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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD



In the Matter of)
DUKE POWER COMPANY, et al.)
(Catawba Nuclear Station,)
Units 1 and 2))

Docket Nos. 50-413
50-414

TESTIMONY OF G. W. GRIER

PART I

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Q. STATE YOUR NAME AND BUSINESS ADDRESS.

A. George William Grier, III
Duke Power Company
P. O. BOX 33189
Charlotte, NC 28242

Q. STATE YOUR PRESENT JOB POSITION WITH DUKE POWER COMPANY AND DESCRIBE THE NATURE OF YOUR JOB.

A. My present position is Corporate Quality Assurance Manager. I am responsible for the management of the Duke Power Company Quality Assurance Department. I report to Company management regarding the proper conduct of our Quality Assurance Program. This involves assuring that certain activities are carried out in accordance with Quality Assurance procedures developed to implement Nuclear Regulatory Commission (NRC) regulations, and various industry codes and standards.

Q. DESCRIBE YOUR PROFESSIONAL EXPERIENCE AND QUALIFICATIONS, INCLUDING YOUR PRIOR POSITIONS HELD WITH DUKE POWER.

1 A. I received a Bachelor of Science Degree in Physics in 1964 from the
2 George Institute of Technology. I am a registered professional
3 engineer in the State of North Carolina. I served for five years in
4 the United States Navy as a Commissioned Officer. I attended
5 Nuclear Power School, Prototype Reactor Training and Submarine
6 School. I served for three years aboard a Polaris Submarine and
7 was qualified as an Engineering Watch Officer on an S5W Nuclear
8 Power Plant. At various times I held the position of Sonar Division
9 Officer, Communications Officer, Electrical Division Officer and
10 Supply Officer.

11 After leaving the Navy in May of 1969, I joined Duke Power
12 Company in the Construction Department at the Oconee Nuclear
13 Station. My duties there included supervision of welding
14 inspectors, radiographers and other non-destructive examination
15 (NDE) inspectors. I was certified by the company as a Level III,
16 non-destructive examination inspector in liquid penetration
17 inspection (PT), magnetic particle inspection (MT), radiography
18 (RT), and ultrasonic testing (UT) in accordance with requirements
19 of the American Society of Non-Destructive Testing Document
20 ASNT-TC-1A. I was also responsible for development and
21 maintenance of welding procedures, as well as review of welding
22 inspection documentation.

23 In May of 1971, I was transferred to the McGuire Nuclear
24 Station as Senior Construction Engineer. In that role I supervised
25 the Construction Technical Support Organization, which included
26 Quality Control inspectors, and the Construction Planning and
27 Scheduling Section. I was also responsible for developing the
28 procedures and recommending organization modifications necessary

1 to bring the Quality Assurance Program into conformity with the
2 then recently published 18 point criteria set forth in 10CFR50,
3 Appendix B.

4 In May of 1974, concurrent with the formation of the Quality
5 Assurance Department, my title was changed to Project Engineer.
6 At that time the Quality Control inspectors were placed in a
7 separate organization within the Construction Department project
8 organization reporting to me.

9 In May of 1980, I was transferred to the Catawba Nuclear
10 Station as Planning Manager. My duties were to develop and
11 maintain the construction schedule for Catawba. In October of
12 1981, I was transferred to the Oconee Nuclear Station as Manager of
13 the Station Support Division. In this role I was responsible for all
14 construction activities conducted at the Oconee Nuclear Station. On
15 February 1, 1982 I was appointed Corporate Quality Assurance
16 Manager.

17 Q. DESCRIBE THE ORGANIZATION OF THE QUALITY ASSURANCE
18 DEPARTMENT.

19 A. The Quality Assurance Department is currently organized into six
20 divisions, each of which is headed by a Manager reporting to me.
21 The six divisions are Administrative Services, Operations, Technical
22 Services, Audit, Vendor, and Projects. I have attached an
23 organizational chart to my testimony as Attachment 1 which reflects
24 the Department organization.

25 The Administrative Services Division is responsible for training
26 and certification of all inspectors and for the technical and
27 developmental training for all members of the department.
28 Administrative Services is also responsible for all personnel

1 administration and for long term maintenance of Quality Assurance
2 records.

3 The Operations Division is responsible for carrying out the
4 Quality Assurance program at our operating nuclear stations.
5 There are currently four groups in this division, the QA groups at
6 Oconee, McGuire and Catawba, and a General Office Group
7 responsible for In-service Inspection Planning and Contract
8 Administration.

9 The Technical Services Division is responsible for development
10 and maintenance of all quality assurance procedures, surveillance of
11 Design Engineering activities, review of vendor quality assurance
12 documentation, interpretation of quality assurance requirements in
13 codes, standards, and design specifications, and trending of
14 non-conforming item reports (NCI's).

15 The Vendor Division is responsible for the audit and approval
16 of supplier quality assurance programs. They maintain a list of
17 currently qualified suppliers.

18 The Audit Division is responsible for the internal auditing of
19 our Quality Assurance Program. They audit the activities of other
20 divisions in the Quality Assurance Department as well as other
21 departments who are responsible for carrying out the requirements
22 of the Quality Assurance Program. These audit activities include
23 certification that the procedures meet the requirements of the
24 codes, standards, specifications and NRC regulations which we are
25 committed to meet. In addition, these activities verify the proper
26 implementation of these approved procedures. Periodic reports are
27 made to management on the effectiveness of the QA Program.

1 The Projects Division is responsible for the Quality Assurance
2 Program during construction at the Catawba Nuclear Station and at
3 Cherokee. This division includes the quality assurance engineers
4 and technicians who are responsible for reviewing construction
5 procedures and documents for conformity with QA requirements, for
6 determining specific inspections required to carry out the program,
7 and for developing and approving corrective action instructions.
8 The Projects Division also includes Quality Control inspectors who
9 implement inspection procedures, Quality Assurance Technicians and
10 Clerks who review completed quality assurance inspection
11 documentation, and a surveillance group which reviews the
12 implementation of the Quality Assurance Program by both the
13 Construction Department and the Quality Assurance Department.

14 Q. DOES THIS DEPARTMENTAL ORGANIZATION DIFFER IN ANY
15 SIGNIFICANT MANNER FROM THE ORGANIZATION IN 1981?

16 A. The organization is essentially the same now as it was during the
17 major part of 1981. One significant change was the transfer of the
18 Quality Control inspectors from the Construction Department to the
19 Quality Assurance Department in February 1981, and the elimination
20 of the Projects QA Organization at the McGuire Nuclear Station
21 because of completion of construction.

22 Q. DESCRIBE THE INTERFACE BETWEEN THE QA DEPARTMENT AND
23 THE CONSTRUCTION DEPARTMENT ON THE CORPORATE LEVEL.

24 A. The Vice President of the Construction Department, R. L. Dick,
25 and I regularly attend staff meetings conducted by Mr. Owen. Any
26 matters which affect both departments is reviewed during these
27 regular staff meetings. In addition, we attend regular project
28 review meetings at which all phases of the Catawba Nuclear Station

1 are discussed. Trend reports which analyze the corrective action
2 program are regularly reviewed by Construction and Quality
3 Assurance management. The results of internal audits performed
4 by the Audit Division are discussed during exit meetings with
5 Construction management. The review and approval of quality
6 assurance procedures contained in the Duke Power Company
7 Construction Department Quality Assurance Manual involve both
8 Construction and Quality Assurance Management. The results of
9 NRC inspection visits as well as inspections by organizations such
10 as ASME are jointly reviewed by Quality Assurance and
11 Construction management.

12 Q. DESCRIBE THE INTERFACE BETWEEN THE QA DEPARTMENT AND
13 THE DESIGN ENGINEERING DEPARTMENT AT THE CORPORATE
14 LEVEL.

15 A. The interface between QA and Design Engineering is very similar to
16 the interface with Construction. The Vice President of the Design
17 Engineering Department, L. C. Dail, also attends the regular staff
18 meetings held by Mr. Owen. Any matters which affect both
19 departments are reviewed during these meetings. We also attend
20 periodic project review meetings with Construction to review the
21 status of construction of the Catawba Nuclear Station. Trend
22 reports of non-conformance and variation notices are developed and
23 submitted to the management of both Quality Assurance and Design
24 Engineering for review. Design Engineering management attend exit
25 meetings conducted by the Audit Division after internal audits of
26 the Design Engineering Quality Assurance Program, and there is
27 frequent contact between Quality Assurance personnel and Design

1 Engineering personnel in the course of review of specifications and
2 procurement documents.

3 Q. HOW DO YOU DEFINE QUALITY ASSURANCE?

4 A. Quality Assurance is a planned management program designed to
5 assure that activities are carried out in accordance with
6 procedures, and result in the end product that meet certain
7 specifications and standards. For the design and construction
8 phase of Catawba, the Quality Assurance Program assures that
9 design and construction are carried out in accordance with
10 procedures which assure that the completed plant meets the
11 established specifications and standards.

12 Q. HOW DOES QUALITY ASSURANCE DIFFER FROM QUALITY
13 CONTROL?

14 A. Quality Control is those specific inspection activities designed to
15 determine the physical characteristics of work. These physical
16 characteristics are compared to specific criteria to determine if the
17 work is acceptable or must be reworked or discarded. Quality
18 Assurance encompasses Quality Control, as well as the programs
19 designed to guide the actual work activities of craftsmen,
20 technicians, engineers and others engaged in activities covered by
21 the Quality Assurance Program.

22 Q. IS THERE A SET OF CRITERIA OR STANDARDS GOVERNING THE
23 DUKE POWER QUALITY ASSURANCE PROGRAM?

24 A. Yes. The Duke Power Company Quality Assurance Program is
25 governed by NRC regulations, including 10CFR Part50, Appendix
26 B. The program must also encompass elements of the Final Safety
27 Analysis Report which specifies certain codes and standards.

1 Q. WHAT IS REQUIRED BY APPENDIX B?

2 A. Appendix B has eighteen specific criteria that our Quality
3 Assurance Program must comply with. These criteria include
4 management commitment, organizational requirements, and
5 requirements for certain activities such as design control, document
6 control, procurement control, inspections, control of measurement
7 and test equipment, corrective action plan requirements, and
8 audits.

9 Q. DOES THE DUKE POWER QA PROGRAM SATISFY THE "18 POINT
10 CRITERIA" REQUIRED BY APPENDIX B?

11 A. Yes. The Duke QA Program has satisfied the Appendix B criteria
12 since they were adopted by the NRC. The QA Program as
13 described in the Topical Report was submitted to the NRC in 1974
14 and was approved. Each subsequent amendment to the Topical
15 Report has also been approved by NRC.

16 Q. DESCRIBE HOW THE DUKE POWER QA PROGRAM SATISFIES EACH
17 CRITERION REQUIRED BY APPENDIX B, STARTING WITH
18 ESTABLISHMENT OF THE QA ORGANIZATION.

19 A. Duke Power Company is responsible for the design, construction,
20 operation and quality assurance of its nuclear power plants, as well
21 as its other operating plants. Individuals engaged in these
22 activities are employees of Duke Power Company. The Corporate
23 Quality Assurance Manager directs the Quality Assurance
24 Department and has the sole responsibility for the development,
25 management, and implementation of the company's Quality Assurance
26 Program. The Corporate Quality Assurance Manager reports
27 directly to the Executive Vice President, Engineering and
28 Construction. I have attached an organizational chart as

1 Attachment 2 to my testimony which reflects this relationship. Each
2 individual in the Quality Assurance Department, including the
3 Quality Control Inspectors who report to successive levels of
4 supervision in the Quality Assurance Department, is independent of
5 any other department in the company. Members of the Quality
6 Assurance Department have the full authority to execute the Quality
7 Assurance Program, including the authority and responsibility to
8 stop work when the continuation of the work would produce results
9 adverse to quality. The organizational responsibilities of each of
10 these departments is set forth in the Duke Power Company Topical
11 Report (Duke 1.A.).

12 The Executive Vice President, Engineering and Construction,
13 Mr. Owen, is the Corporate Executive responsible for Quality
14 Assurance. The Design Engineering Department, the Construction
15 Department and the Quality Assurance Department all report to Mr.
16 Owen. The activities of the Design Engineering and Construction
17 Departments affecting nuclear safety related work are delineated in
18 procedures which are reviewed and approved by the Quality
19 Assurance Department. The Quality Assurance Department
20 maintains control over the safety related work through these
21 procedures.

22 Q. HOW DOES DUKE POWER SATISFY THE APPENDIX B
23 REQUIREMENTS WITH RESPECT TO ESTABLISHMENT OF A QA
24 PROGRAM?

25 A. Program manuals for the Design Engineering Department, the
26 Construction Department and the Quality Assurance Department
27 have been written. These manuals contain procedures which control
28 the activities of these three departments. Similar procedures are

1 written which control the activities of quality assurance personnel
2 and Nuclear Production Department personnel during the start-up
3 and operating phase of the plant. All of these procedures are
4 reviewed and approved by the Quality Assurance Department.
5 These procedures include requirements for training personnel
6 performing safety-related activities, and include requirements to
7 audit these activities regularly.

8 Q. HOW DOES THE DUKE POWER QA PROGRAM SATISFY THE
9 APPENDIX B REQUIREMENTS IN THE AREA OF DESIGN CONTROL?

10 A. Quality Assurance Procedures govern the activities of the Design
11 Engineering and Quality Assurance Departments associated with the
12 design of safety-related systems, components and structures in each
13 nuclear power plant. Design Engineering specifications are
14 developed by qualified individuals based on applicable codes,
15 standards and FSAR commitments. These specifications are
16 independently reviewed by another qualified individual within
17 Design Engineering, and are reviewed by the Quality Assurance
18 Department to assure incorporation of the necessary quality
19 assurance information. All Design Engineering drawings are
20 reviewed independently by a qualified individual who was not
21 responsible for producing the original drawing information. Each
22 drawing is then approved by an individual authorized in writing the
23 Chief Engineer of the sponsoring division prior to release to
24 Construction. In order to establish the proper interfaces within
25 Design Engineering, each design drawing and specification is
26 reviewed by a designated engineer from the other divisions in
27 Design Engineering. Any field variation to the design is
28 documented and approved by the Design Engineering Department

1 prior to incorporation in the final design documents. When
2 inspections reveal as-built conditions different from design
3 documents, those conditions which are not corrected by
4 Construction are evaluated by Design Engineering under the
5 Non-Conforming Item Report Procedure. Those conditions which are
6 acceptable are documented in the final design documents to reflect
7 the as-built condition. Those conditions which are not acceptable
8 are identified to Construction for correction. All design information
9 is distributed using a written control procedure. Methods for
10 resolving non-conformances are incorporated in the Design
11 Engineering Quality Assurance Program.

