-List is controlled and updated as part of the FSAR. The Q-List is considered by the inspector to be very general in detail. The licensee acknowledged the inspector's observations and stated that management was considering development of a more detailed Q-List.

The Total Plant Numbering System (TPNS) is another method used by the licensee for identifying safety-related or nonsafety-related components. The TPNS classification numbering is assigned by the licensee's design organizations as part of the design process. The TPNS numbers consist of a "Q" or "N" prefix followed by a unit designator (i.e., Unit 1 or 2), a three-character code for identifying the system, and additional characters which identify the component type and unique component identification. The TPNS numbers for safety-related components are identified with a "Q" prefix and nonsafety-related components are identified with a "N" prefix. The TPNS classification numbering is given in design documents such as the electrical equipment index, instrument index, design drawings, and equipment specifications.

Discussions with the licensee revealed that the reactor-trip breakers do not have unique TPNS numbers. The TPNS numbers are assigned to each train of the reactor trip switchgear. In addition, the TPNS numbers assigned to the reactor trip switch and full length rod motion control switch have non-safety TPNS numbers. The inspector asked the licensee if these nonsafety TPNS numbers would be upgraded to safety-related. The licensee indicated that there were no plans to revise the TPNS numbers for these components at this time.

The licensee's Administrative Procedure FNP-0-AP-52 is the procedure used for identifying, controlling, scheduling, authorizing and documenting maintenance. This procedure requires the TPNS number and equipment name be identified on the Maintenance Work Request (MWR) Form. The TPNS number is used by the licensee on the MWR form to identify safety-related or nonsafety-related equipment. The TPNS number is the only safety classification given on the MWR form. The reviews and approvals required for safety-related and nonsafety-related maintenance work requests are basically the same. However, one distinguishing difference exists on the handling of MWRs for safety-related equipment that cannot be functionally tested following completion of work due to plant conditions. The procedure also identifies critical plant systems and the special pre and post-maintenance requirements.

The inspector selected MWRs 101440, 101441, 101442 and 101443 which described work to be done on the Undervoltage Trip Attachment (UVTA). These MWRs were examined to verify that the maintenance activities were performed and documented in accordance with procedure FNP-0-AP-52. The above MWRs were issued to replace the UVTAs on the reactor trip breakers for Unit 2. Replacement of the UVTAs eliminated the requirement to cool the UVTAs with compressed N₂ during performance of surveillance procedures STP-33.2A and B to lower the resistance of the coil so that breaker closing could be accomplished. All records were found to be documented and approved in accordance with the above procedure.

Administrative Procedure FNP-0-AP-9 is the procedure used by the licensee to administratively control the procurement of assemblies, parts, material, supplies, and services. This procedure applies to both safety-related and nonsafety-related procurement of components and services. The procedure provides criteria to determine the QA review codes and the safety classification for assemblies, parts and services. The procedure identifies the following QA code classes:

- Code A, Safety-Related or Nonsafety-Related
- Code C, Nonsafety-Related
- Code D, Nonsafety-Related

The procedure references the Q-List, Westinghouse NSSS Spare Parts Report, and ANSI N18.2-1973 as documents to use in making the QA Code determinations and safety classifications. In addition, the procedure gives description of categories of assemblies, sub-assemblies and parts that are considered safety-related and QA Code A. Likewise, the procedure provides descriptions of the components that are considered QA Codes Class C and D. The procedure also provides controls for the review, approval, revision and storage of procurement documentation. The inspector reviewed the records associated with purchase order Nos. 13627 and 35957 to verify compliance with the above procedure. Records examined were documented, reviewed and approved in accordance with procedures.

Within the areas examined, no violations or deviations were identified.

7. Vendor Interface and Manual Control

The inspector reviewed the licensee's response which described their program for vendor interface and control of vendor technical information. Their response described the following program:

Licensee response dated February 15, 1984, stated that the majority of the NSSS components were originally supplied by Westinghouse (W) and that current updates were supplied by W Technical Bulletins. The licensee acknowledges receipt of the information by written confirmation. All technical information received from other vendors which has an impact on plant design, maintenance, and safe operation is distributed to appropriate licensee organizations, Bechtel, and Southern Company Services for review and action.

