



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

Report No.: 50-413/85-12

Licensee: Duke Power Company
 422 South Church Street
 Charlotte, NC 28242

Docket No.: 50-413

License No.: NPF-35

Facility Name: Catawba 1

Inspection Conducted: March 18-22, 1985

Inspectors: C. Julian 4/25/85
 Date Signed

- C. A. Julian - Team Leader
- F. R. McCoy
- W. K. Poertner
- B. T. Debs
- C. Caldwell
- L. Watson
- R. Pierson

Approved by: A. F. Gibson 4/26/85
 Date Signed
 A. F. Gibson, Branch Chief
 Division of Reactor Safety

SUMMARY

Scope: This routine, announced inspection entailed 269 inspector-hours in the areas of Surveillance Testing, Maintenance Activities, Operational Activities, and Event Review.

Results: No violations or deviations were identified.

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REPORT DETAILS

1. Persons Contacted

Licensee Employees

- *G. Vaughn, General Manager Nuclear Stations, DPC
- *J. W. Hampton, Station Manager
- *C. W. Graves, Jr., Superintendent Operations
- *J. W. Cox, Superintendent Technical Services
- *G. T. Smith, Superintendent Maintenance
- *B. F. Caldwell, Superintendent Station Services
- *T. B. Bright, Engineering Manager, Construction
- *E. M. Couch, Project Manager, Construction
- *C. L. Hartzell, Compliance Engineer
- *D. Tower, Operating Engineer
- *A. S. Bhatnagar, Test Engineer
- *W. H. Barron, Senior Instructor
- *J. H. Knuti, Operations.
- *W. W. McCollough, Mechanical Maintenance
- *W. P. Deal, Station Health Physicist
- *T. D. Mills, Construction Engineering, Electrical
- *T. H. Propst, Construction, Mechanical Technician
- *W. H. Bradley, QA Surveillance Supervisor
- *E. G. Williams, Project QA Technician
- *P. LeRoy, Licensing Engineer
- *D. M. Robinson, Reactor Engineer
- *R. O. Sharpe, Nuclear Engineer
- R. B. Wilson, Planning Engineer
- D. R. Rogers, IAE Engineer
- J. B. Teofilsk, Operations

Other licensee employees contacted included craftsmen, engineers, technicians, operators, mechanics, and office personnel.

NRC Resident Inspectors

- *P. Skinner
- *K. Vandoorn

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

3. Licensee Action on Previous Enforcement Matters

- a. URI (413/84-93-02, 414/84-42-02) Downgrading of License Prep Tests to Quizzes - Closed - Sufficient justification for this downgrading was provided. The licensee has committed to adequate preparation and review of exams prior to them being administered which will preclude this problem in the future.
- b. URI (413/84-93-04, 414/84-42-04) Past Nuclear Equipment Operator Qualification Checklist Deficiencies - Closed - As a result of this inspection finding, the licensee has taken action to revise the conduct of completing task lists to preclude this type of event through management control and review of task training documentation.

4. Unresolved Items*

Three unresolved items were identified during this inspection. These unresolved items concern lack of full adherence to Station Directive (SD) 3.2.2 during conduct of the periodic test program (paragraph 5a), removal of low pressure service water minimum flow interlocks from service without declaration of inoperability (paragraph 5b), and failure to provide for feedback of operating experience for mechanical maintenance technicians (paragraph 6e).

5. Surveillance Testing

a. Identification and Scheduling of Periodic Testing

The inspectors reviewed the administrative control system for identifying and scheduling periodic tests. The objective of this review was to verify that surveillance testing required by Technical Specifications and other periodic testing prescribed by licensee commitments to the NRC were identified, controlled, and met the scheduling requirements of Technical Specifications. The review included verification of administrative control on scheduling surveillance tests required for mode change. The following documents were utilized in the review:

- Administrative Policy Manual for Nuclear Stations, Duke Power Company, Nuclear Production Department, Rev. 21, 10/1/83
- Catawba Nuclear Station Directive 3.2.2 (TS), "Development and Conduct of the Periodic Testing Program," Rev. 8, and proposed revisions to be included in Rev. 9
- Catawba Nuclear Station Directive 3.1.15 (OP), "Activities Affecting Station Operations or Operating Indications," Rev. 7
- Catawba Nuclear Station Directive 2.8.1 (TS), "Reporting Requirement," Rev. 5

*An Unresolved Item is a matter about which more information is required to determine whether it is acceptable or may involve a violation or deviation.