12 Q. WHAT ABOUT DOCUMENT CONTROL AND PROCUREMENT
13 DOCUMENT CONTROL?

14 A. Quality Assurance procedures, design drawings and specifications,
15 and procurement documents, as well as any other procedures and
16 instructions relating to nuclear safety-related activities, are
17 controlled by procedures in the Design Engineering and
18 Construction Quality Assurance Manuals. These procedures assure
19 that all documents, including changes and revisions, are adequately
20 reviewed and approved by authorized personnel, and assure that
21 the documents are transmitted and received at appropriate locations.
22 A transmittal sheet is attached to documents which must be signed
23 and returned to the sending location as a means of assuring proper
24 receipt. Controlled document lists are generated which indicate the
25 latest revision of the document. After documents are received at
26 the construction project it is the responsibility of trained document
27 controllers to maintain and distribute controlled documents. These
28 document controllers replace superseded or revised documents with

1 current documents, and maintain records of the distribution of
2 controlled documents. Certified inspectors regularly check the
3 functioning of this document control system.

4 The majority of procurement documents are originated by
5 Design Engineering personnel, although some documents are
6 originated by engineers in Construction or Nuclear Production.
7 These engineers are responsible for the technical aspects of the
8 procurement documents. These technical aspects include conformity
9 with design specifications and required codes and standards.
10 Regulatory requirements, such as compliance with Appendix B, are
11 also included. Each procurement document is independently
12 reviewed by a qualified individual other than the person who
13 prepared the document, and is approved by an individual
14 designated by the Chief Engineer or Project Manager. All
15 procurement documents for nuclear safety-related items are reviewed
16 by the Quality Assurance Department to assure that quality
17 assurance requirements, such as documentation, non-destructive
18 examination tests and inspections, are included in the document.
19 This QA review also assures that vendors are on a current list of
20 approved vendors produced by the Quality Assurance personnel in
21 the Vendors Division. Prior to being placed on this approved list
22 the vendor quality assurance programs are evaluated by the Quality
23 Assurance Vendors Division.

24 Mill Power Supply Company, the purchasing department of
25 Duke Power Company, originates purchase orders in strict
26 accordance with the approved purchase requisition. An
27 independent check for correct transferal of data from the

1 requisition to the purchase order is performed by the Quality
2 Assurance Technical Services Division.

3 Q. HOW DOES THE DUKE POWER QA PROGRAM SATISFY THE
4 APPENDIX B REQUIREMENTS WITH RESPECT TO CONTROL OF
5 PURCHASED MATERIAL, EQUIPMENT, AND SERVICES?

6 A. Control of purchased material, equipment and services begins with
7 the selection of qualified vendors. The Vendors Division of the
8 Quality Assurance Department audits prospective vendors to make
9 sure that their quality assurance programs comply with the
10 appropriate portions of Appendix B, as well as other QA program
11 requirements that might be specified in applicable codes and
12 standards. If the Vendors Division approves a supplier or
13 contractor they are placed on a controlled Approved Suppliers List.
14 The control of the requisition and purchase order process has been
15 described in response to a prior question.

16 During manufacture of purchased material or equipment, or the
17 performance of purchased services there are frequent technical
18 reviews by Design Engineering or Construction, as well as
19 surveillance visits by the Vendors Division of the Quality Assurance
20 Department. Prior to shipping material or equipment, our
21 purchasing department, Mill Power Supply Company, assures that
22 the requisitioning department, as well as Quality Assurance are
23 satisfied that the material can be shipped. Shipping, packaging
24 and handling instructions which comply with the required standards
25 are given to the vendor on the purchase order. When the material
26 or equipment is received on site, a certified quality control
27 inspector checks the material to assure that it is the material
28 described by the requisition and purchase order and checks to see

1 that no shipping damage has occurred. The Technical Services
2 Division of Quality Assurance reviews the documentation associated
3 with material to assure that all specifications and standards have
4 been met.

5 Q. HOW DOES THE DUKE POWER QA PROGRAM SATISFY THE
6 APPENDIX B REQUIREMENTS WITH RESPECT TO IDENTIFICATION
7 AND CONTROL OF MATERIALS, PARTS, AND COMPONENTS?

8 A. Requisitions and purchase orders specify marking requirements
9 which the vendor must apply to the material, parts or components
10 prior to delivery. During receipt inspection, certified quality
11 control inspectors verify that the markings on the materials, parts
12 or components comply with the requirements of the purchase order
13 and requisition. Approved quality assurance procedures control the
14 marking and identification of materials, parts and components in
15 storage and in use. These procedures include requirements to
16 transfer markings if construction activities would make them
17 inaccessible or if materials such as pipe or plate are divided.
18 Inspections points are put in procedures that require certified
19 inspectors to check marking requirements during fabrication and
20 erection. Procedures for handling non-conforming items include the
21 requirement to mark these non-conforming materials to clearly
22 indicate they are not to be used and, where possible, to separate
23 them from materials, equipment ad components that may be used.

24 Q. HOW DOES THE QA PROGRAM SATISFY THE APPENDIX B
25 CRITERIA WITH RESPECT TO CONTROL OF SPECIAL PROCESSES?

26 A. All special processes including, but not limited to, cleaning,
27 welding, pipe bending, heat treating, non-destructive examination
28 and calibration, are accomplished by qualified personnel under

1 controlled procedures approved under the QA Program. The
2 Vendors Division of Quality Assurance monitors special processes
3 being conducted by manufacturers and contractors. They assure
4 that these manufacturers and contractors have documented programs
5 for control of all special processes utilized.

6 Special processes used by the Construction Department are
7 controlled by procedures approved under the quality assurance
8 program. Controls include requirements to certify the process and
9 the individuals involved in carrying out the process. These
10 procedures also require that process control be developed and
11 approved by qualified individuals. The process control sets forth
12 the step-by-step instructions to the craftsmen and identifies
13 inspection points. All welders and welding processes are certified
14 to the requirements of the American Society of Mechanical Engineers
15 (ASME), Section IX. All individuals conducting non-destructive
16 examination processes are certified to the requirements of the
17 American Society of Non-Destructive Testing recommended practice
18 SNT-T-1A.

19 Q. HOW DOES THE QA PROGRAM SATISFY THE CRITERIA WITH
20 RESPECT TO INSPECTION OF ACTIVITIES AFFECTING QUALITY?

21 A. All inspection activities are conducted in accordance with approved
22 quality assurance procedures. Inspection activities of vendors are
23 conducted in accordance with their quality assurance program which
24 have been approved by the Vendors Division of Quality Assurance.
25 Vendor Division personnel review the conduct of the vendor
26 inspection program during surveillance visits, and have full
27 authority to stop work if conditions require such action.

1 The inspection program at the construction site is conducted
2 by certified Quality Control inspectors who report to the Project
3 Quality Assurance Manager. All Quality Control inspectors are
4 examined and certified in their particular area of responsibility.
5 These inspectors are independent from the Construction organization
6 which performs the work. Their activities are controlled by Quality
7 Assurance Procedures which are approved by the Quality Assurance
8 Department. These procedures include instructions for performing
9 the inspection, requirements for hold points which stop the work
10 until inspectors inspect a certain activity, acceptance criteria, and
11 documentation requirements. The results of inspections are
12 documented and include, as a minimum, the identity of the inspector
13 conducting the inspection and the results of the inspection. All
14 inspectors have full authority and responsibility to stop work when
15 conditions adverse to quality affecting nuclear safety are detected.

16 Q. HOW DOES THE QA PROGRAM SATISFY THE APPENDIX B
17 CRITERIA WITH RESPECT TO CONTROL OF TESTING?

18 A. Testing is conducted in accordance with detailed procedures which
19 are reviewed and approved by the Quality Assurance Department.
20 These procedures include the instructions for carrying out the
21 tests, including required conditions and required test equipment,
22 the acceptance criteria, and requirements for data collection. Only
23 properly calibrated equipment may be used. The tests are
24 inspected and documented by certified inspectors reporting to the
25 Quality Assurance Department. The tests results are evaluated and
26 approved by the Quality Assurance Department.

1 Q. HOW DOES THE QA PROGRAM SATISFY THE APPENDIX B
2 CRITERIA WITH RESPECT TO CONTROL OF MEASURING AND TEST
3 EQUIPMENT?

4 A. The program to control measuring and test equipment is
5 described in written approved procedures in the Quality Assurance
6 Program. These procedures require the unique identification of
7 each piece of measuring and test equipment, and describe the
8 calibration requirements, the intervals at which re-calibration is
9 required, and the system used to recall equipment for calibration.
10 The procedures contain the accuracy requirements and the
11 requirements for tracing the acceptance standards to nationally
12 recognized standards.

13 Q. HOW DOES THE QA PROGRAM SATISFY THE APPENDIX B
14 CRITERIA WITH RESPECT TO CONTROL OF MATERIALS
15 HANDLING, STORAGE, AND SHIPPING?

16 A. Handling, storage and shipping requirements are placed on
17 requisitions and purchase orders. These give instructions to the
18 vendor for shipping as well as to the receiving site for storage
19 requirements. Special procedures are written when necessary to
20 give more detailed storage requirements. Certified Quality Control
21 inspectors monitor the storage conditions of material to assure that
22 no deterioration takes place.

23 Q. HOW DOES THE QA PROGRAM SATISFY THE APPENDIX B
24 CRITERIA WITH RESPECT TO CONTROL OF INSPECTION, TEST
25 AND OPERATING STATUS?

26 A. Erection and inspection procedures require that the inspection, test
27 and operating status be marked on documentation traceable to the
28 item and, as appropriate, by physical marking on the item itself.

1 For example, each weld made is marked with a unique stencil
2 number by the welder who made it. Prior to transfer of systems
3 from Construction to the Nuclear Production Department, detailed
4 packages of information showing the status of structures, systems,
5 and components is assembled. Tags are used to indicate the actual
6 status of the system in the plant.

7 Q. HOW DOES THE QA PROGRAM SATISFY THE APPENDIX B
8 CRITERIA WITH RESPECT TO CONTROL OF NONCONFORMING
9 MATERIALS, PARTS AND COMPONENTS?

10 A. During the course of inspections, an inspector can indicate his
11 rejection of a certain item in several ways. When a minor
12 discrepancy is identified, the inspector can inform a craftsman or a
13 craft supervisor that he is not accepting a certain item and indicate
14 to the craftsman that he should make corrections in accordance with
15 approved procedures. In this case the inspector will not sign off
16 the documentation indicating that he has accepted the item. The
17 documentation required to be produced during the course of
18 inspections frequently has provisions to indicate what has been
19 rejected on the item. For these types of forms the inspector will
20 mark the reject block or in some other approved manner indicate
21 that the item has been rejected, and state the reasons for the
22 rejection. Subsequently, the inspector inspects the repair or
23 rework, and if acceptable, will sign the documentation indicating
24 the acceptance of the work activity.

25 When discrepancies are not minor, cannot be corrected in a
26 timely manner, and the applicable inspection procedure does not
27 offer a means to document the rejections and corrections of the
28 problem, the QA program provides other procedures for

1 identification and resolution of discrepancies such as Procedure
2 R-2. An inspector can use this procedure to describe the
3 identified discrepancies. The form used to document these
4 discrepancies (Form R-2A) is reviewed by technical personnel in the
5 Construction Department to determine the appropriate corrective
6 action. After this corrective action has been carried out, the
7 Quality Assurance Department will review that action to assure that
8 it was sufficient to correct the problem, that all required actions
9 and reinspections were performed, and that information on the form
10 is clear and complete.

11 Quality Assurance Procedure Q-1, Control of Non-Conforming
12 Items, is used to document discrepancies which fall into the
13 following categories:

- 14 1. A discrepancy requiring design evaluation other than
15 interpretations, clarifications or editorial changes.
- 16 2. A discrepancy representing a manufacturing deficiency
17 other than minor material deficiencies.
- 18 3. A discrepancy which will require extensive rework.
- 19 4. A discrepancy which represents a bypass inspection
20 holdpoint.
- 21 5. A discrepancy discovered during other than a preplanned
22 activity which would have no subsequent required
23 inspection planned which would check for that type of
24 discrepancy.

25 Each R-2A form is reviewed by Construction and QA using
26 these criteria to determine if it should be handled using Procedure
27 Q-1. This is the review of form R-2A for upgrading to an NCI.

1 In a situation where any of these five criteria are applicable,
2 an inspector or other individual would write a Non-Conforming Item
3 Report (NCI), Form Q-1A. The originator of the non-conforming
4 item will obtain a sequential serial number and place it on the form.
5 A designated QA Engineering Supervisor would then review the NCI
6 to assure that the item is non-conforming and requires processing
7 under Q-1. That person will also assure that all information needed
8 to describe the item and to perform the evaluation is provided. If
9 it is determined that an NCI is unnecessary the reason is explained
10 on the report and a copy provided to the originator. These voided
11 non-conforming items reports are filed and maintained. In the
12 past, it was not always a QA Program requirement to file and
13 maintain copies of voided non-conforming item reports, although the
14 other steps of this review process applied.

15 The actual item which is non-conforming will be tagged to
16 indicate its status, and if physically possible, will be segregated
17 from acceptable items. The non-conforming item report will be
18 processed as follows:

19 A technical review is performed by qualified engineers or
20 technicians in Design Engineering, Construction, or QA to
21 determine if the item can be reworked or must be scrapped. The
22 proposed disposition is reviewed by a second qualified engineer or
23 technician within the organization originating the disposition.
24 There is a QA approval of this disposition. Qualified engineers or
25 technicians will also provide corrective action instructions to
26 implement this disposition. This corrective action is reviewed by
27 QA for adequacy and for designation of required reinspection.

1 The non-conforming item is also reviewed by designated QA
2 Engineering Supervisors to determine if the situation is potentially
3 reportable under 10CFR, Part 21 or §50.55(e). There is also a
4 separate evaluation by designated QA Engineering Supervisors to
5 determine if significant corrective action needs to be considered.
6 Significant corrective action would involve actions which would
7 extend beyond the scope of correction of the specific item which
8 was non-conforming. All documentation concerned with
9 non-conforming item reports are reviewed by Quality Assurance and
10 filed in the permanent Quality Assurance records files.