Further licensee responses dated June 25, 1984, stated that APCO is an active member of the Nuclear Utility Task Action Committee (NUTAC) which has formulated the Vendor Equipment Technical Information Program (VETIP). This program utilizes existing utility/vendor contact, the Institute of Nuclear Power Operations (INPO) managed Nuclear Plant Reliability Data System (NPRDS), and Significant Event Evaluation and Information Network (SEE-IN) Program.

The inspector reviewed licensee procedures relative to control of vendor technical information to determine if they were consistent with his responses. Results of examination of procedures and interviews with personnel revealed the following:

- a. The licensee had not contacted every vendor of safety-related equipment to determine if the vendor technical manuals on site contained the latest technical information, but was using information from the INPO administered NPRDs and SEE-IN Programs. Westinghouse was contacted and the licensee held extensive meetings concerning NSSS equipment. The licensee had also contacted Colt Industries and General Electric Company (GE) concerning equipment supplied by them. The licensee had developed some procedures to ensure adequate review of technical information received, and the control and use of this information by plant personnel.
- b. The licensee had developed Administrative Procedure FNP-0-AP-65, FNP Operating Experience Evaluation Program. The objective of this program was to ensure that lessons learned from industry were used at FNP and that lessons learned at FNP were transmitted to other licensees. Formal vendor information programs have been established with W, GE and Colt Industries. The licensee has a special group (NETS) that receives technical information and transmits this information to the System Performance Group for action. Other groups have been assigned responsibilities for reporting, reviewing, and utilizing technical information from such as W Owners Group, INPO, NRC, and vendors.
- c. FNP-0-AP-65, Revision 3 dated February 7, 1985, assigns plant staff responsibilities for assuring that vendor technical information is properly evaluated and handled. This procedure also lists applicable plant procedures which control and further describe the responsibilities for receiving, distribution, transmittal, and use of vendor technical information originating from vendors, INPO, other industry sources, W Owners Groups, and FNP sources. Paragraph 16 of the procedure assigns the QC Supervisor the responsibility of performing a program effectiveness review on an annual basis. The inspector questioned why some technical manuals had not been reviewed per AP-65. Discussions revealed that vendor manual review verification was only being performed on new technical manuals and revisions to old manuals. Based on review of this procedure, the licensee appears to have

provided a means to effectively evaluate and control current vendor technical information; however, the massive amount of old vendor manuals, bulletins, etc., may present problems if not reviewed and deemed applicable to installed equipment.

- d. Administrative Procedure FNP-0-AP-4, Control of Plant Documents and Records, Revision 8, was presently undergoing review by the plant staff. This procedure establishes controls to assure satisfactory receipt, processing, distribution, storage, and retention of documents including vendor manuals and other correspondence related to vendor technical information. The procedure review request form from AP-1 and the 10 CFR 50.59 evaluation for AP-4 were reviewed and found to be satisfactory. AP-4 and AP-65 appear to ensure control of documents and records. The inspectors examined selected technical manuals, plant procedures, the control and use of these manuals, and procedures to determine if the controls were adequate and being implemented. Two Inspector Followup Items were identified and are discussed in the following details.
- e. Examination of Technical Manuals (Instruction Books) Associated with the Low Voltage Switchgear (Type DS-416 Breakers) revealed the following:
 - (1) The same manuals are filed under different "U" numbers thereby making it difficult to determine which manuals are valid, up-to-date, and applicable to the installed equipment.
 - (2) Measurements to be taken during maintenance and testing of the breakers are not consistent in each instruction book (IB). An example is that the measurement of the gap between the stationary arcing contacts is not required in IB U260232A and IB U215471A but is required in IB U185040.
 - (3) Two different Architect Engineers have reviewed and approved the switchgear IBs without documented interfacing.
 - (4) It is not apparent that the switchgear IBs (older IBs) have been reviewed per AP-65. The licensee's statement that the plant procedures reflect the current IB technical information was not attached to the IBs. Note: AP-65 only requires new IBs or revisions to old IBs be reviewed.
 - (5) Instruction Books did not contain a chronological list of revisions or applicable changes implemented; therefore, a component history file was not readily available.

The licensee agreed to review the current instruction books being used to determine if the IBs reflect the as installed DS-416 breakers. This is considered Inspector Followup Item 50-348/364-85-17-03, Review of Vendor Manuals of DS-416 Breakers.