- Catawba Nuclear Station Directive 2.1.7 (TS), "FSAR and Technical Specification Amendment Processing and Interpretation," Rev. 1
- Catawba Nuclear Station Directive 3.0.9 (TS), "Catawba Action List File (CALF)," Rev. 1

The licensee performs periodic test scheduling utilizing a computer data base. Several printouts providing data for different applications are pulled from the data base. On a weekly basis, the Periodic Test Program printout is provided to all groups responsible for periodic testing. This printout identifies all periodic tests to be performed by the responsible group for the subsequent six-week period (or longer) and also provides other pertinent information. The Periodic Test Program covers tests performed on monthly or greater intervals. Tests performed on less than monthly intervals are covered by Section procedures and audited by a surveillance procedure on a monthly basis which is included on the Periodic Test Program tracking system. Printouts of the data base indicating the tests utilized in meeting each Technical Specification surveillance requirement and listing unit conditions/modes affecting tests are also available.

Each section is responsible for scheduling tests under their cognizance within the interval provided by the printout. The interval specified by the program meets the Technical Specification requirements. It was noted that in addition to the Periodic Test Program tracking, several of the other sections had their own tracking mechanisms. These tracking mechanisms were, in most cases, used instead of relying on the Periodic Test Program. It was determined that in several areas, SD 3.2.2 was not utilized, resulting in a failure to follow procedures. Examples include the failure to provide Performance and Compliance with an attachment showing tests were not performed within the time allotted by the program. In addition, tracking mechanisms had been developed by sections to handle specialized areas such as mode changes and surveillances dependent on Effective Full Power Days, that had not been incorporated into the tracking procedures. These are examples of an Unresolved Item (URI 413/85-12-01) pending further review by the licensee and will be examined during a future inspection.

Provisions for monitoring tests which are not performed within the appropriate interval due to plant conditions or inoperable equipment are provided. In some cases, notification of the appropriate individual was being handled under the provisions of other Station Directives instead of those specified by SD 3.2.2. This represents another example where the licensee is not fully implementing the requirement of SD 3.2.2. The licensee has stated that SD 3.2.2 will receive a cross disciplinary review to assure that the procedure reflects the appropriate tracking mechanisms.

It was further noted by the inspectors that SD 3.2.2 only addressed the notification of Performance and Compliance when a test could not be performed within the required time interval. The procedure did not state that the Shift Supervisor had to be immediately notified if the test was not performed within the required interval. The licensee

stated that SD 3.2.2 would be revised to require notification of the Shift Supervisor when a test is not completed within the allowed TS interval. It should be noted that the licensee stated that failure to meet a surveillance requirement would be under the provisions of SD 3.1.8.

The inspectors reviewed Station Directives 2.1.7, 2.8.1 and 3.0.9, which described the methods used to assure that new surveillance requirements are identified and responsibility for the surveillances assigned. The inspectors discussed the implementation of these documents with the licensee. No violations and deviations were identified.

b. Performance of Surveillance Testing

The inspectors reviewed selected procedures to assure that the procedures had been performed within the required Technical Specifications interval. The inspectors reviewed documentation on tests which were not performed within the computer program intervals. The tests were either delayed due to equipment inoperability or plant conditions or were not required on the computer program interval due to mode changes. No violations or deviations were identified.

The inspectors reviewed selected surveillance procedures assigned to the Operations Section, Chemistry Section and Instrumentation and Electrical Section to assure that procedures correctly addressed all Technical Specification requirements. Emphasis was placed on those surveillances requiring performance at a quarterly, monthly, weekly, daily, or twelve hour frequency. Consistent with the extent of the review performed, it appears that Technical Specification surveillance requirements are adequately delineated within plant procedures.

In one case, the procedure addressing the adjustment of level in the cold leg accumulator, Operating Procedure OP/1/A6200/09, did not include a precaution to assure that an accumulator boron sample was analyzed within six hours as required by Technical Specification 4.5.1.1.1.b. The chemistry scheduling procedure did, however, address the six hour requirement. Review of the completed procedure indicated that the boron analysis was completed within the appropriate time frame. The licensee has agreed to include this precaution in the procedure. No other discrepancies were noted.