11 Q. HOW DOES THE QA PROGRAM SATISFY THE APPENDIX B
12 CRITERIA WITH RESPECT TO ESTABLISHMENT OF MEASURES TO
13 INSURE CORRECTIVE ACTION?

14 A. Quality Assurance procedures that control work activities and
15 inspections contain instructions for corrective action. These
16 instructions include methods to identify and document discrepancies
17 as well as instructions for carrying out corrective action. More
18 significant discrepancies are recorded on Non-Conforming Item
19 Reports, Form Q-1A. Each non-conforming item report is reviewed
20 to determine if significant corrective action needs to be considered.
21 The corrective action required to bring the specific item into
22 compliance is recorded on the non-conforming item report. If there
23 is a need for significant corrective action, then the provisions of
24 Procedure R-6, Significant Corrective Action, are carried out.
25 Under the R-6 procedure, a designated individual in Quality
26 Assurance, Design Engineering and Construction is responsible for
27 determining the required corrective action. The items considered in
28 this evaluation include whether the condition is significant; what

1 the root cause of the problem is; what corrective action is required
2 to prevent recurrence; whether there are possible Duke or industry
3 generic implications; whether the condition is repetitive to the
4 extent that generic corrective action should be implemented; and
5 whether the condition needs to be investigated at other Duke sites.
6 The results of this evaluation are recorded on Form R-6A and
7 corrective actions required are documented. After the corrective
8 action is carried out there is a final review of the document by
9 Quality Assurance.

10 Quality Assurance procedures require analysis of trends in
11 discrepancies documented on Non-Conforming Item Reports, Form
12 Q-1A and Discrepancy Reports, Form R-2A. These trends are
13 provided to the appropriate management in Design Engineering,
14 Construction and Quality Assurance. These trends allow
15 management to assess the effectiveness of the corrective action
16 program.

17 Q. HOW DOES THE QA PROGRAM SATISFY THE APPENDIX B
18 CRITERIA WITH RESPECT TO CONTROL OF INSTRUCTIONS,
19 PROCEDURES, AND DRAWINGS?

20 A. The development and revision of quality assurance procedures is
21 carried out in accordance with a controlled program. This program
22 requires review and approval of these procedures by designated
23 individuals in Quality Assurance, Design Engineering and
24 Construction. These procedures are distributed in a controlled
25 manner, as previously described, which assures that up-to-date
26 copies are available. Instructions and drawings produced by
27 Design Engineering, Construction, and Quality Assurance are
28 controlled in accordance with quality assurance procedures. QA

1 Program procedures require the appropriate review and approval of
2 these documents as well as appropriate distribution control.

3 Q. HOW DOES THE QA PROGRAM SATISFY THE APPENDIX B
4 CRITERIA WITH RESPECT TO MAINTENANCE OF SUFFICIENT
5 QUALITY ASSURANCE RECORDS?

6 A. The Quality Assurance Department has overall responsibility for
7 maintenance of quality assurance records, and procedures have
8 been established to control the review and storage of all quality
9 assurance records. These procedures include the administrative
10 control of records as well as physical storage requirements. Record
11 storage facilities are constructed, located, and secured in
12 accordance with ANSI Standard N45.2.9. Each quality assurance
13 record has a designated retention period.

14 Q. HOW DOES THE QA PROGRAM SATISFY THE APPENDIX B
15 CRITERIA WITH RESPECT TO PLANNED, PERIODIC AUDITS TO
16 VERIFY THE QUALITY ASSURANCE PROGRAM?

17 A. The Managers of the Quality Assurance Department's Projects,
18 Technical Services, Operations and Vendor Divisions are responsible
19 for surveillance of activities under the cognizance of their
20 respective divisions. The Manager of the Audits Division is
21 responsible for audits of all departments performing nuclear safety
22 related work. The Executive Vice President-Engineering and
23 Construction is responsible for the Corporate Audit performed of
24 the Quality Assurance Department.

25 Personnel performing audits are not responsible for the work
26 in the area being audited. The surveillance activities consist of
27 checking documents, records and work in progress to determine
28 that the Quality Assurance procedures are being properly

1 implemented. These surveillance groups develop and maintain
2 schedules for periodic surveillances and review each new Quality
3 Assurance procedure within three months of its effective date to
4 determine its effective implementation. Copies of surveillance
5 reports with deficiencies are provided to the appropriate Quality
6 Assurance Division Manager and to management responsible for the
7 area subject to surveillance. Action taken to correct deficiencies is
8 reviewed by the Quality Assurance Department.

9 The QA Manager of the Audits Division is responsible for
10 conducting the independent audits of the Quality Assurance Program
11 implementation. Each audit team has a lead auditor who directs the
12 audit team in developing check lists, instructions or plans and
13 directs the team while performing the audit. Each audit is
14 thoroughly documented in a report which sets forth identified
15 discrepancies. The report is reviewed by responsible management
16 of the area audited who must respond in writing within thirty days
17 indicating action that will be taken to correct discrepancies,
18 including the date when the action will be complete. The response
19 is reviewed by the Audit Division to determine if it is adequate. A
20 re-audit of corrective action may be conducted. The Audit Division
21 maintains files of audits, including documentation concerning
22 completion of corrective action.

23 The Executive Vice President, Engineering and Construction,
24 Mr. Owen, directs an independent audit of the Quality Assurance
25 Department at least annually. The Executive Vice President
26 appoints the audit team which consists of at least three qualified
27 individuals who do not work within the Quality Assurance
28 Department. Duke Power Company is currently a member of the

1 Joint Utilities Management Audit Group (JUMA). Through JUMA,
2 Quality Assurance personnel from other utilities are available to
3 form the audit team for the Corporate Audit. This team conducts
4 the audit in the same manner that internal audits are conducted by
5 the Audit Division of the Quality Assurance Department. These
6 corporate audits are conducted in accordance with approved
7 checklists, and reports are generated and submitted to the
8 Executive Vice President. The Executive Vice President then
9 assigns appropriate individuals to determine needed corrective
10 action and reviews the results of this corrective action. All
11 correspondence, checklists and reports related to the Corporate
12 Audit are maintained in the Quality Assurance files.

13 Q. HOW DOES THE QA PROGRAM SATISFY THE APPENDIX B
14 REQUIREMENT OF INDEPENDENCE FROM SCHEDULE AND
15 CONSTRUCTION PRESSURES?

16 A. The Quality Assurance Department is responsible for all quality
17 assurance activities related to Duke's nuclear stations. The
18 department is directed by the Corporate Quality Assurance Manager
19 who reports to Mr. Owen, the Executive Vice President,
20 Engineering and Construction. The Corporate Quality Assurance
21 Manager reports to the same executive level as the Vice Presidents
22 of Design Engineering and Construction. Mr. Owen has given the
23 Corporate Quality Assurance Manager the freedom and independence
24 to implement the Quality Assurance Program without constraining
25 influence in regards to schedules and costs. Personnel within the
26 Construction Department and Design Engineering Department clearly
27 understand the Quality Assurance Department's independent role.
28 Working relationships between Quality Assurance and Construction

1 and Design Engineering are built on this principal of independence.
2 Mutual awareness of this principal allows smooth working
3 relationships between the departments, while still allowing Quality
4 Assurance to make decisions independent of schedules and cost
5 without any improper pressure being exerted by Construction or
6 Design Engineering personnel.

7 Q. ARE THERE ANY MANUALS OR PUBLICATIONS WHICH IMPLEMENT
8 THE DESIGN AND CONSTRUCTION PHASE OF THE QA PROGRAM?

9 A. Yes. These manuals are the Duke Power Company Topical Report
10 for Quality Assurance, DUKE-1A, the Design Engineering
11 Department Quality Assurance Manual, the Construction Department
12 Quality Assurance Manual, Quality Assurance Department Quality
13 Assurance Manual, Quality Assurance Department NDE Program
14 Manual, and the Quality Assurance Manual for ASME Code Work.

15 Q. DESCRIBE HOW EACH OF THESE MANUALS IS USED TO
16 IMPLEMENT THE QA PROGRAM.

17 A. The Topical Report provides a detailed organizational description of
18 those individuals and groups involved in carrying out activities
19 required by the Quality Assurance Program. It also delineates the
20 duties, responsibilities and authority of those organizational units.
21 The Topical describes the measures used to carry out the Duke
22 Power Company Quality Assurance Program and describes how
23 applicable requirements of Appendix B are satisfied by the
24 administration and implementation of the program described. This
25 program was first submitted to the NRC in March 1974 and has been
26 approved as each subsequent amendment has been filed. The latest
27 amendment, No. 6, was approved by the NRC on February 3, 1983.

- 1 • establishes the method of collection and storage of design
2 quality assurance records.

3 The Duke Power Company Construction Department Quality
4 Assurance Manual (Construction QA Manual) contains the procedures
5 which govern the quality assurance aspects of the construction
6 process. The Construction QA Manual establishes:

- 7 • requirements for the preparation, approval, revision and
8 control of construction quality assurance program procedures;
- 9 • provides procedural requirements for auditing the vendors
10 supplying materials and services to the field and for the
11 control of the procurement process and procurement
12 documents;
- 13 • describes methods of preparing and obtaining approval of
14 installation procedures prepared in the field, describes how
15 hold points are specified, and describes the requirements for
16 documentation of process control instructions;
- 17 • contains procedures that assure that only current and
18 properly released drawings, specifications, procedures manuals
19 and supplements are used by craftsmen, engineers and
20 inspectors;
- 21 • establishes the requirements for the control and
22 identification of materials and components used in the
23 construction of structures and systems;
- 24 • establishes the certification program for personnel
25 performing special processes such as welding and mechanical
26 splicing of reinforcing steel;

1 • establishes the requirements for controlling special
2 processes such as welding, heat treating, non-destructive
3 examination and cleaning;
4 • establishes requirements for inspection of site work to
5 assure conformance with applicable designs, codes, standards
6 and specifications;
7 • establishes the requirements for conducting and
8 documenting the tests of systems and structures during
9 construction;
10 • establishes the requirements for the calibration of
11 measurement and test equipment used in construction activities
12 and for the documentation of those calibration activities;
13 • establishes the methods for receipt inspection, proper
14 storage and field issue of equipment and materials which affect
15 quality;
16 • establishes methods for identification, documentation and
17 resolution of items that do not conform to specifications,
18 drawings or procedures;
19 • establishes the methods to stop any work that is creating
20 a condition adverse to quality, establishes procedures to
21 correct a condition adverse to quality, and also establishes the
22 method for controlling and permitting variations to design
23 drawings and specifications; and,
24 • defines the methods for establishing system or structure
25 boundaries, tabulating items within these boundaries,
26 accumulating and filing QA documentation and for transferring
27 systems or structures from the Construction Department to the
28 Nuclear Production Department.

1 The Quality Assurance Department Quality Assurance Manual
2 (QA Department Manual):

3 • establishes the requirements for the preparation,
4 approval, and control of quality assurance procedures,
5 establishes training and qualification requirements for
6 department personnel, training requirements for auditors,
7 training, and certification requirements for inspectors,
8 requirements for trend analysis, and requirements for
9 regulatory reporting;

10 • establishes the requirements for the department
11 independent audit program;

12 • establishes the requirements for review of specifications
13 and procurement records and for surveillance of the
14 Engineering Department activities;

15 • establishes the requirements for surveillance of Operations
16 Division activities and Nuclear Production Department
17 activities, includes procedures for the review of station
18 procedures, quality assurance and quality control records,
19 inspection procedures, procurement documents and station
20 modifications; and,

21 • establishes the requirements for evaluation of vendors,
22 including the requirements for audits and surveillance of
23 vendors, and for the approved vendors list.

24 The Quality Assurance Department NDE Program Manual
25 establishes the requirements for qualification and training of NDE
26 inspectors. It also provides procedures and acceptance criteria for
27 non-destructive examination.

1 The Duke Power Company Quality Assurance Manual for ASME
2 Code Work contains those specific requirements which implement the
3 quality assurance program requirements of the ASME Boiler and
4 Pressure Code Section III.

5 Q. DESCRIBE THE EVALUATIONS OR AUDITS PERFORMED ON THE
6 DUKE QA PROGRAM BY ANY INTERNAL OR EXTERNAL GROUPS?

7 A. There are a number of different internal and external groups which
8 perform audits of the Quality Assurance Program. Surveillance
9 activities are conducted by the Technical Services Group, primarily
10 directed at the Design Engineering Department Quality Assurance
11 activities. The Operations Division and Projects Division conduct
12 surveillances of QA Program activities carried out by Quality
13 Assurance, Construction, and the Nuclear Production Department.
14 These surveillances are documented and any discrepancies are
15 reported to the appropriate management for corrective action.

16 The Audits Division of the Quality Assurance Department
17 conducts audits of all groups within Duke Power Company who
18 perform activities covered by the Quality Assurance Program.
19 These audits are conducted by qualified lead auditors using
20 prepared checklists. The audit reports are distributed to the
21 appropriate levels of management for any necessary corrective
22 action. The corrective action proposed is reviewed by the Audits
23 Division then follow-up audits are conducted to assure that all
24 discrepancies have been properly resolved.

25 An independent Corporate Quality Assurance Audit is
26 conducted at least annually by members of other quality assurance
27 organizations and utilities which are part of the Joint Utilities
28 Management Audit Group. These audits are conducted at the

1 direction of the Executive Vice President Engineering and
2 Construction, who reviews these audit reports. The Institute for
3 Nuclear Power Operations (INPO) will also be conducting
4 independent evaluations of the construction and design of the
5 Catawba Nuclear Station. This evaluation will include aspects of
6 the Quality Assurance Program. In October of 1982 a team of
7 personnel from Duke Power Company and the Tennessee Valley
8 Authority conducted a self-initiated evaluation using INPO criteria.