- f. Other technical manuals (Instruction Books), vendor correspondence, A/E correspondence, and review approval forms were reviewed in the Central File Area are listed below:

IB No. U185040, controlled copy No. 40

IB No. U276623 Volume 3, Book 4, W Instruments and Southern Company Services Letter dated January 31, 1985

IB No. U184699, Plant Lighting Switchgear, Controlled Copy No. 2

IB No. U184789 and 260098, Indoor Low Voltage Metal Enclosed Switchgear

IB No. U185031, Switchgear Renewal Parts Data, Controlled Copy No. 003. This manual had been updated by a supplement dated July 1981

Technical Data Transmittal Sheets from Bechtel and Southern Company Services concerning incorporation of Plant Change Notices (PCNs) and Plant Change Requests (PCRs) into technical manuals

Vendor Manual/Drawing Review forms confirming plant departments review of manual Nos. U162880, 162888, 176697, 184852, 198768, and U214177

The Central File also maintains a computer list of who has checked out a controlled manual and if the user has returned the copy within the 14-day requirement. Document transmittal form (AP-4, App. B) is used to transmit documents and record receipts of documents. To further assure manual control, the Document Control Supervisor issued a letter dated March 20, 1985, to all supervisors requesting them to review and verify that the manuals in their possession agree with the current transmittal form. Central Files keeps a file card (pink card) on each manual and keeps updated with the latest revision number and date received. Central Files personnel were knowledgeable of procedures, retrieved documents in a timely manner, and demonstrated the application of the document control program.

- g. The inspector examined the documentation packet which contained information on the Hydrogen Inner-Cooled Turbine Generator, W Instruction Book (IB) 20891, U No. 212498. Although this is a nonsafety-related component, this examination was made to determine if a typical document packet contained the latest information such as revisions, approval forms, change notices, and vendor correspondence. Results of examination revealed that the document packet contained instruction books, three revision sheets, insert instructions, a list of PCNs affecting the instruction book, status of PCNs (approved or completed), review forms signed by Bechtel and Southern Company Services, and vendor a letter notifying licensee of a manual change. Further examinations included a detailed check of the IB contents against the approved revision changes to determine if the approved

changes were being incorporated into the IBs. This review revealed that Revision 2 of the Hydrogen Wiring Diagram, No. 1124J51 Figure 1A, had been inserted into the IB without technical justification for deleting Revision 1 and inserting Revision 2. The licensee agreed to review the subject IBs and plant procedures associated with the Hydrogen System to assure that technical data has been incorporated. This is Inspector Followup Item 50-348, 364/85-17-04, Review of Manual No. U212498 and Revisions.

Within the areas examined, no violations or deviations were identified.

8. Post-Maintenance Testing

The inspector reviewed the licensee's post-maintenance testing procedures and activities to verify that the commitments in the licensee's response to Generic Letter 83-28 were being implemented at Farley Nuclear Plant. The inspector examined procedures and completed maintenance records, participated in a complete maintenance and test of a DS-206 Westinghouse circuit breaker, and interviewed pertinent licensee personnel to determine the adequacy of the licensee's post-maintenance test program. The results of the inspection are as follows:

a. Demonstration

Maintenance Procedure FNP-0-MP-28.114 was used to demonstrate a complete (walk-through) maintenance and test on a DS-206, 800A frame circuit breaker. This type of Westinghouse breaker is similar to the DS-416, 1600 A frame breaker used in the reactor trip protection system. The main differences were the DS-206 breaker used in the demonstration did not have an undervoltage trip attachment and an operations counter.

In the course of the inspection of the breaker contact system, as delineated in paragraph 4.8.1 of MP-28.114, the inspector noted that the licensee's test engineer did not physically perform a measurement of the gap "dimension A" as specified in paragraph 4.8.1 of the procedure which stated that the gap must exceed 0.020 inches. The test engineer visually observed the gap dimension and determined that the gap exceeded 0.020 inches and recorded it. The inspector questioned the method of measuring and was advised that the gap in question was so obviously over 20 mil that an actual measurement was unnecessary. The inspector requested that an appropriate gauge be used to confirm the dimension; however, a suitable feeler gauge could not be located until the next day. Subsequent measurements by feeler gauges of six gaps revealed readings of 0.080, 0.071, 0.071, 0.049, 0.033, and 0.025 inches. It was noted by the inspector that the 0.033 and 0.025 inch measurements were not obviously over 0.020 inch as gauged by the human eye. The inspector questioned the accuracy of the gap measurements

taken on previously inspected breakers. Review of data and discussions with supervisors revealed that previous gap measurements were performed with a feeler gauge and the gap dimension exceeded 0.020 inch as required. The use of measuring equipment is discussed further in this report.