The inspector reviewed selected data packages for completed surveillance inspections and confirmed, in general, that the licensee had satisfactorily completed the surveillances as required within the requisite time interval. One concern was noted with the quarterly operational check performed on February 18, 1985, for the train "B" low pressure service water minimum flow interlock. This feature halts radioactive liquid effluent releases when insufficient flow exists for dilution. The inspectors noted an apparent calculation error which gave indication that the instrument was properly adjusted when, in fact, the instrument was set in a less conservative manner than that

required. As a result of other work performed by the technician on this instrument during the course of the operational check, an E-Max Optical Isolator was replaced. Improvements in current output as a result of this component replacement gave indication that the interlock may have fortuitously been within specification following replacement. A subsequent operational check was not performed following component replacement and consequently this has not been confirmed. During discussions with Operations personnel to determine if radioactive effluent discharges had been completed which would have relied on this interlock being properly set, it was noted that since February 15, 1985, as a result of change 6 to procedure OP/O/B/6500/14, the low pressure service water minimum flow interlocks had been by-passed (set points adjusted to 0) during radioactive effluent discharges since the instruments were considered unreliable. When questioned, Operations personnel replied that the instruments had not been declared inoperable. The inspectors consider that the instruments should have been declared inoperable when it was determined that they would not be used due to unreliability. Since that time, discharges have been accomplished under manual control with flow rates calculated every four hours as allowed in Technical Specifications. However, Technical Specifications state that this method of discharge may continue for only 30 days. The licensee stated that actions are currently underway to replace this flow control system with an improved design. The inspectors consider this item to be unresolved pending review of additional information. The resident inspectors will follow up on this item (URI-413/85-12-02).

The inspectors reviewed the methods used to ensure that required surveillances under Operations section cognizance are accomplished prior to making a mode change. The startup procedure and shutdown procedure are the documents which govern entry into each of the modes. These procedures require each section to verify that all surveillances under their cognizance which are required to be complete for entry into the applicable mode have been completed. In the case of surveillances under Operations section cognizance, this verification is based on completion of three items each of which must be documented.

- (1) All surveillances are current for the existing mode
- (2) The applicable premode performance test procedure which lists additional control room surveillances required to make a given mode transition has been completed. There is a separate procedure issued for each mode and each procedure is sectionalized with respect to existing mode.
- (3) All surveillances required for the mode to be entered are indicated as current on the operations performance test computer printout. This printout lists all surveillance test procedures, the applicable modes for each procedure, the frequency required by Technical Specifications, the last date that the procedure was performed, and the next scheduled performance data.

The method for ensuring required surveillances are completed prior to a mode change appears to be adequate for surveillances under Operations section cognizance.

The inspectors reviewed the method in which the operating staff is aware of surveillance testing in progress. Each surveillance test must be authorized for performance by the Shift Supervisor. Prior to authorizing the test, the Shift Supervisor will have it logged in the Surveillance Test Log. Completion or termination of each test will also be noted thus constituting a logging out of each test that is not in progress. Consequently, this log constitutes a listing of all active surveillances in progress.

6. Maintenance Activities

- a. An evaluation of maintenance practices was conducted. Included in this evaluation was a review of the following:

- Work Requests
- Maintenance Procedures
- Removal and Restoration of Equipment
- Training
- Shift Coverage/Turnover

The following procedures and directives were reviewed in conjunction with this evaluation.

Catawba Nuclear Station Maintenance Manual Procedures:

- #1.0 Work Request Preparation
- #1.2 Instrumentation and Electrical Procedure Development

Catawba Nuclear Station Directives

- CNSD 4.2.2 Independent Verification Requirements
- CNSD 3.1.15 Activities Affecting Station Operations or Operating Indications

Station Procedures

- MP/O/A7600/06; Kerotest 1/2, 3/4, 1 inch "Y" Type Globe Valve Corrective Maintenance
- MP/O/A/7650/02; Lubrication of Safety Related Equipment
- MP/O/A/2001/01; Troubleshooting and Corrective Maintenance
- IP/O/A/3890/01; Controlling Procedure for Troubleshooting and Corrective Maintenance

b. Work Requests

The work request system was examined. The current work request backlog is approximately 3000 items total. Of these, the majority are Priority 3 and 4 Work Requests. In most of these instances, the work requests are in progress or are on hold awaiting parts or outside assistance. To date, only four priority 1 work requests have been issued.

Catawba Nuclear Station Maintenance Manual Procedure Number 1.0, Work Request Preparation, was reviewed. This procedure is in the process of being rewritten. The inspector's concern that failure analysis is not adequately addressed is being corrected in the rewritten procedure. The draft Revision of M.M.P. 1.0 stated that corrective maintenance work requests (equipment failure, repair, etc.) shall be reviewed for generic failure implications. This includes equipment misapplication, maintenance or operational errors, equipment or design deficiency and/or other failures that could affect other similar equipment, components and systems.

ALARA planning is incorporated into work requests through utilization of a Health Physics (HP) technician assigned to the maintenance planning staff. This individual reviews the planned work and is responsible for ensuring that adequate radiation protection measures are implemented. This HP technician is also responsible for assigning the Radiation Work Permit Number, if applicable, to the Work Request.