9 Duke Power Company is authorized to design and construct
10 nuclear power plant components under the authorization of the
11 American Society of Mechanical Engineers. This requires that the
12 American Society of Mechanical Engineers conduct a survey of the
13 activities governed by the Duke Power Company Quality Assurance
14 Manual for ASME Code work. These surveys are conducted at least
15 every three years. Resident Authorized Nuclear Inspectors (ANIs)
16 who are employees of the Hartford Steam Boiler and Insurance
17 Company are on the Catawba site and constantly audit the
18 implementation of the Quality Assurance Program as it relates to
19 ASME Section III activities. In addition, there are resident NRC
20 inspectors at Catawba who review the implementation of the QA
21 program. The efforts of the NRC resident inspectors are
22 frequently supplemented by inspectors from the regional office.
23 Discrepancies discovered by any of these methods of audit are
24 promptly reviewed by appropriate levels of management and
25 corrective action plans are developed. These plans include dates
26 for the implementation of the corrective action.

1 Q. HAVE ANY OF THESE INTERNAL OR EXTERNAL AUDITS
2 CONCLUDED THAT THE QA PROGRAMS AT THE CATAWBA SITE
3 SUFFERED FROM SYSTEMATIC DEFICIENCIES OR SUFFERED A
4 PROCEDURAL BREAKDOWN WHICH MIGHT ADVERSELY AFFECT
5 THE IMPLEMENTATION OF THE QA PROGRAM?

6 A. Many of these audits have pointed out areas where quality
7 assurance procedures are not being properly implemented and did
8 not contain requirements which were clear and precise enough. In
9 previous positions I have held, I have been well aware of the
10 results of audits and evaluations of the Quality Assurance Program.
11 This program is of such a large scope and detailed nature that it is
12 not unusual to find deficiencies in program content and
13 implementation. It has been my experience with Duke Power
14 Company that these deficiencies have been of a nature that could be
15 corrected without major changes to the program. I am not aware of
16 any audit that has indicated a breakdown of the QA Program of the
17 nature that would preclude the program working to assure that our
18 plants are safely built and operated. These audits and evaluations
19 have served to strengthen the QA program. In all cases the
20 appropriate management personnel have reviewed the discrepancies
21 and developed corrective action plans. This corrective action has
22 been properly carried out and has included the consideration for
23 needed corrective action on previously completed work and on work
24 locations other than the nuclear station where the discrepancy was
25 discovered. Many of these discrepancies have been identified by

1 Quality Assurance personnel in the course of implementing the QA
2 Program. Rather than demonstrating a breakdown of the program
3 this, in fact, demonstrates that the program is working.

4 Q. ARE YOU FAMILIAR WITH THE 1981 SALP REPORT?

5 A. I have seen the report. This report covers the periods of
6 construction of Catawba from September 1979 through August of
7 1980. During that period of time I was assigned to the
8 Construction Department at the McGuire Nuclear Station and after
9 May of 1980 as Planning Manager of the Catawba Nuclear Station.
10 In those roles I was not specifically involved with the Quality
11 Assurance activities at the Catawba Nuclear Station.

12 Q. THE SALP REPORT RATES THE CATAWBA PROJECT "BELOW
13 AVERAGE", BASES IN PART ON CRITICISM OF THE QA PROGRAM.
14 IN YOUR VIEW, DOES THIS SALP REPORT INDICATE THAT THERE
15 ARE SIGNIFICANT OR SYSTEMATIC DEFICIENCIES IN THE DESIGN
16 OR CONSTRUCTION OF CATAWBA?

17 A. No. My understanding of the way the NRC produced the SALP
18 Report in 1981 was to consider an unweighted numeration of
19 deficiencies. This system gave little credit of the volume of work
20 being done. It is also relevant that as each deficiency had been
21 presented to Duke by the NRC, the deficiency had been
22 satisfactorily investigated and corrective action performed. The
23 NRC followed up on inspection of this corrective action and was
24 satisfied with the action in every case.

25 Q. DOES IT INDICATE THAT THERE ARE SIGNIFICANT OR
26 SYSTEMATIC DEFICIENCIES IN THE QA PROGRAM?

1 A. No. In the course of the design or construction of Catawba, each
2 deficiency was addressed at the time issued and was cleared to the
3 satisfaction of both Duke Power Company and the NRC.

4 Q. WHAT IS THE BASIS FOR YOUR VIEW THAT THE SALP REPORT
5 DOES NOT INDICATE THAT THERE ARE SYSTEMATIC
6 DEFICIENCIES IN DESIGN AND CONSTRUCTION OR IN THE QA
7 PROGRAM?

8 A. My view is based on the fact that as deficiencies were presented
9 they were cleared to the satisfaction of Duke Power Company and
10 the NRC. Subsequent SALP Reports have not rated the Catawba
11 Nuclear Station below average. In fact, the 1983 SALP gives the
12 Quality Assurance Program the highest rating.

13 Q. ARE YOU FAMILIAR WITH THE ACTIONS TAKEN BY DUKE POWER
14 IN RESPONSE TO THE VIOLATIONS THAT WERE THE BASIS FOR
15 THE SALP EVALUATION?

16 A. I know that in every case the violations were answered when
17 presented. After the SALP report was issued this was reverified to
18 the satisfaction of Duke Power Management. In every case as the
19 violation was presented to Duke Power Company by the NRC
20 corrective action plans were sent to the NRC and after corrective
21 action had been taken the NRC re-examined the area and closed the
22 issue. Thus, the violations were resolved to the satisfaction of
23 both Duke Power Company and the NRC.

24 Q. ARE THERE QA PROCEDURES UNDER WHICH EMPLOYEES MAY
25 RAISE CONCERNS OR OBTAIN MANAGEMENT REVIEW OF
26 DECISIONS THEY DISAGREE WITH?

1 A. Yes, we have procedures in place in the QA Department to enable
2 employees to raise concerns of any kind, and obtain management
3 review of decisions they disagree with. The philosophy of the
4 Quality Assurance Department is that employee concerns should
5 receive thorough consideration and be addressed promptly. The
6 first step in addressing an employee concern is usually discussion
7 between the employee and his supervisor. We encourage that
8 discussion, but recognize that it will not always resolve the
9 employee's concerns. Therefore, a number of management
10 procedures have been developed to allow the employee access to all
11 levels of management within the Company to resolve his concerns.

12 In May of 1979, a company procedure covering employee
13 recourse was implemented. This procedure allowed an employee to
14 express concerns through successive levels of management to the
15 President of Duke Power Company. In July of 1982 a supplementing
16 recourse procedure was developed for Quality Assurance personnel.

17 In February 1981 the company implemented a management
18 procedure dealing with harassment of employees. This new
19 procedure indicated how an employee should report incidents which
20 he believed to be harassment, and set forth how the facts would be
21 investigated. In July 1982 the Quality Assurance department
22 implemented a supplementing procedure. The harassment procedure
23 could be invoked by an inspector or any employee, who was fearful
24 of carrying out his duties. The Quality Assurance Procedure
25 outlines the investigation process that will be used when harassment
26 is reported or suspected. It also contains disciplinary actions
27 which will be taken if prohibited conduct has occurred. Depending

1 on the severity of the conduct amounting to harassment, there are
2 progressive levels of discipline, up to and including dismissal.
3 There are times when arguments between employees are investigated
4 under the harassment procedure. Arguments, which at times, could
5 become very heated are not within the scope of the harassment
6 procedure. However, the Quality Assurance Department does not
7 condone arguments and pursues the investigation to determine the
8 best way to prevent the situation from happening again in the
9 future. We urge employees to use these avenues of recourse if
10 their concerns are not resolved with their supervision and will
11 assist an employee who desires to carry his concerns to levels of
12 management above the Quality Assurance Department.

13 The Construction Department instituted a "Harassment
14 Procedure" in September 1980. This procedure is very similar to
15 the one adopted by the QA Department in 1982. Since the Quality
16 Control Inspectors were part of the Construction Department in 1980
17 this construction procedure applied to them. Prior to that time
18 there was no specific harassment procedure which applied to the QC
19 inspectors. The Construction Department had issued "Rules of
20 Conduct" in 1977 which spelled out actions and activities that were
21 not acceptable, including harassment.

22 Q. WHAT RECOURSE PROCESS WAS AVAILABLE TO INSPECTORS
23 PRIOR TO IMPLEMENTATION OF THE 1979 COMPANY RECOURSE
24 PROCEDURE?

25 A. In 1977 the unwritten policy of recourse without reprisal was put in
26 writing in the Construction Department Personnel Policy and
27 Practices Manual. At that time, QC inspectors were in the

1 Construction Department. Each supervisor was provided with a
2 copy of this manual which was available for referencing use by his
3 crew. Since the quality control inspectors were members of the
4 Construction Department during this period this manual applied to
5 them. The Employee Relations Section of this manual contained the
6 procedure for informal and formal pursuit of concerns and
7 disagreements that an employee may have. The informal approach
8 directed supervisors to make every effort to hear employees
9 promptly and attempt to clear up any misunderstandings that might
10 have arisen. If a discussion with the supervisor did not promptly
11 resolve the problem the employee could pursue it to a higher level
12 of supervision. If the problem was not resolved to the employee's
13 satisfaction by that approach he could ask the Project Employee
14 Relations Supervisor to help with a resolution to the problem. If
15 resolution was not reached to the employee's satisfaction by that
16 informal approach the employee could use a formal procedure which
17 included the provision to submit in writing the concerns to the
18 Project Manager who would render a decision within 15 days. If
19 the employee was not satisfied with the decision at that step the
20 complaint would be referred to the Vice President of Construction
21 for final determination and a decision would be given to the
22 employee in writing within 30 days after receipt of the complaint.

23 Q. WHAT IS THE QUALITY ASSURANCE DEPARTMENT'S POLICY AND
24 PRACTICE WITH RESPECT TO EMPLOYEE'S ACCESS TO THE NRC
25 TO EXPRESS CONCERNS OR RAISE TECHNICAL QUESTIONS.

26 A. It has always been Duke Power's policy that all personnel have
27 access to the NRC. In April 1977, R. L. Dick, Vice President of
28 Construction, posted a notice on bulletin boards which indicated

1 that Duke Power Company expected employees to express any
2 concerns they might have about the quality of work to their
3 supervisors and any level of company management. In addition, the
4 notice directed any employee who has concerns or questions about
5 the nuclear safety of any facility to bring those matters to the
6 attention of the NRC inspector or the nearest NRC Regional Office
7 if the concerns could not be resolved directly with the company.
8 In addition, NRC Form-3 is posted at prominent locations
9 throughout the project.

10 The offices of the NRC Resident Inspector on site are clearly
11 marked and are easily accessible to employees. The office is
12 adjacent to the Unit II turbine building and can be entered from
13 the construction yard without first going through any company
14 reception.

15 In July 1981, the company implemented a Management
16 Procedure entitle "Resolution of Technical Matters Involving
17 Differences of Opinion". The purpose of this procedure is to give
18 due consideration to differing views of employees on technical
19 matters. An employee can direct his concern in writing to his
20 department head, who shall appoint a group of not less than three
21 technically qualified individuals to review the issue. The group
22 shall gather data, review the concerns, and made recommendations
23 leading to a resolution. A written answer will be provided to the
24 questioning employee. If the employee is not satisfied he can take
25 his concern to the Executive Vice President, Engineering and
26 Construction. In July 1982, the Quality Assurance Department
27 implemented a supplementing procedure entitled "QA Department
28 Quality Recourse Procedure". The purpose of this procedure is to

1 give employees within Quality Assurance an avenue to express
2 concerns about quality and technical concerns. This procedure
3 enables an employee to take his technical concerns through
4 successive levels of management within the Quality Assurance
5 Department and if not satisfied, allows recourse to the Executive
6 Vice President.

7 Q. DESCRIBE WHAT AN INSPECTOR DOES WHEN HE IDENTIFIES
8 WORKMANSHIP THAT DOES NOT CONFORM TO DUKE POWER QA
9 PROCEDURES.

10 A. If during a preplanned inspection an inspector finds workmanship
11 that does not conform to standards he withholds his acceptance of
12 that workmanship. If the discrepancy is minor and can be readily
13 corrected he may inform a craftsmen or a craft supervisor of the
14 discrepancy. After the craftsman corrects the discrepancy the
15 inspector reinspects the workmanship, and if acceptable, the
16 inspector accepts the workmanship and documents his acceptance in
17 accordance with the procedure he is using for the inspection.

18 Some procedures have forms that contain both accept and
19 reject sign-off points. In this case, an inspector can use the
20 reject block to identify workmanship that doesn't conform to
21 required acceptance standards. Some procedures contain separate
22 discrepancy report forms which the inspector can use to record
23 discrepancies.

24 Quality Assurance Procedure R-2, Identification and Resolution
25 of Discrepancies, is used to identify discrepancies where governing
26 procedures do not offer a means to correct the problem. In this
27 case the inspector will document the discrepancy on Form R-2A, the
28 discrepancy report.

1 In situations where an inspector discovers unacceptable
2 workmanship at times other than during preplanned inspection, and
3 when no other inspection is planned which would identify the
4 discrepancy, then procedure Q-1, Control of Non-Conforming Items,
5 would be used to document the discrepancy.

6 In every situation I have described, after the discrepancy has
7 been corrected a reinspection will be performed to assure that the
8 work conforms to required standards.

9 Q. DESCRIBE THE ROLE OF QC AND QA SUPERVISION IN THE
10 RESOLUTION OF NONCONFORMING ITEMS.

11 A. After the inspector has completed the description of the
12 non-conforming item and has obtained a serial number, he will
13 present the non-conforming item report to a designated QA
14 Engineering Supervisor. This individual will review the information
15 to be sure that the item is non-conforming, based on applicable
16 procedures and therefore, requires processing under the Procedure
17 Q-1. If the NCI is determined to be unnecessary or improperly
18 initiated, the reason shall be explained on the report and a copy
19 provided to the inspector. The NCI is filed in the Quality
20 Assurance Reports files.

21 In the past, Quality Assurance Procedure Q-1 did not require
22 that unnecessary non-conforming reports be retained.
23 Nevertheless, the review was done by supervision in the same
24 manner as now required.

25 Q. IS THERE ANYTHING IMPROPER OR INCONSISTENT WITH A
26 SOUND QUALITY ASSURANCE PROGRAM FOR A SUPERVISOR TO

1 REVIEW AN NCI WRITTEN BY AN INSPECTOR AND VOID THE NCI
2 BECAUSE IN THE SUPERVISOR'S JUDGEMENT, THE NCI SHOULD
3 NOT HAVE BEEN WRITTEN?