Also during the demonstration of the maintenance and testing of the DS 206 circuit breaker, the inspector noted the electrician applied the lubricant with his forefinger and smeared it around the levering device arm on the breaker. The licensee was advised that this was poor practice as the lubricant and mechanism becomes contaminated when applied by the fingers. A review of the procedure revealed that the application of lubricant and solvents is left to the technician's judgment which is another poor practice.

Trending of parameters from Maintenance Procedure FNP-0-MP-28.114 was non-existent at the Farley Nuclear Plant. Although GL 83-28 specifically stated in paragraph 4.2 that the licensee's preventative maintenance program shall include trending of parameters measured during testing to forecast degradation of operability, the licensee only trends failures and since at Farley there was no failure to date, no trending had been done. The use and effectiveness of trending parameters (besides failures) were discussed with the licensee and they were advised that their response did not adequately address trending; however, the resolution of their response would be performance by NRC Nuclear Regulation Branch.

b. Procedure Review

Procedure FNP-0-MP-28.114, Inspection, Maintenance and Testing of Reactor Trip Breakers, Revision 5, was reviewed to determine (1) if the procedure reflected vendor technical manual requirements and (2) if the procedure, if implemented, would help assure reliability of operation. Results of the procedure review revealed the following:

- (1) Reference 2.2 in the procedure has a typographical error as the Field Mounting Instruction should be W Drawing 588C785 instead of 588C784. This appears to be a minor error, but could result in problems if the referenced drawing were used.
- (2) Paragraph 4.3 allows the technician to determine what solvent to use and to determine if the solvent will damage the electrical component. Approved solvent should be specified by engineering.
- (3) Paragraph 4.8, Inspection of Contact System, nor Attachment 4 requires the dimension between the arcing contacts to be measured; however, vendor Instruction Book U No. 185040 specifies that this gap dimension be $0.42 \pm .080$ inches. The vendor's instruction books U260232A and U215471A do not require that the gap measurements be taken.

- (4) Paragraph 4.8.1 does not specify how dimension "A" will be verified that it exceeds 0.020 inches, nor how the 1/32" thickness of the main contacts will be measured. No tools are specified in the text or in the data sheets. The technicians did not have any measuring tools to demonstrate measuring or to confirm that the gap dimension exceeded 0.020 inches.
- (5) Paragraph 4.9.3.1 does not specify how the 0.030 inch dimension is measured or what type of instrument is needed. Also the statement "the gap should be 0.030 minimum" should be similar to the statement in paragraph 4.8.1, "Dimension A must exceed 0.020 inches." These statements could result in misinterpretation by the procedure users.
- (6) Paragraph 4.19 specifies the type of lubricant to be used and some precautions; however, no caution is made concerning the contamination of lubricant if applied by fingers.
- (7) Some special tools (bent wire gages) are used but are not specified in the procedure. The above items were discussed with licensee personnel. Justification for not specifying measuring tools and how to measure the required dimensions was presented to the inspectors; however, the licensee agreed to re-evaluate the procedure in regard to the inspector's concerns and to revise the procedure as necessary. Until the procedure is reevaluated, this is Inspector Followup Item 50-348, 364/85-17-05, Evaluate and Revise Procedure FNP-0-MP-28.114.

Other procedures reviewed are listed below:

Administrative Procedure FNP-0-AP-1, Development, Review and Approval of Plant Procedures, Revision 16.

Administrative Procedures FNP-0-AP-65, FNP Operating Experience Evaluation Program, Revision 3.

Surveillance Test Procedure FNP-1-STP-640, Containment Spray Pump Discharge Check Valve (Q1E13V002A and B) Full Stroke Test, Revision 1.

Maintenance Procedure FNP-1MP-49.0, Inspection and Repair of Accumulation Discharge Check Valve Q1E21V032A, B or C, Revision B.

Instrument Maintenance Procedure FNP-0-IMP-438.3, Valve Actuator and I/P Calibration (Generic), Revision 0.