No violations or deviations were noted.

c. Procedures

Use of procedures within Maintenance was reviewed. In both the Mechanical group and I&E group, utilization of "skill of the trade" techniques in lieu of procedures are used frequently, especially by I&E technicians due to the nature of the instrumentation work. Mechanical maintenance use of general troubleshooting procedures is limited and infrequent. IP/O/A/3890/01, Controlling Procedure for Troubleshooting and Corrective Maintenance, is used for I&E safety-related equipment when the exact cause of malfunction is undetermined and a detailed procedure to perform this determination is not practical. The licensee stated that this procedure is currently being revised to incorporate more specific guidance and signature requirements. This revision was not reviewed by the inspector.

Independent verification, as it pertains to maintenance activities, was examined. Independent verification steps are incorporated as needed within maintenance procedures per the guidelines of NRC Directive 4.2.2, Independent Verification Requirements. Typically, these are steps which do not require Quality Assurance verification but are of a safety-related nature.

To the extent of this review, the use of procedures was adequate. Procedures were detailed enough to perform their specified tasks and the intent of procedural compliance was not being circumvented through the use of general or non-specific procedures providing only rudimentary guidance.

No violations or deviations were noted.

d. Removal and Restoration of Equipment

Catawba Nuclear Station Directive 3.1.15 provides guidance for removal of an instrument or component from service and its subsequent return to service. Removal and restoration procedures include a checklist which must be completed by control room operational personnel prior to releasing the equipment for maintenance. This list also addresses Technical Specifications applicability prior to removal and subsequent to return to service. In addition, Technical Specification items which are removed from service are noted in the Technical Specification Action Item List (TSAIL). Maintenance and operational personnel appeared knowledgeable about these requirements. No violations or deviations were noted.

e. Training

The licensee is in the process of creating a system designated as the Employee Training Qualification System (ETQS). This system will amplify and document the present training system. The ETQS will provide a formalized framework such that each supervisor will know which equipment his employees are familiar with as well as providing guidelines and qualification criteria for certification on a particular component or equipment item. The present system in use does not formally utilize a tracking system such that supervisory personnel can use documented evidence in assigning technicians to particular tasks.

Typically, maintenance personnel complete a formal training course conducted at the corporate Technical Training Center. This program includes an introductory phase of 4-6 weeks and subsequent Fundamental Mechanical Maintenance phase or Basic Instrumentation and Electrical Maintenance phase, depending upon the technician's area of expertise, of 18-22 weeks duration. Upon completion of this program, the technician is assigned to a maintenance group. After a period of development when the individual is closely supervised, the technician is given greater responsibility and integrated into his assigned section.

At present, supervisors utilize an informal method to gauge the individuals knowledge and expertise. Tasks are assigned by the supervisor based on his personal knowledge of a particular technician's ability or professional development needs. Upon implementation of the ETQS, a formal mechanism will exist which will document which technicians are qualified to do what as well as providing a guideline to allow a newly assigned technician to become integrated within his assigned section as rapidly as possible.

In accordance with TMI Action Plan Item I.C.5, Procedures for Feedback of Operating Experience to Plant Staff (NUREG-0737), each applicant for an operating license should prepare procedures to assure that operating information pertinent to plant safety originating both within and outside the utility organization is continually supplied to operators

and other personnel and is incorporated into training and retraining programs. These procedures should provide a means through which information from operating experiences can be readily related to the job functions of the recipients including maintenance personnel. The licensee has in place an organization, the Operating Safety Evaluation Program, which identifies, evaluates, and resolves for licensee nuclear stations the nuclear safety concerns through operating experience. This is coordinated through shared responsibilities of the licensee's general office and station. The specific delineation of responsibilities is discussed in the licensee's Administrative Policy Manual for Nuclear Stations, Section 4-9, Operational Safety Evaluation Program (OSEP). Section 4.9.6.1, Station Activities, states in part that a principle function of the OSEP to be performed at each station is the distribution of operating experience information to plant personnel in a timely and controlled manner.

Maintenance compliance with these directives was examined. Operating experience information can be provided through a variety of mechanisms but is most typically submitted to Mechanical Maintenance, Instrumentation and Electrical and Planning Groups through the Catawba License and Compliance Group or the Catawba Safety Review Group. The Instrumentation and Electrical Group has established an I&E Routing System which formalizes and documents the transmittal of this information to the technicians. This is accomplished by initialing a required reading list or attending a presentation with attendance taken and documented. Formal mechanisms for assuring that personnel have been presented the required information is lacking within the Mechanical Maintenance and Planning Group. In these groups the individual in charge receives the operating experience information but there is no formal mechanism in place to ensure that all individual technicians are adequately informed.