4 A. There is no inconsistency with a sound QA Program for a
5 supervisor to void an NCI that, in his judgment, is improperly
6 initiated. It is the role of a supervisor to interpret the quality
7 assurance procedures and make judgements in regards to acceptance
8 criteria. Prior to clarification of the use of non-conforming items in
9 1982, non-conforming item reports were at times used to ask
10 questions in regards to the acceptability of workmanship. For
11 example, there are times when the acceptance criteria is not clear
12 in its application to some specific workmanship. There have been
13 cases where the inspectors have used a non-conforming item report
14 to obtain the necessary clarification, rather than pursue the
15 question through the proper organizational contacts. This is an
16 improper use of the non-conforming item report. At times
17 supervision would determine that these NCI's should not have been
18 written; at other times NCI's were written by inspectors who
19 misinterpreted the intent of procedures. In these cases supervision
20 was carrying out their responsibility in determining that NCI's
21 should not be written. They were using their judgement to
22 determine the proper intent of quality assurance procedures. Due
23 to the general nature of some code acceptance requirements, Quality
24 Assurance procedures are written in a conservative manner. This
25 generally results in Quality Assurance procedure acceptance criteria
26 which exceeds code acceptance criteria. This is particularly true
27 when code acceptance criteria are not numerical in nature. These
28 are generally the areas where supervision must exercise the

1 responsibility to interpret the intent of acceptance criteria as
2 reflected in Quality Assurance procedures. Audits conducted by
3 the Audit Division of the Quality Assurance Department determine if
4 quality assurance procedures are being correctly implemented. This
5 serves as a check to determine if supervisors are directing the
6 proper implementation of procedures.

7 Q. WHAT OPTIONS ARE AVAILABLE TO A WELDING INSPECTOR WHO
8 BELIEVES THAT A SUPERVISOR HAS MADE AN INCORRECT
9 JUDGEMENT IN INSTRUCTING HIM TO VOID AN NCI?

10 A. The Welding Inspector's first step is to discuss the matter with his
11 supervisor and explain to his supervisor why he believes that
12 supervision has made an incorrect judgement. The supervisor
13 should then discuss the matter with his supervision and determine
14 if the judgement is correct. The outcome of this discussion is
15 discussed with the inspector. If this means of resolving the issue
16 is not successful the inspector should then use the Quality
17 Assurance Procedure for Quality Recourses. This will allow the
18 disagreement to be put in writing and answers to be developed and
19 documented.

20 If the matter is not resolved prior to its reaching the
21 Corporate Quality Assurance Manager as outlined in the Recourse
22 procedure, then a review team of at least three qualified individuals
23 will be named by the Corporate Quality Assurance Manager. This
24 team will thoroughly investigate the problem and document the
25 results, which will be discussed with the inspector. If this does
26 not resolve the issue then the inspector can take his concern to the
27 Executive Vice President for final resolution. If this pursuit of

1 technical recourse through the company is not successful the
2 inspector should take the matter to the resident NRC Inspector or
3 call the Regional Office.

4 Q. HAVE YOU BEEN INVOLVED IN THE PROCESS WHICH SETS THE
5 PAY CLASSIFICATION FOR INSPECTORS?

6 A. Yes. I was on a Non-Exempt Evaluation Team formed in 1977 to do
7 the initial evaluation of all non-craft non-exempt jobs in the
8 Construction Department. This included the inspectors who at that
9 time were part of the Construction Department. I was also on a
10 Non-Exempt Evaluation Team formed in 1980 which reviewed the
11 evaluation of certain construction jobs including certain inspection
12 jobs.

13 Q. DESCRIBE WHAT HAS OCCURRED OVER THE YEARS WITH
14 RESPECT TO THE PAY CLASSIFICATION OF WELDING INSPECTORS

15 A. Prior to February 1980 when a formal Construction Department
16 Non-Craft Wage Program was established, the wage rates for
17 specific inspection classifications were determined by site
18 management. In February of 1980, a Non-Craft Non-Exempt Pay
19 Program was implemented with pay ranges based on the evaluation
20 of jobs using the Hay Associates evaluation method. When this
21 program was implemented the welding inspectors pay was set at pay
22 grade 11. In 1980 a new Non-Exempt Evaluation Committee was
23 formed. This committee evaluated new and revised jobs using the
24 Hay Associates method. In the summer of 1980, the committee
25 reviewed and evaluated a revised position analysis for welding
26 inspectors. This review determined that both the know-how points
27 and the problem solving points should be reduced. The know-how
28 points were reduced because of the position analysis no longer

1 required that a welding inspector have at least two years of prior
2 welding or welding inspection experience. The problem solving
3 points were reduced because the team determined that the thinking
4 challenge should be designated as selective memory rather than
5 interpolative. This is consistent with an inspector's role which
6 requires that solutions to problems be bounded by the limits of the
7 procedures which govern the inspector's actions. This doesn't
8 allow the inspectors to search out new solutions to problems. The
9 rating established for welding inspectors in 1977 was 320 points.
10 The 1980 rating for the Welding Inspector A position was 281
11 points. This re-evaluation resulted in the movement in the pay
12 grade for Welding Inspectors from Grade 11 to Grade 10. There
13 were other jobs in the Quality Assurance Department which were
14 affected by this evaluation process. The Film Reader position was
15 reevaluated from 341 points to 299 points. This resulted in a pay
16 grade reduction from Grade 12 to Grade 11. The Mechanical
17 Inspector A position was reevaluated from 225 points to 262 points,
18 which resulted in a pay grade increase from Grade 9 to Grade 10.
19 The Electrical Inspector A position was reevaluated from 228 points
20 to 262 points, which resulted in a pay grade increase from Grade 9
21 to Grade 10. These changes in pay grade were implemented at the
22 time of the July 1981 general salary increase. At that time welding
23 inspectors, and film readers received one-half the general increase
24 to begin the process of moving their compensation to the proper
25 grade. This process was completed after the general salary
26 increase of 1982.

1 Q. DID THE CHANGE IN THE REQUIREMENT FOR TWO YEARS
2 WELDING OR WELDING INSPECTION EXPERIENCE FOR WELDING
3 INSPECTORS RESULT IN LESS QUALIFIED WELDING INSPECTORS?
4 A. No. The training, qualification, and certification requirements
5 remained the same.
6 Q. WHEN DID YOU FIRST BECOME AWARE OF THE QUALITY OR
7 SAFETY CONCERNS EXPRESSED BY WELDING INSPECTORS AT
8 CATAWBA?
9 A. I believe I first became aware of those concerns in January of 1982
10 at a staff meeting conducted by R. L. Dick. At that time I was on
11 Mr. Dick's staff as Manager of the Oconee Station Support Division.
12 I believe that in the course of a staff meeting there was some
13 discussion of concerns being expressed by welding inspectors at
14 Catawba.

PART II

1

2 Q. WERE YOU INVOLVED IN THE MANAGEMENT DECISIONS TO
3 INITIATE THE VARIOUS TASK FORCE INVESTIGATIONS?

4 A. The only task force that I was involved with at the initiation stage
5 was the Non-Technical Task Force.

6 Q. DESCRIBE YOUR INVOLVEMENT WITH THE INITIAL TASK FORCE,
7 WHAT IS NOW REFERRED TO AS TASK FORCE I.

8 A. I was not involved with members of the initial task force as they
9 carried out their duties. This task force completed its work in
10 December 1981, prior to my transfer to the Quality Assurance
11 Department.

12 Q. DESCRIBE YOUR INVOLVEMENT WITH THE TECHNICAL TASK
13 FORCE.

14 A. My initial involvement was to assure that a good working interface
15 was established between the task force and personnel within the
16 Quality Assurance Department. After the task force determined its
17 course of action I was involved with Parks Cobb, the Task Force
18 Leader, in meetings with welding inspectors and other supervision
19 at Catawba Quality Assurance to present the planned course of
20 action that the task force would undertake.

21 Q. DESCRIBE YOUR INVOLVEMENT WITH LEWIS ZWISSLER OF
22 MANAGEMENT ANALYSIS COMPANY.

23 A. As Lewis Zwissler carried out his duties of independently monitoring
24 the work of the Technical Task Force, he reviewed the status of
25 his investigation with me. I made sure that Mr. Zwissler had free
26 access to all individuals within the Quality Assurance Department in
27 order to allow him to conduct his investigation in a thorough and
28 proper manner. Mr. Zwissler made some recommendations during

1 the period of his investigation. For example, he recommended that
2 we approve a procedure which would allow prompt changes to
3 Quality Assurance Procedures where the intent of the procedure is
4 unclear. He based this recommendation on interviews he conducted
5 with inspectors and supervisors, having determined that our
6 inability to make changes to procedures promptly or expeditiously
7 was causing inspectors problems in the field. As a result of that
8 recommendation by Mr. Zwissler, we approved a Quality Assurance
9 Procedure that allows the Corporate Quality Assurance Manager to
10 make a supplemental change to Quality Assurance Procedures very
11 quickly.

12 After the Management Implementation Plan had been developed
13 and we had substantially completed implementation of the Technical
14 Task Force recommendation, I requested that Mr. Zwissler review
15 our implementation efforts. Mr. Zwissler reviewed our work and
16 submitted a brief report in August of 1982. This report contained
17 recommendations which were considered for follow up.

18 Q. DESCRIBE YOUR INVOLVEMENT WITH THE NONTECHNICAL TASK
19 FORCE.

20 A. After the Technical Task Force determined that some concerns were
21 of an administrative nature, I determined that someone with a
22 personnel administration background would be better suited to
23 investigate those concerns. I asked C. N. Alexander, who at that
24 time was Personnel Manager for the Mount Holly Station Support
25 Division of the Construction Department, and D. L. Powell who was
26 the Supervisor of Employee Relations for the Construction
27 Department at the Catawba Nuclear Station, to serve as a Task
28 Force to investigate the non-technical concerns of welding

1 inspectors. This task force began its work early in February of
2 1982.

3 Q. HOW WERE THE NON-TECHNICAL CONCERNS DISTINGUISHED
4 FROM THE TECHNICAL CONCERNS?

5 A. The members of the non-technical task force reviewed the concerns
6 -written by the inspectors. Any concerns expressed that were
7 not tied to a piece of physical work in the plant, the resolution of
8 an NCI, or the implementation of a QA procedure were considered
9 to be non-technical. Some specific concerns were dealt with
10 individually, while most non-technical concerns were placed in one
11 of several general categories.

12 Q. WERE YOU INVOLVED IN THE IMPLEMENTATION OF
13 RECOMMENDATION ISSUES BY ANY OF THE TASK FORCES?

14 A. Yes. I was involved in the implementation of recommendations of
15 the Technical Task Force and the Non-Technical Task Force.

16 Q. DESCRIBE YOUR ROLE IN IMPLEMENTING THE RECOMMENDATION
17 OF THE TECHNICAL TASK FORCE, INCLUDING YOUR ROLE IN
18 THE DEVELOPMENT OF THE MANAGEMENT IMPLEMENTATION PLAN
19 USED TO IMPLEMENT THE RECOMMENDATION OF THE TECHNICAL
20 TASK FORCE.

21 A. After the task force had developed their recommendations, they
22 were submitted to me for my review. A Management Implementation
23 Plan was developed by me and several QA Department Division
24 Managers. A copy of the plan is Attachment 3 to my testimony.
25 This plan included appointment of an Implementation Coordinator
26 and a number of implementation objectives which covered the
27 programmatic and general recommendations of the task force.

1 This implementation plan was reviewed with Mr. Owen and the
2 Vice Presidents of Construction and Design Engineering. Mr. W.
3 H. Bradley was named Plan Implementation Coordinator. He
4 developed a documentation format for each action to be performed.
5 The assignment for each specific action recommendation was placed
6 on a separate documentation sheet. A specific individual in the
7 Quality Assurance Department, Construction Department, or Design
8 Engineering Department was assigned to carry out the action. This
9 individual documented the action that was carried out and submitted
10 it to the responsible Department Head for approval. As Corporate
11 Quality Assurance Manager, I reviewed the action carried out on
12 each of these specific action recommendations. The Implementation
13 Coordinator, Mr. Bradley, verified that each specific action
14 recommendation had, in fact, been implemented. This Management
15 Implementation Plan was communicated to all inspectors who raised
16 concerns and to supervision in the Catawba Quality Assurance
17 organization.

18 Q. DESCRIBE THE IMPLEMENTATION OBJECTIVES DEVELOPED TO
19 IMPLEMENT THE TECHNICAL TASK FORCE RECOMMENDATIONS.

20 A. The Technical Task Force submitted programmatic recommendations
21 in various areas such as process control, welding inspection, NCI
22 resolution, design drawings and material control. There were 15
23 implementation objectives developed to carry out the implementation
24 of these programmatic recommendations. These implementation
25 objectives can be categorized as follows:

26 1. Clarify policy procedures or methods. Examples are:
27 clarify the policy concerning verbal and written instructions and
28 resolution of disagreements; clarify the policy on handling process

1 control discrepancies; and clarify the method of handling NCI's that
2 have resolutions that are questioned.

3 2. Review or verify the adequacy or effectiveness of
4 methods and procedures. Examples are: consider the adequacy of
5 the documentation checking process; assure all marking
6 requirements are valid; and determine the most effective use of
7 workmanship samples.

8 3. Training. Examples are: continued training on proper
9 NCI resolutions; training of QA and QC personnel on the roles of
10 supervisors, inspectors and QA technical support personnel in
11 regards to writing and reviewing NCI's; and training of QC
12 personnel in the roles of supervisors and inspectors in general
13 inspection duties.

14 4. Miscellaneous items. Examples are: assuring that QA
15 supervision is involved in the review of inspection procedure
16 change proposals; and investigation of the standardization of weld
17 symbols in design documents.

18 As previously noted this implementation plan is attached to my
19 testimony as Attachment 3.

20 Q. DESCRIBE THE ACTIONS TAKEN TO IMPLEMENT THESE
21 OBJECTIVES.

22 A. The actions taken can best be summarized by looking at the
23 categories of programmatic recommendations made by the Task
24 Force.

25 In the area of process control, a thorough review of process
26 control procedures and practices was carried out. This review
27 concluded that generally the process control procedures are very
28 adequate and the process is well understood by those individuals

1 responsible for implementing those procedures. Implementation
2 objectives in this area did result in the establishment of periodic
3 meetings between individual disciplines within QA, Crafts and
4 Construction Technical Support for the purpose of reviewing
5 problems in using process control procedures. These meetings are
6 held at least every six months and include inspection supervision.