Instrument Maintenance Procedure FNP-0-MP-206.9, RHR Bypass Flow control Q2E11FT0605A, Revision 4.

c. Review of Maintenance Work Request (MWR)

The inspectors examined several safety-related MWRs and associated procedures to determine procedure adequacy and implementation. One violation and several concerns associated with the processing and implementation of MWRs were identified and are discussed below:

- (1) MWR 62891 - Repair of Check Valve - dated 1/21/83
 - (a) Check Valve Inspected TPNS Number was not entered on both pages 1 and 2 of the completion sheets. The licensee explained this as an oversight and that the number would be entered on both pages.
 - (b) On page 1 of the completion sheet, a signature was used to sign off the line on the valve body cleaning. However, the date was left out. The licensee explained this as an oversight and that the importance of dating documents signed would be discussed with plant personnel.
- (2) MWR 83484, Maintenance on Containment Spray Pump Check Valve, dated 1/4/84

No problems were identified with this MWR.

- (3) MWR 107514, Main Feed Regulator Bypass Valve IC, dated 3/13/85
 - (a) Item No. 20, "Clearance for Work," was not checked off as specified in Section 7.5.3 of FNP-0-AP-52. The fact that such clearance information could have been incorporated into Item No. 33 did not apply in this case. It was stated in Item No. 33 that no special plant conditions need be required for the work. Clearance for work was not alluded to in Item No. 33. The licensee explained at the exit meeting that this was an oversight; however, the inspectors feel that Item 33 means operating plant conditions and has no connection with Item 20, clearance for work. The licensee agreed to review the procedure and revise to eliminate misinterpretations.
 - (b) Item No. 23, "Work Sequence," originally referenced the use of Procedure IMP-215.14. Upon review of the data package, the inspector noted that Procedure IMP-438.3, had been used, instead of 215.14, without the MWR being revised and re-approved as required by Section 7.5.16.1 of FNP-0-AP-52. This is considered a violation. The licensee disagreed with this violation and stated that the procedure was only a reference; therefore, the MWR did not have to be revised to indicate the new procedure (IMP-438.3). The licensee also

stated that NRC inspectors were misinterpreting their administrative procedures; however, the licensee committed to revise Procedure FNP-AP-0-52 to clarify how references are to be used when specified on Maintenance Work Requests. The inspectors acknowledged the licensee's comments and agreed that further clarification to the procedure would be appropriate. At the conclusion of the exit, this item was considered an Inspector Followup Item; however, subsequent in-office review and evaluation of this matter concluded that the licensee violated Procedure FNP-AP-0-52, Revision 5.

The licensee was informed of this violation by telecon on April 15, 1985. This is identified as Violation 348/85-17-02, Failure to Follow Procedure FNP-AP-0-52 on Maintenance Work Request No. 107514. In addition to the above, the inspectors had concerns on the adequacy of "adjust as needed" to describe the work sequence as this instruction could lead to personnel errors and mis-adjustment of equipment.

(4) MWR 107679, RHR HX Bypass Flow Control, dated 3/11/85

- (a) One page 2 of the data package, both "Table 1" and "Table 2" are listed on the same page, are directly adjacent to each other thus making page 2 very congested. The licensee stated that Table 2 would be deleted.
- (b) The standard data package consists of nine pages which are normally needed to complete a maintenance test. Since this MWR necessitates a limited amount of work on the equipment, it appeared to warrant the use of a partial data package which consisted of four pages. It was nevertheless noted on the front page that the data package contained nine pages; however, only four pages could be found in the package. The reasons for including all nine pages in the data package and marking the sheets not needed as "NOT APPLICABLE" was discussed with the licensee.

9. Surveillance Testing Of The Diverse Reactor Trip Functions of the Reactor Trip Switchgear (RTS)

The inspector confirmed that the licensee's surveillance procedures require testing of the shunt trip attachment and the licensee verifies the ability to manually trip the RTS breakers by independent use of the undervoltage trip attachment or shunt trip device. The surveillance procedures are identified as follows:

Surveillance Test Procedure, STP-33.2A, Reactor Trip Breaker Train A Operability Test

Surveillance Test Procedure, STP-33.2B, Reactor Trip Breaker Train B Operability Test.

Discussion with the licensee revealed that Plant Change Notices PCN 83-1-1421, PCN 83-2-2410 and PCN 84-2-2589 installed the automatic shunt trip actuation device on the reactor trip systems for Units 1 and 2. The inspector reviewed data package PCN 83-2-2410 for Unit 2. The data package appeared to be adequate.

Within the areas examined, no violations or deviations were identified.