Although there is no evidence that the informal training which is occurring within these groups is inadequate, a formal training program, which ensures that pertinent operating experience information has been adequately promulgated and documented with records that can be retrieved and evaluated, is needed. Having been recently licensed, Catawba has no TMI NRC order and the inspector could not identify a clear regulatory requirement to implement TMI item I.C.5. This is left as an Unresolved Item (URI 413/85-12-03).

f. Shift Coverage/Turnover

Mechanical Maintenance and Instrumentation and Electrical groups are currently working rotating shifts in conjunction with operations personnel. The Planning group does not routinely provide 24 hour/7 day coverage although back shift support is provided if dictated by work requirements. Mechanical Maintenance and Instrumentation and Electrical sections each have a daily meeting in the morning to provide for turnover to the day section. In the evenings, no formal turnover occurs but section supervisors discuss work in progress. Neither group utilizes a turnover checklist or turnover procedure.

No violations or deviations were noted.

7. Operational Activities

a. Conduct of Operations

The inspector reviewed the following procedures:

- Operation Management Procedure (OMP) 2-1- Audit of Safety Tags and Tagout (R&R).
- OMP 2-3 - Operations Work Requests.
- OMP 2-5 - Operations Work List and Technical Memorandums.
- OMP 2-14 - Temporary Modifications.
- OMP 2-16 - Control Room Conduct.
- OMP 2-17 - Control Room and Unit Supervisor Logbooks.
- OMP 2-18 Tagout/Removal and Restoration (R&R) Procedure.
- OMP 2-19 - Round Sheets.
- OMP 2-22 - Shift turnover.
- OMP 2-28 - Diesel Generator Logbook.
- OMP 2-29 - Technical Specifications Logbook.
- OMP 2-30 - Test Logbooks.
- OMP 2-31 - Control Room Annunciator Status.
- CNSD 3.1.10 - Control Room Access and Control
- CNSD 3.1.15 - Activities Affecting Station Operations or Operating Indications.
- CNSD 3.1.16 - Recorder Charts.
- CNSD 3.1.18 - Investigation of Reactor Trips.
- CNSD 3.1.19 - Action to take in Case of "Exceeding of Limits"
- CNSD 3.1.24 - Documentation of Allowable Operating Transient Cycles.
- CNSD 3.1.26 - Operations Management Procedures.
- CNSD 3.1.27 - Operations Management Responsibilities.
- CNSD 3.3.7 - Work Request Preparation.

- CNSD 4.2.1 - Development, Approval and Use of Station Procedures.
- CNSD 4.2.2 - Independent Verification Requirements.
- SNDS 4.4.3 - Temporary Station Modifications.
- CNSD 2.8.1 - Reporting Requirements.
- CNSD 2.8.2 - LER Reportability Guidance
- CNSD 2.8.3 - 10 CFR 21 Reportability Guidance
- CNSD 2.8.4 - Incident and Station Report Format and Content.

The inspectors interviewed operations personnel, reviewed applicable logs and other documentation to determine if operation of the plant was being conducted as described in the above listed procedures, and concluded that operational activities were conducted in accordance with these procedures. The inspector observed a shift turnover in the control room. The turnover was conducted in a professional manner and appeared to be quite thorough and conducted in accordance with operations Management Procedure (OMP) 2-22, "Shift Turnover".

b. Technical Specifications

The inspector verified that a copy of the current license and controlled set of Technical Specifications (TS) are maintained in the control room and that a program is in place to add TS amendments promptly upon issue. SD 2.1.7, "FSAR and Technical Specification Amendment Processing and Interpretation" describes the manner in which TS changes will be implemented and reviewed by the station groups. The amendments are handled by Licensing which issues them to the various sections which are in turn responsible for making procedure changes (if applicable). The changes to procedures generated are reviewed by an independent nuclear safety review board and the operators receive training on the amendment by the shift technical advisor.

The Technical Specifications and procedures are cross referenced in the Technical Specification/Performance Test Manual which balances the TS requirements against the procedure. This manual, like all documents, is updated by the Operating Engineer of Document Development (OEDD) to assure that it is current. In this case, the update occurs every six months. Another document, the Technical Specification Reference Manual, relates the operational mode to the applicable component to the TS. The inspector noted that the only method of relating an instrument to a TS is by the Annunciator Response Procedure. The inspector observed that these manuals are used by the control room operators.

Within this area inspected, no violations or deviations were identified.

c. Procedure and Documents

The inspector reviewed the controlling documents for writing, reviewing, implementing, and changing procedures. The inspector reviewed selected procedures, drawings, and logs to determine if they were being kept in accordance with the controlling documents and also observed operations personnel in their use of procedures.