7 In the area of welding inspection, the implementation objectives
8 resulted in a number of enhancements to our program. A program
9 within the Technical Services Division of Quality Assurance called
10 "Train the Trainer" was implemented. The essence of this program
11 is that the individual with the Technical Services Division
12 responsible for incorporating comments into a proposed QA
13 procedure revision will conduct a training session with supervision
14 who will be implementing the procedure. This training session will
15 cover the intent of the procedure revision. This program has
16 worked very well and allows supervisors to answer many questions
17 their employees have about procedure revisions and procedure
18 intent. We also developed a policy on how questions would be
19 answered by supervisors concerning procedure intent. This
20 included the method of documenting answers received from
21 appropriate individuals in Quality Assurance, Design Engineering or
22 Construction. Workmanship samples had been made up to assist
23 welding inspectors and supervisors in visualizing the acceptance
24 criteria cannot easily be described in words. A video tape, "The
25 Inspector," which explained the roles of supervisors and inspectors
26 in carrying out their duties was produced.

1 In the area of NCI resolutions Procedure Q-1 was revised to
2 make the handling of voided NCI's very clear. This change
3 required the filing of any voided NCI's.

4 In the area of design drawings, training was conducted by
5 Design Engineering to highlight the importance of good drafting
6 techniques to eliminate drawing clarity problems.

7 In the area of material control Quality Assurance Procedures
8 H-4 and H-5 which cover the marking requirements for structural
9 steel and piping materials, were revised to reflect their applicability
10 to QA Condition 1 and QA Condition 4 work only.

11 I have included in my testimony as attachment 4 a complete
12 summary of actions taken on the Technical Task Force Programmatic
13 Recommendations.

14 Q. THE TECHNICAL TASK FORCE IDENTIFIED 24 POTENTIAL
15 TECHNICAL INADEQUACIES. WERE THESE POTENTIAL
16 INADEQUACIES EVALUATED?

17 A. Each of these potential technical inadequacies was investigated in
18 the course of carrying out the specific action recommendations.
19 Welds and other work identified as concerns by welding inspectors
20 were rechecked. In all cases the existing work was found to meet
21 Design Engineering requirements. In one case the initial resolution
22 of a wall thickness concern was resolved by adding weld material.
23 This was done as a cost effective method of resolving the particular
24 concern. Design Engineering later evaluated the concern and
25 determined that the 29/1000 reduction in wall thickness that
26 originally existed would not have been of any nuclear safety or
27 structural significance, and need not have been repaired. The

1 conclusion to each potential technical inadequacy was that no
2 technical inadequacy existed.

3 Q. DESCRIBE THE ACTIONS TAKEN TO IMPLEMENT THE
4 RECOMMENDATIONS OF THE NON-TECHNICAL TASK FORCE.

5 A. Specific action recommendations were carried out by Mr. Neal
6 Alexander, the Non-Technical Task Force Implementation
7 Coordinator and completed in April of 1982.

8 The following actions were taken as a result of general
9 recommendations of the Non-Technical Task Force. In the area of
10 work direction, a video tape, "The Inspector" was produced which
11 explained the role of the inspectors and the supervisors in carrying
12 out their duties. A number of items designed to develop a
13 teamwork spirit in the department were carried out. These
14 included a standardized hardhat color for all Quality Assurance
15 personnel and a department logo which is displayed on the hardhat.
16 A department newsletter was begun, a Quality Circle Program was
17 started, and an Employee Forum Program was started, which allows
18 employees to periodically get together with their second line
19 supervision to discuss any issue that they would care to.

20 In the area of recourse, in July of 1982, departmental
21 procedures supplementing company procedures were implemented to
22 cover administrative recourse, quality recourse and harassment.

23 In the area of qualifications, the video tape described under
24 work direction contained guidance to the inspectors as to the kind
25 of instructions that they can properly give Craft personnel.
26 Finally, in the area of communications, all QA supervisors at
27 Catawba were trained in effective communications skills.

1 Q. HOW WOULD YOU DESCRIBE THE PRIMARY CONCERN OF THE
2 WELDING INSPECTORS?

3 A. I believe that the primary concern of the welding inspectors was
4 their ability to carry out their job correctly as they understood their
5 responsibility. A practice had developed at the Catawba Nuclear
6 Station which involved interpreting Quality Assurance Procedures,
7 as well as other procedures, quite literally. The procedures as
8 written could not cover every specific situation that would arise in
9 the course of inspection activities. This is not an unusual
10 situation. National standards and codes, such as the American
11 Society of Mechanical Engineers Boiler and Pressure Vessel Codes,
12 contain standards that require interpretation. The inspectors were
13 uncomfortable with the interpretations of procedures made by
14 supervision. Management had not done a good job of explaining to
15 supervision the necessity of being very clear when explaining their
16 judgement to inspectors who raised questions. In some cases the
17 supervisor reached his conclusion about a question and instructed
18 the inspector to accept a certain situation. The supervisor did not
19 pursue the matter strongly enough with the inspector to determine
20 if the inspector agreed with the conclusion. In these cases the
21 inspector felt that he was being asked to accept something that he
22 didn't fully agree with. The concerns expressed by the inspectors
23 have allowed us to examine our methods of communicating the intent
24 of procedures to supervisors and inspectors. That interface has
25 been strengthened and communications are being carried on in a
26 more positive manner. The supervisor is now very careful to
27 explain his judgement to the inspector, and in particular not ask an
28 inspector to sign off anything that the inspector does not agree

1 with. If an inspector is not satisfied with his supervisor's
2 judgement the supervisor is to assist the inspector with a resolution
3 of that concern.

4 QA Department management recognizes the potential for conflict
5 between craftsmen and inspectors in the course of carrying out
6 their duties. On occasion there will be disagreements between the
7 inspectors and craftsmen which can result in arguments. We have
8 provided training and guidance to inspectors and QC supervisors on
9 how to handle these kinds of situations. Further training in human
10 relations skills is planned in the future. We do not expect to
11 eliminate the potential for these confrontations, but rather to
12 instruct inspectors and their supervisors on the proper way to
13 handle confrontations when they occur. A key part of this training
14 deals with how an inspector can maintain a firm position and not be
15 drawn into an argument that may result in any intimidating action
16 by the craftsmen or by the inspector.

1 Q. ARE YOU AWARE OF ANY OTHER GENERAL CONCERNS OF THE
2 WELDING INSPECTORS?

3 A. Yes, some of them have alleged that the lack of opportunity for
4 promotion or transfer is a concern.

5 Q. IS THIS A SOUND ALLEGATION?

6 A. No. Promotions in, and transfer out, of the welding inspecting
7 organization have not been very frequent. With respect to
8 promotions, this is because many of the inspectors have been with
9 us for a long time and thus have reached the top of their pay
10 classification. Newer members of the organization progress up the
11 pay scale at a rate similar to inspectors in other areas of the QA
12 Department. Due to Duke's present construction plans, promotional
13 opportunities are very limited. With respect to transfers, present
14 work level essentially precludes making inspectors available for
15 transfer.

16 Q. THE CONCERNS EXPRESSED BY THE WELDING INSPECTOR WERE
17 INITIALLY CHARACTERIZED AS CONCERNS AFFECTING THE
18 QUALITY OF WORK OR THE SAFETY OF THE CATAWBA PLANT.
19 IN YOUR VIEW, DID THE CONCERNS EXPRESSED BY THE WELDING
20 INSPECTORS AFFECT THE QUALITY OR THE SAFETY OF THE
21 CATAWBA PLANT.

22 A. After investigation of the concerns, I can clearly conclude that
23 none of the concerns, in my view, bring into question the quality
24 of construction and the ability of the Catawba Nuclear Station to
25 operate in a safe manner. In each instance where an inspector was
26 concerned with a specific physical characteristic of the plant, the

1 concern was investigated, and it was determined that each physical
2 characteristic fell within the applicable design requirements.

3 Q. IN YOUR VIEW, DID THIS EXPRESSION OF CONCERNS BY THE
4 WELDING INSPECTOR INDICATE THAT THERE WAS A BREAKDOWN
5 IN THE QA PROGRAM AT CATAWBA OR THAT THE QA PROGRAM
6 WAS NO LONGER WORKING AT CATAWBA?

7 A. No. The QA program has continued to work throughout the
8 construction phase of the Catawba Nuclear Station. It is very
9 evident that welding inspectors, as well as other inspectors, have
10 continued to carryout their responsibilities of inspecting designated
11 workmanship to assure that it meets required standards. The
12 concerns did indicate a need to clarify procedures, a need to
13 assure better communications was taking place between supervision
14 and inspectors, and the need to explain more fully answers that
15 were given to inspectors in response to questions that they have
16 raised.

17 Q. DID CONCERNS EXPRESSED BY WELDING INSPECTORS INDICATE
18 COMPANY PRESSURE TO APPROVE FAULTY WORKMANSHIP?

19 A. Concerns expressed by the Welding Inspectors indicate that on
20 occasion they were told to sign-off work which they did not feel
21 fully complied with specifications. We have dealt with this issue
22 and have made it clear to supervisors that they are not to ask any
23 inspectors to sign-off any work which they do not view as totally
24 acceptable. This situation does not indicate any pressure by the
25 company to approve faulty workmanship. All examples of welds and
26 other work sited by inspectors were investigated and no work was
27 found to be faulty. This indicates that supervisors' judgements
28 were correct in directing inspectors to accept certain items. The
29

1 guidance given to supervisors and inspectors should eliminate
2 misunderstandings of this type in the future.

3

4

5

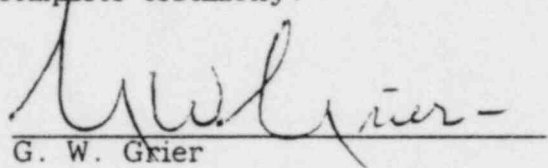
6 I hereby certify that I have read and understand this document, and
7 believe it to be my true, accurate and complete testimony.

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G. W. Grier

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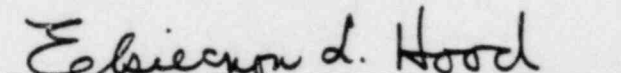
14 Sworn to and subscribed before me
15 this 23 day of September, 1983.

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Notary Public

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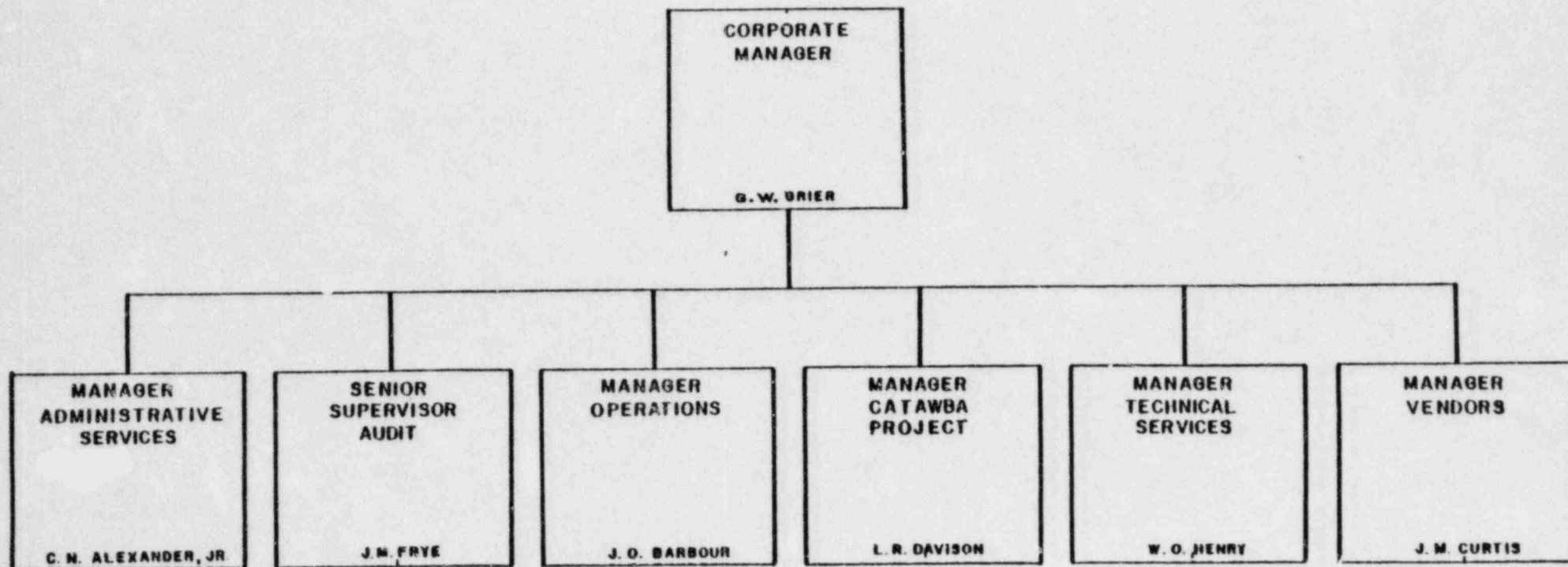
My Commission Expires Sept. 24, 1985

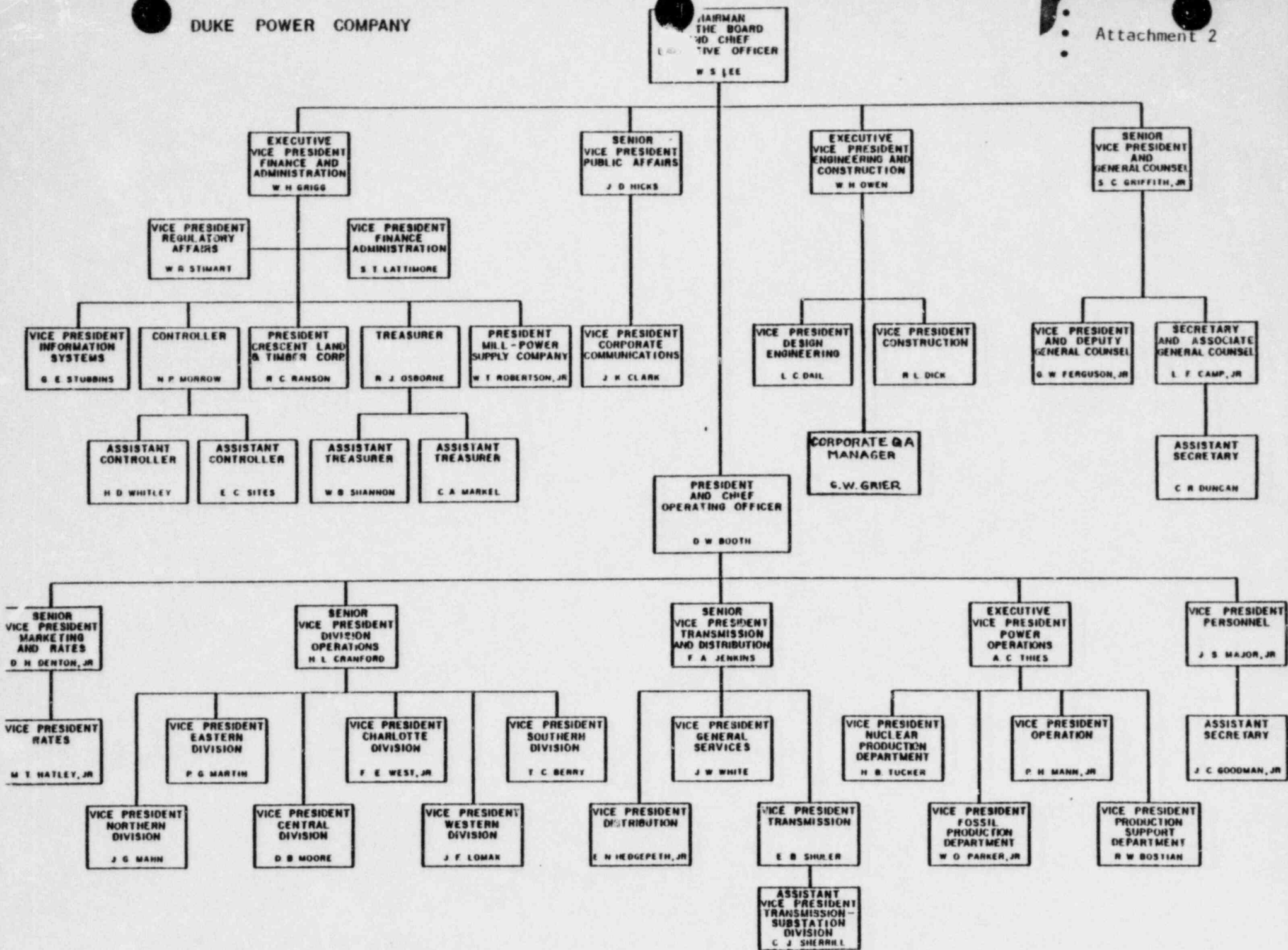
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Commission Expires _____

DUKE POWER COMPANY
QUALITY ASSURANCE DEPARTMENT
ORGANIZATION CHART

Attachment 1





9.0 MANAGEMENT IMPLEMENTATION PLAN

The following implementation steps will be taken:

- (1) Assign an implementation coordinator with the following duties:
 - a. Assure that all specific action recommendations are assigned to appropriate individuals and have target dates for completion.
 - b. Assure that all implementation objectives are assigned to appropriate individuals and have completion dates for finalizing implementation details and for completing action.
 - c. Collect documentation of all implementation action.
- (2) The recommendations of the Task Force are based solely on specific concerns of individuals. Those persons assigned to carry out this implementation plan must be sure that specific recommendations are reviewed for action based on the specific concerns. They must also determine how general and programmatic recommendations relate to needs broader than the individual concern raised.
- (3) General recommendations and programmatic recommendations that are implemented will be based on the following objectives:
 - a. Clarify policy covering:
 1. Verbal instructions and inquiries
 2. Written instruction and inquiries
 3. Resolution of disagreements, including signoff responsibility
 4. Recourse for quality concerns

This objective speaks to Process Control Recommendations no. 1 and no. 5 and Welding Inspection Recommendations no. 2, no. 3 and no. 5.
 - b. Consider adequacy of documentation checking process.

This speaks to Process Control Recommendation no. 2.
 - c. Clarify policy on handling process control discrepancies.

This speaks to Process Control Recommendations no. 2 and no. 5.
 - d. Put in place an appropriate discrepancy tracking and feedback program. Including review sessions for non-NCIR discrepancies.

This speaks to Process Control Recommendations no. 3 and no. 4.
 - e. Continue emphasis in training on proper method of NCI resolutions.

This speaks to NCIR Resolution Recommendations no. 1 and no. 3.
 - f. Train QA and QC personnel on roles of supervisors, inspectors and QA technical support personnel in writing and reviewing NCI's for clarity of statement and validity as well as general inspection duties.

9.0 MANAGEMENT IMPLEMENTATION PLAN (continued)

This speaks to NCIR Resolution Recommendation no. 2 and Welding Inspection no. 6.

- g. Clarify method of handling NCI's that have resolutions that are questioned.

This speaks to NCIR Resolution Recommendation no. 3G.

- h. Assure that QC supervision is involved in inspection procedure change review.

This speaks to Welding Inspection Recommendation no. 1.

- i. Clarify methods for review of inquiry responses for use in training and in procedure review.

This speaks to Welding Inspection Recommendation no. 1 and Material Control Recommendation no. 2.

- j. Determine most effective use of workmanship samples.

This speaks to Welding Inspection Recommendation no. 4.

- k. Assure all marking requirements are valid.

This speaks to Material Control Recommendation no. 1.

- l. Review methods for handling material marking discrepancies.

This speaks to Material Control Recommendations no. 1 and no. 2.

- m. Standardize welding symbols in design documents.

This speaks to Design Drawing Recommendation no. 1.

- n. Assure that adequate training and incentives are in place for Crafts to do quality work.

This speaks to Process Control Recommendation no. 6.

- o. Investigate simplifying, including the separation of administrative direction from, certain QA procedures such as F-9, M-4, and M-51

This speaks to general recommendations no. 1 and no. 2

- (4) Implementation action will be reviewed for completeness by Department Heads.

ACTION TAKEN
ON
WELDING INSPECTOR TASK FORCE
PROGRAMMATIC - RECOMMENDATION'S

PROCESS CONTROL RECOMMENDATION #PC-1

RECOMMENDATION

ACTION

- 1) Review existing Process Control procedures to insure adequacy for resolving Process Control conflicts, for noting when Process Control is not required, and for noting when verbal instructions are acceptable. Also, insure adequacy for unusual work situations.

Review existing Processing Control procedures to insure adequacy for resolving Process Control conflicts,

for noting when Process Control is not required,

and for noting when verbal instructions are acceptable.

Also, insure adequacy for unusual work situations.

QA Procedures F-9, M-51, M-19 were reviewed. Each procedure contains instructions for making corrections to process control documents (minor or major).

The procedures specify when process control is required. If process control is not required for a particular case the procedure would specify; however, no cases could be identified that need clarification.

Instructed inspectors not to accept verbal instruction if he felt they were wrong or violated procedures.

These QA procedures provide a mechanism (in the form of F-9B or M-19C) for specifying unusual process control requirements.

PROCESS CONTROL RECOMMENDATION #PC-2

RECOMMENDATION

- 2) Review existing Process Control documentation to insure specific instructions are provided on how to complete forms and that procedures for handling discrepancies on forms are clear and specific. Consider whether present written methods for documenting and reconciling documentation discrepancies are adequate. Consider the use of examples of documentation discrepancies and how they should be resolved. Insure that guidance is provided to indicate when discrepancies are acceptable. Consider additional training of personnel in resolving discrepancies with documentation. Review adequacy of documentation checking process.

Review existing Process Control documentation to insure specific instructions are provided on how to complete forms

and that procedures for handling discrepancies on forms are clear and specific.

Consider whether present written methods for documenting

and reconciling documentation discrepancies are adequate.

ACTION

Construction procedures contain specific instructions for completing forms. Refer to CP-42, 427, 351, 144, 17, 432, 313.

QA procedures F-9, M-51, M-19 contain clear instructions. Refer to

QAP F-9, par. 5.2.H

QAP M-51, par. 4.2.2

QAP M-19, par. 4.3.C

Discrepancies are documented in accordance with QA Procedures R-2 or Q-1 unless the concern is a question which is handled verbally.

Discrepancies are reconciled through use of QA Procedures R-2 or Q-1. When discrepancies are identified verbally the reconciliation is by means of qualified personnel revising the process control instruction IAW F-9, M-51, M-19.

RECOMMENDATION

Consider the use of examples of documentation discrepancies and how they should be resolved.

Insure that guidance is provided to indicate when discrepancies are acceptable.

Consider additional training of personnel in resolving discrepancies with documentation.

Review adequacy of documentation checking process.

ACTION

Discussions with site personnel indicated a high level of understanding of the QA procedure requirements. No need for examples was indicated.

There is no provision for acceptable discrepancies. The discrepancies identified are resolved through provisions of the QA procedures referenced above.

Instructions and implementation of instructions are considered adequate. Need for training is continually monitored through trending of R-2As, QA-1A, and by NRC resident inspections.

An extensive analysis of the process control system at Catawba was undertaken. The results of this analysis showed the system to be adequate with supporting procedures giving accurate information, process control issuers and checkers adequately trained and motivated to perform their jobs adequately.

PROCESS CONTROL RECOMMENDATION #PC-3

RECOMMENDATION

ACTION

- 3) Review the adequacy of tracking methods for monitoring Process Control procedural and documentation problems. Review methods for feeding back results from such monitoring into procedures and personnel performance evaluations. Consider whether present methods for documenting this activity are adequate.

Review the adequacy of tracking methods for monitoring Process Control procedural and documentation problems.

Review methods for feeding back results from such monitoring into procedures

and personnel performance evaluations.

Consider whether present methods for documenting this activity are adequate.

All process control discrepancies are recorded as R-2A's or NCI's. This method is considered adequate.

All R-2A's and NCI's are reviewed for adverse trends, which may require procedure revision.

All R-2A's and NCI's are reviewed for adverse trends. Such trends may require personnel action.

The present methods are considered adequate.

PROCESS CONTROL RECOMMENDATION #PC-4

RECOMMENDATION

ACTION

- 4) Review adequacy of any existing, periodic review programs held with Construction and QA personnel for purposes of reviewing problems and progress in using Process Control procedures. Consider using such sessions to emphasize the importance of closely following procedures.

Review adequacy of any existing, periodic review programs held with Construction and QA personnel for purposes of reviewing problems and progress in using Process Control procedures.

Consider using such sessions to emphasize the importance of closely following procedures.

Reviewed this area and found no review programs existed.

Action was taken to establish periodic meetings by discipline with QA, Crafts and Construction Technical Support for a period of 6 months for the purpose of reviewing problems in using Process Control procedures.

PROCESS CONTROL RECOMMENDATION #PC-5

RECOMMENDATION

ACTION

- 5) Review with appropriate site personnel (QA and Construction) the organizational responsibilities and authority for resolving Process Control conflicts, discrepancies, and omissions. Insure functional adequacy of in-place procedures.

Review with appropriate site personnel (QA and Construction) the organizational and individual responsibilities and authority for resolving Process Control conflicts,

discrepancies,

and omissions.

Insure functional adequacy of in-place procedures.

Through discussions with site personnel, and review of QAP's F-9, M-51, and M-19 it was clear that these responsibilities were well understood.

Same.

Same.

Construction procedures and QA procedures are adequate in this regard, any discrepancies are resolved in accordance with QA procedures R-2 or Q-1.

PROCESS CONTROL RECOMMENDATION #PC-6

RECOMMENDATION

ACTION

- 6) Construction supervision should consider use of stronger incentives to insure craft adherence to procedures. Also, consider review and adequacy of V-1 training program.

Construction supervision should consider use of stronger incentives to insure craft adherence to procedures.

Also, consider review of adequacy of V-1 training program.

Policy was instituted where procedural violations are reviewed for possible disciplinary action.

An outside consultant has been hired to determine training needs. This study has been completed and recommendations will be implemented - beginning January 1983.

WELDING INSPECTION #WI-1

RECOMMENDATION

- 1) Review the present process used to review changes to QA Procedures before they are implemented. Consider adequacy of present communication of intent as well as specific instructions. Insure that technical terms are defined in procedures and training sessions. Consider adoption of a written commentary as part of certain procedures to insure clarity and for later reference on intent. Insure appropriate review by QA, Technical Support and Craft personnel.

Review the present process used to review changes to QA Procedures before they are implemented

Consider adequacy of present communication of intent as well as specific instructions.

Insure that technical terms are defined in procedures and training sessions.

Consider adoption of a written commentary as part of certain procedures to insure clarity

and for later reference on intent.

ACTION

Process requires changes to be sent to each site (both QA and Construction management) unless jointly agreed by Vice President Construction and Corporate QA Manager.

In some cases intent was not adequately communicated. We have undertaken a program where procedures writers brief trainers on intent and then review implementation of the procedure to ensure intent is understood.

Technical terms are defined in procedures when necessary and training sessions include definitions.

Briefings described above will result in "minutes" which will be distributed to trainers.

These minutes will be kept in procedure history file in QATS.

Procedures are sent to Projects for review. Site Construction and QA Managers distribute for comments as they see fit.

RECOMMENDATION

Insure appropriate review by QA, Technical Support and Craft personnel.

ACTION

Required routing of all proposed procedure revisions to appropriate inspection supervisors for review and comment. All proposed revisions to QA procedures have traditionally been routed to Technical Support for review and comment. If Technical Support feels that craft input is desirable is sought from appropriate craft supervision.

WELDING INSPECTION #WI-2

RECOMMENDATION

ACTION

- 2) Review with inspector supervisors their responsibilities and practices in providing verbal response to inspectors on technical questions and issues. Insure that verbal responses are provided for the proper scope of work in that the basis for responses is clearly communicated. Such basis should include reference to specific existing procedures, specifications, or other basis for decisions. Use of judgement should be limited to those areas not specifically addressed in procedures.

Review with inspector supervisors their responsibilities and practices in providing verbal response to inspectors on technical questions and issues.

Insure that verbal responses are provided for the proper scope of work in that the basis for response is clearly communicated.

Such basis should include reference to specific existing procedures, specifications, or other basis for decisions.

Use of judgement should be limited to those areas not specifically addressed in procedures.

Instructed supervisors as to when they could give verbal instruction and how to determine if they should give answer or refer it to others.

All supervisors were instructed in training sessions.

All supervisors were instructed in training sessions.

All supervisors were instructed in training sessions.