The inspector reviewed OMP 4-1, "Procedure Writing Guide", OMP 4-2, "Procedure Justification Document", OMP 4-6, "Retype and Reissue of Procedures", and SD 4.2.1, "Development, Approval, and Use of Station Procedures". These instructions provide detailed information on how to develop, obtain approvals of, and use preoperational, permanent, and temporary procedures. The inspector noted that procedures are changed for safety-related equipment by using a Procedure Major Change Process Record. This consists of Nuclear Safety Evaluation Checklist and an ALARA Checklist which analyze the safety and radiological impact of the change. The changes are reviewed and approved by the Safety Review Committee and are maintained with the master copy. SD 4.2.1, provides a list of people that are authorized to review procedures. The inspector then reviewed the following procedures to determine if they are being kept in accordance with the controlling documents:

- OP/1/A/6100/02, Controlling Procedures for Unit 1 Shutdown
- OP/1/A/6100/05, Unit Fast Recovery
- OP/1/A6200/09, Cold Leg Accumulator Operations
- OP/1/A/6100/03, Controlling Procedure for Unit 1 Operations
- EP/1/A/5000/1A, Reactor Trip Response
- EP/1/A/5000/IC6, LOCA Outside Containment
- EP/1/A/5000/IE, Steam Generator Tube Rupture

The inspector noted that the procedures followed the recommended format, the change records were updated as required, the last working copy was in the front of the procedure folder in the control room, all changes and change numbers were entered on the controlled copy, the working copy and controlled copy were compared within one week when required, and all tagout removal and replacement forms were attached when work was performed. In addition, all initial conditions, prerequisites, and procedure signoffs were filled in as required for procedures in progress.

The inspector observed that the control room operators have all necessary procedures available to them (e.g. Operating Procedures, Emergency Procedures, Abnormal Procedures, Response Procedures) and that they are being used in accordance with the controlling documents. The OEDD is responsible for maintaining all procedures in an up-to-date status. The inspector noted one possible problem with the handling of procedures. The Shift Supervisor is allowed to delete a step in a procedure if certain criteria are met; however, there is no requirement

to review the deleted step to determine if its deletion was in fact proper under the applicable circumstances. A step deletion is reviewed only if it has been deleted from the procedure several times and this is done only to determine if the procedure needs a permanent change. The inspectors consider that the licensee should take action to provide a management review to ensure that steps are deleted in an appropriate fashion. This is identified as an Inspection Followup Item (IFI-413/85-12-04).

The inspector reviewed the control room drawings and determined that they are good quality and readily accessible to the operators. The inspector then selected ten drawings in the control room and verified that they are current to the master copies located in document control. The OEDD is responsible for maintaining these documents and reviews each drawing on an annual basis to assure that it is up-to-date.

Within this area inspected, no violations or deviations were identified.

d. Independent Verification

The inspector reviewed Operations Manual Procedure (OMP) 1-15, "Independent Verification" and Station Directive (SD) 4.2.2, "Independent Verification Requirements" to determine if the licensee's procedures are in order to assure that independent verification is carried out properly in accordance with the FSAR response to TMI Action Item I.C.6. The inspector also reviewed OMP 2-18, "Tagout Removal and Restoration" and OMP 2-33, "Valve and Breaker Position Verification and Valve Operation" to determine how these procedures actually relate to independent verification. OMP 1-15 and SD 4.2.2 detail the actions to be performed by the operators when they are performing the independent verification. SD 4.2.2 gives the methods for identifying and establishing the status of systems and the acceptable means of accomplishing independent verification. OMP 1-15 gives the requirements, methods for performing, and the components (valves and breakers) that are required to be independently verified. These procedures specify that the operators are to act independently of one another (although they may travel together while performing the task) and that all safety-related equipment and equipment important to safety is to be independently verified. OMP 2-33 amplifies the independent verification process by providing the method for checking valve and breaker position which includes the methods for positioning and checking locked valves. In addition, OMP 2-18 specifically states when and who may waive the requirement for independent verification if necessary.

The inspector noted that the Quality Assurance (QA) Surveillance group had completed an audit of independent verification and had identified some deficiencies. The QA Surveillance group recommended corrections to these deficiencies which included such items as adding flanges and hangers, that are necessary to the operability of safety systems, to the required independent verification component list and training of maintenance personnel in independent verification.

The operators are currently trained in the use of independent verification in their initial training program and they will be periodically retrained in their operator requalification program. The Nuclear Equipment Operators (NEO's) are capable of performing valve and breaker lineups (including independent verification) on all ECCS equipment provided that they have been certified on the ECCS systems. The inspector noted that the all ECCS lineups are verified correct prior to entering mode four. These procedures are in accordance with the licensee's FSAR response to TMI actions item I.C.6.