WELDING INSPECTION #WI-3

RECOMMENDATION

ACTION

- 3) Review with inspectors their responsibilities and practices in signing off work. Insure clear understanding that they are responsible once work has been signed off and that items which are not acceptable should not be signed off, regardless of opinions of others. Review appropriate and inappropriate methods for documenting input of others. Insure understanding of acceptable methods and personnel from which assistance and guidance should be obtained. Insure adequate use of available alternative inspection techniques for questionable items.

Review with inspectors their responsibilities and practices signing off work.

Insure clear understanding that they are responsible once work has been signed off

and that items which are not acceptable should not be signed off, regardless of opinions of others.

Review appropriate and inappropriate methods for documenting input of others.

Insure understanding of acceptable methods

All inspectors were instructed when not to sign - when they felt it wasn't right regardless of verbal instructions.

All inspectors were trained and understand this responsibility.

All inspectors were specifically instructed in this regard.

Instructed supervisors their input would be signing if qualified. Also developed flow chart of getting answers or questions that covered how other input would be obtained and documented.

All supervisors were trained on how to get information and how to use it.

RECOMMENDATION

and personnel from which assistance and guidance should be obtained.

Insure adequate use of available alternative inspection techniques for questionable items.

ACTION

A flow chart established how and from whom assistance and guidance should be obtained and communicated and this was communicated to all inspectors.

Instructed supervisor to use alternative inspection techniques to help resolve questionable items.

WELDING INSPECTION #WI-4

RECOMMENDATION

ACTION

- 4) Consider the use of workmanship samples or pictures to illustrate the difference between acceptable and unacceptable work, especially on items which are somewhat judgemental or on which regular or periodic high volume of NCIR's occur.

Consider the use of workmanship samples or pictures to illustrate the difference between acceptable and unacceptable work, especially on items which are somewhat judgemental

or on which regular or periodic high volume of NCIR's occur.

We are developing these samples in structural steel and piping welds. Samples will be accompanied by implementing procedure.

The samples will include these items as need is identified, based on input from Construction.

WELDING INSPECTION #WI-5

RECOMMENDATION

- 5) Provide a resource (example: Level III Inspector) to resolve conflicts and discrepancies in welding inspection on the spot. Provide means for appropriate documentation of his actions.

Provide a resource (example: Level III Inspector) to resolve conflicts and discrepancies in welding inspection on the spot.

Provide means for appropriate documentation of his actions.

ACTION

Since Duke has only 1 Level III in each discipline and this is specifically done to avoid different methods because of multiple Level III's, and that multiple level III's are not available; the approach taken was to clarify how the existing Level III should be utilized. This was done through flow path development and training.

Development of flow chart above did this along with instructions to inspectors not to sign if they felt it was wrong. Proper method for Level III to document his action would then be to sign himself for action if inspector disagreed. Inspector then would have recourse right under the Technical Recourse procedure.

WELDING INSPECTION #WI-6

RECOMMENDATION

ACTION

- 6) Review with inspectors the scope of their responsibilities and the part they play in the overall process of insuring quality. Insure that they understand that responsibility is shared with their supervision and upper management and does not totally rest with them.

Review with the inspectors the scope of their responsibilities and the part they play in the overall process of insuring quality.

Insure that they understand that responsibility is shared with their supervision and upper management and does not totally rest with them.

This item was specifically addressed in training sessions conducted in accordance with the implementation objectives.

This item was specifically addressed in training sessions conducted in accordance with the implementation objectives.

NCIR RESOLUTION #NR-1

RECOMMENDATION

- 1) Review adequacy of present requirements and controls for documenting technical resolutions, especially those by Design Engineering and Construction. Insure that written resolutions are concisely stated, cite specific documentation as basis, and answer obvious questions.

Review adequacy of present requirements and controls for documenting technical resolutions, especially those by Design Engineering and Construction.

Insure that written resolutions are concisely stated,

cite specific documentation as basis

and answer obvious questions.

ACTION

Requirements were reviewed and necessary procedure changes were implemented to both Design and Construction procedures.

Technical approval of Design resolved NCI's is at the Group Head or higher level.

Training was conducted to stress citing specific basis.

Training was conducted to insure that obvious questions are answered in resolution of NCI's.

NCIR RESOLUTION #NR-2

RECOMMENDATION

ACTION

- 2) Review the existing process for NCIR origination by QA inspectors, especially as relates to interface with immediate supervisor. Insure that no procedural steps, procedural interpretations, or personnel interfacing inhibits development of proposed NCIR's by inspectors. Insure that inspector supervisor adequately dispositions proposed NCIR's to upgrade to NCIR status or degrade to invalid NCIR status in accordance with required procedures. Pay special attention to adherence to documentation required for invalid NCIR's. Insure that supervisor responsibilities and specific procedures are written, communicated, and understood including:
- a) Responsibility and criteria for review of all proposed NCIR's and determination of future disposition.
 - b) Responsibility for insuring complete clarity of problem description for all proposed NCIR's that are elevated to NCIR status. Insure that supervisors authority to require complete rewrite or to personally make minor editorial changes is understood and carried out. Insure that adequate records are kept for future review of inspector and supervisor performance.
 - c) Responsibilities and procedures for documenting and filing rationale and specific justification for designating a proposed NCIR as invalid. Insure that sufficient files are kept and regularly reviewed by upper supervision for adequacy of justifications, trend usage and inspector and supervisor performance and training input.

RECOMMENDATION

Review the existing process for NCIR origination by QA inspectors, especially as relates to interface with immediate supervisor.

Insure that no procedural steps, procedural interpretations, or personnel interfacing inhibits development of proposed NCIR's by inspectors.

Insure that inspector supervisor adequately dispositions proposed NCIR's to upgrade to NCIR status or degrade to invalid NCIR status in accordance with required procedures.

Pay special attention to adherence to documentation required for invalid NCIR's.

Insure that supervisor responsibilities and specific procedures are written, communicated, and understood including:

- a) Responsibility and criteria for review of all proposed NCIR's and determination of future disposition.
- b) Responsibility for insuring complete clarity of problem description for all proposed NCIR's that are elevated to NCIR status.

Insure that supervisors authority to require complete rewrite or to personally make minor editorial changes is understood and carried out.

ACTION

Process was reviewed and procedure was revised as necessary.

No procedural steps or interpretation inhibit the development of proposed NCIRs.

Procedure is clear in this regard and training was conducted.

Procedure is clear in this requirement.

This item was addressed in specific training sessions.

Procedure is clear in this respect.

Procedure is clear in this respect and supervisors do understand their authority.

RECOMMENDATION

Insure that adequate records are kept for future review of inspector and supervisor performance.

- c) Responsibilities and procedures for documenting and filing rationale and specific justification for designating a proposed NCIR as invalid.

Insure that sufficient files are kept and regularly reviewed by upper supervision for adequacy of justifications, trend usage and inspector and supervisor performance and training input.

ACTION

Adequate records are kept for review of personnel performance.

Procedure is clear in this regard and supervision has been specifically trained.

A review team was appointed by management to review each NCI. This team has functioned to improve the overall quality of NCI's, by reviewing each NCI for justification, disposition and trends. This team has also provided training input to all affected departments.

NCIR RESOLUTION #NR-3

RECOMMENDATION

ACTION

- 3) Review process for NCIR resolution by Construction and Design Engineering to insure adequacy of the following:
- a) Resolution documentation (See Item 2)
 - b) Adequate site inspection before resolution is issued.
 - c) Workable repairs are issued for craft implementation.
 - d) Any significant level of NCIR occurrences in specific areas is factored into procedure and performance reviews appropriately.
 - e) Any significant level of acceptance of "as is" conditions which do not meet Design or Construction original requirements are reviewed for procedure changes and personnel performance evaluation by appropriate management.
 - f) Upper time limit for resolution of all NCIR's is adequately defined and enforced.
 - g) Returned NCIR's which have resolutions that are problems are tracked in the same manner as normal NCIR's received for the first time. Also insure that such returns are trended for procedure and performance evaluation purposes.

Review process for NCIR resolution by Construction and Design Engineering to insure adequacy of the following:

- a) Resolution documentation (See Item 2)
- b) Adequate site inspection before resolution is issued.

Process was reviewed and procedures were appropriately revised.

Design personnel appropriately review conditions prior to issuing a resolution.

RECOMMENDATION

- c) Workable repairs are issued for craft implementation.
- d) Any significant level of NCIR occurrences in specific areas is factored into procedure and performance reviews appropriately.
- e) Any significant level of acceptance of "as is" conditions which do not meet Design or Construction original requirements are reviewed for procedure changes

and personnel performance evaluation by appropriate management.
- f) Upper time limit for resolution of all NCIR's is adequately defined and enforced.
- g) Returned NCIR's which have resolutions that are problems are tracked in the same manner as normal NCIR's received for the first time.

Also insure that such returns are trended for procedure

and performance evaluation purposes.

ACTION

Repair instructions are reviewed by both Technical Support and Quality Assurance.

Trend analysis is performed to identify specific problem areas.

Trend analysis will identify needed procedure changes.

Management takes whatever personnel action they feel appropriate.

None, item was addressed but not considered desirable.

Construction Department NCI's returned to Design or QATS are tracked the same as first time NCI's.

Periodically, the site sends list of returned NCIs to QATS who reports results to management via NCI trend analysis.

Management takes whatever action they feel appropriate.

DESIGN DRAWINGS #DD-1

RECOMMENDATION

ACTION

- 1) Review clarity of present standards used for weld callouts on drawings. Consider using more general specification vs. providing extensive joint geometry.

Review clarity of present standards used for weld callouts on drawings.

Consider using more general specification vs. providing extensive joint geometry.

Training was conducted by Engineering to highlight in importance of good drafting to eliminate drawing clarity problems.

Engineering addressed this item in detail, the option of the joint geometrics is a decision of the designer and is exercised on some design drawings.

MATERIAL CONTROL #MC-1

RECOMMENDATION

- 1) Review clarity of procedures and craft implementation of procedures for material marking. Insure instructions are specified and that monitoring of craft compliance is sufficient. Insure that procedure violations are dealt with in rigorous fashion as relates to disposition of material in question and as relates to personnel performance feedback. Review procedure scope limits.

Review clarity of procedures

and craft implementation of procedures for material marking.

ACTION

Material control procedures were reviewed and found unclear in some areas. Procedures H-4 and H-5 were revised for clarification.

Craft personnel receive training in Quality Assurance procedures (both new and revised) as they are issued to the field. Construction (generated at the site) are reviewed and revised, if necessary, to reflect the requirements of the new or revised QA procedures. The craft personnel also receive training on the requirements in construction procedures. There are programs which identify craft non-compliance of procedures. These programs are (1) procedure QA-300, "Construction Surveillance", (2) procedure QA-150, "Trend Analysis", and (3) the inspection program. Each of these methods have the means to identify and document non-compliance with procedures. Each also has a method to document corrective action taken to rectify the situation. Therefore, the program is sufficient to verify craft implementation of the procedures.

RECOMMENDATION

Insure instructions are specific

and that monitoring of craft compliance is sufficient.

Insure that procedure violations are dealt with in rigorous fashion as relates to disposition of material and question

ACTION

As revisions are issued to the field, the construction procedures will be reviewed for conformance to the current Quality Assurance procedures. Craft personnel will be trained in the procedure changes, both construction procedures and QA procedures.

There are three methods used to help monitor craft compliance of instructions. These programs are (1) procedure QA-300, "Construction Surveillance", (2) procedure QA-150, "Trend Analysis", and (3) the inspection program. Each program has a method to identify and document discrepancies as well as methods to perform corrective action. Each of these programs are implemented by a different group. The Construction Surveillance program is implemented by Quality Assurance personnel at the site, the "Trend Analysis" program is implemented by Quality Assurance, Technical Services, and the inspection program is implemented by site Quality Control personnel. The combination of these programs provide a constant monitoring system which is sufficient to identify craft compliance with instructions.

The fabrication and erection inspection procedures provide inspector checkpoints to verify correct material. These procedures provide corrective action guidelines. Also Quality Assurance Procedure, Q-1, "Control of Non-Conforming Items" is used for violations of Quality Assurance procedures. These methods are sufficient for determining the disposition of the materials used.

RECOMMENDATION

and as relates to personnel performance feedback.

Review procedure scope limits.

ACTION

The performance of the craft is constantly being viewed by means of (1) the Construction Surveillance program, (2) the non-conforming item Trend Analysis, and (3) the feedback from the inspectors on problems encountered in the field. These methods have systems to provide feedback to the craft via their supervision. These methods are sufficient to identify performance problems and provide the necessary corrective action.

Quality Assurance Procedures H-4 and H-5 have been revised to reflect applicability to QA Condition 1 and QA Condition 4 only.

MATERIAL CONTROL #MC-2

RECOMMENDATION

- 2) Review adequacy of methods for dealing with QA procedure violations, lack of procedures, and procedure extensions, to insure appropriate guidance exists. Consider if sufficient avenues are available and are being used to rework some deficiencies without having them escalate to status of a proposed NCIR's.

Review adequacy of methods for dealing with QA procedure violations,

lack of procedures,

and procedure extensions,

ACTION

The purpose section of Quality Assurance Procedure Q-1, "Control of Non-conforming Items", identifies Quality Assurance procedure violations should be handled in accordance with this procedure. Also, some procedures allow the use of procedure R-2, "Corrective Action", as an acceptable alternative to document discrepancies. The program to deal with Quality Assurance procedure violations is sufficient.

Quality Assurance Procedure A-1, "Preparation and Issue of Quality Assurance Procedures", outlines the steps to take when a new Quality Assurance procedure or revision is needed. Quality Assurance procedure F-1, "Construction Procedures", outlines the proper steps for the development of construction procedures.

Procedure QA-107 was developed to more closely control the method for issuing procedure extensions.

RECOMMENDATION

to insure appropriate guidance exists.

Consider if sufficient avenues are available and are being used to rework some deficiencies without having them escalated to status of a proposed NCIR's.

ACTION

The existing fabrication and erection inspection procedures outline acceptable methods within the procedure to document and correct deficiencies. These procedures also identify other procedures such as Q-1 "Control of Non-Conforming Items" and R-2 "Corrective Action", which can be used to document discrepancies.

A-3

FSAR
previously
submitted

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A-4

ER
previously
submitted

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[Handwritten signature]

QA Topical
Report
previously
submitted



A-6

QA Manuals
(previously submitted)

W.S.B.





Catania License Application
(previously submitted)

A-7

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