Within this area inspected, no violations or deviations were identified.

e. Maintenance of Required Logs

The inspector reviewed OMP 2-29, "Technical Specification Action Items Logbook". This instruction requires that a logbook be maintained and that an entry be made in the logbook anytime a limiting condition for operations (LCO) cannot be met without the associated actions statement, inoperable equipment causes operation in an action statement, inoperable redundant equipment is not required in the existing mode, inoperable equipment due to surveillance requirements does not meet acceptance criteria or is not performed within the specified time interval, or anytime equipment is made inoperable by the inoperability of other equipment. The inspector then reviewed the actual logbook maintained by the shift supervisor and determined that it is maintained and reviewed in accordance with the controlling document with one exception. The shift supervisors were not recording the time of their weekly review in the log. The inspector brought this to the attention of the Shift Operating Engineer.

The inspector reviewed OMP 2-31, "Control Room Annunciator Status Log". This instruction requires that a log be maintained by the control room operator that lists all significant alarm and alert conditions. The inspector then reviewed the actual log and determined that it is maintained properly and that the required reviews and audits were being performed in accordance with the controlling document. The inspector noted that a current set of annunciator response procedures is located in the control room and that it is used by the operators.

Within this area inspected, no violations or deviations were identified.

f. Support Group Interface to Operations

The inspector reviewed the interface of support groups such as Health Physics, Quality Assurance, Maintenance and Security with Operations. Discussions were held with the supervisors and personnel from Operations as well as the support groups. The inspector noted that the Operations personnel at all levels feel that they have adequate support from the Health Physics, Quality Assurance, Maintenance and Security departments. The inspector also noted some novel programs that aid in the operations-support interface. One such program in place is the use

of Health Physics shift technicians that rotate on-shift with Operations personnel. These technicians are partly at the disposal of the shift supervisor for such things as surveillance, releases, and Technical Specification related items. Discussions with the supervisors and personnel from the support groups revealed that they have a good working relationship with the Operations department.

The inspector discussed with the Superintendent of Operations and Maintenance the mechanisms in place for feedback of generic type problems found at other Duke plants that do not qualify as Licensee Event Reports and the methods of tracking to identify generic problems found at Catawba. The discussions revealed that there is no formal program in place but that the superintendents and supervisors routinely meet for an administrative review of all Duke plants and that some technical matters are discussed. The inspector also noted that the computer system used in tracking trend analysis for work requests cannot flag an item of generic implication; however, a failure study is performed on each work request to determine the cause of failure for a specific component.

Within this area inspected, no violations or deviations were identified.

g. General Observation of Plant Systems

The inspectors toured portions of the control building, turbine building, and auxillary building. Observations included tagout verifications, housekeeping and general plant conditions.

The inspectors expressed concern about the number of liquid leaks evident throughout the plant and consider that priority should be directed toward repair of these leaks at this time before the system becomes radioactive with resultant contamination and radiation exposure complications. The inspectors noted that many valves are tagged for leaks indicating maintenance work is required but it appears that no priority is assigned to this work. The inspectors noted that there appeared to be an unusually large number of catch basins attached to leaking valves. Licensee representatives indicated that there are an excess of 250 catch basins in place. Licensee management further indicated that a systematic approach is being formulated to correct those leaks which can be repaired during plant operations and those which will require outage attention. This is identified as an Inspector Followup Item (IFI 413/85-12-05).

The inspectors noted numerous invalid annunciators lit in the control room. The licensee stated that I&E had agreed to repair approximately three deficiencies a day to resolve these problems. The inspectors endorse the licensees prioritizing these deficiencies.

The inspectors noted four Unit 2 valves that were danger tagged in the closed position and yet valve indication indicated the valves to be open. The inspectors notified the shift supervisor who took prompt action to correct the deficiency. Further investigation determined that the tags were construction tags hung by the Construction System Group. The valves in question had no interface with Unit 1 and were

originally hung to prevent backflow into Unit 2 systems which had been previously flushed.

The inspectors noted that valves are labeled within the plant but that the labels are often very difficult to read. ALARA concerns dictate that valves be readily identifiable and to this end, the licensee should consider improving the readability of valve tags. This is identified as an Inspector Followup Item (IFI 413/85-12-06).

8. Event Review

- a. The inspector reviewed the functions and performance of the Catawba Safety Review Group (CSRG). This organization exists as a result of Duke Power Company's initiative and is not required by the licensee's Technical Specifications. According to the CSRGs charter, this organization "is an on-site independent technical review group established for the purposes of examining and making detailed recommendations to management on plant operating characteristics, NRC issuances, Licensing Information Service Advisories, and other appropriate plant design and operating experience information from INPO, NSS suppliers, etc., that may enhance or improve plant safety; reviewing and auditing routine plant activities to verify that plant operations and maintenance activities are performed correctly; making recommendations that may improve plant safety and operational performance; and conducting station incident investigations and preparing required reports."

The inspector reviewed selected licensee generated Non-Routine Event Reports and followup investigations by the CSRG. The inspector found these investigations to be detailed and accurate and consistent with the information provided in the subsequent Licensee Event Reports (LER) submitted to the NRC.

An inspector reviewed the draft Catawba Nuclear Station Directive 3.11.3 "Duke Power Company Catawba Nuclear Station Material Condition." This procedure divides the station into areas of responsibility by work groups and management who will have the responsibility to ensure that material condition standards are maintained. The procedure also provides a program of inspections to identify and track deficiencies.

The inspector found no violations or deviations in this area.

- b. Post Trip Review

The inspector reviewed Station Directive 3.1.18 for post trip review and the completed post trip review package for the following events

1/14/85 Manual Trip Due to Loss of RCP Cooling
1/23/85 Trip From Lo Lo SG Level

1/29/85 Reactor Trip During Blackout Test
1/31/85 Trip During Loss of Control Room Test
3/14/85 N44 Nuclear Instrument Noise With N41 Placed in Trip

The inspector observed that the packages were acceptable and showed evidence of continuing improvement. The inspector emphasized to Licensee management at the exit interview that the purpose of a post trip review (PTR) is to look for equipment that did not perform correctly. The Catawba PTR emphasizes the cause of the trip and relies heavily on the plant computer. Control room strip chart recorders are only used as a last resort. The inspector pointed out a recent failure of overpressure differential temperature instruments at McGuire as an example where review of strip charts revealed incorrect performance of equipment. Licensee representatives acknowledged their understanding of these comments.

c. Xenon Transient

During the inspection period, the plant encountered a substantial xenon transient. The causes and corrective action were examined. A startup test was in progress on March 18 to measure the maximum flux perturbation expected from a dropped control rod. With the reactor at approximately 50% power, a flux map was taken. When peripheral rod D-12 was fully inserted, another flux map was planned but equipment problems delayed the flux map. After nine hours, it was decided to delay the test and the rod was withdrawn to its former position. Within hours, it became clear that a quadrant to quadrant xenon transient was in progress and when a nuclear instrument (NI) surveillance test could not meet acceptance criteria, power reduction was begun. The surveillance calls for verification that all four NI channels read within 2% of each other and with the xenon oscillation in progress, the acceptance criteria could not be met. The worst observed power tilt was as follows: With reactor thermal power of 48.5%, total power in quadrants 1 and 3 was indicated to be 45.5% and 46.8% respectively while quadrants 2 and 4 read 73.6% and 30.5% respectively.

This is an undesirable condition but allowed by the Technical Specifications as the quadrant power tilt limits are only applicable for reactor powers exceeding 50%. On March 19 power was reduced to 20% and the oscillation was reduced for a period of time, but manifested itself again later that day.

The reactor vendor was consulted and the situation reviewed by licensee management. It was determined that no limits were in danger of being exceeded and the oscillation was dampening. Power was again increased to approximately 30% to hasten the dampening and the NI channels closely monitored to ensure that no Technical Specification limits were exceeded. The inspector observed that during this transient, licensee actions were timely, conservative and prudent. No violations or deviations were identified.

9. Followup On Previously Identified Items

- a. IFI (413/84-25-03, 414/84-10-03) Indepth Surveillance of Reactor and Senior Reactor Operator Training by Quality Assurance - Closed. An inspector reviewed the licensee's Departmental Audit NP-84-9 (CN) dated June 11, 1984, which, in part, reviewed operator training records. This action by the licensee is considered sufficient to close this item.
- b. IFI (413/84-25-04, 414/84-10-04) Simulator Training Group Size - Closed. Licensee training management indicated that past inspection simulators training group sizes have been kept within the four trainees per group guidelines provided in the licensee Final Safety Analysis Report.
- c. Technical Specification Training Concern Stated in Inspection Report (50-413/84-93, 50-414/84-42). Although not addressed as an inspection followup item by the NRC, the licensee has provided some documentation of Technical Specification training for cold license groups 1 and 2. Subsequent to the aforementioned inspection, additional Technical Specification training was provided as part of the licensee's requalification program. The inspectors found this initiative to an NRC concern both adequate and responsive.