

9/24/83

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)		
DUKE POWER COMPANY, <u>et al.</u>	)	Docket Nos.	50-413
(Catawba Nuclear Station,	)		50-414
Units 1 and 2)	)		

TESTIMONY OF LARRY P. DAVISON

- 1 Q. STATE YOUR NAME AND BUSINESS ADDRESS.
- 2 A. My name is Larry R. Davison, and my business address is Catawba
- 3 Nuclear Station, P.O. Box 223, Clover, South Carolina 29710.
- 4 Q. STATE YOUR PRESENT JOB POSITION WITH DUKE POWER
- 5 COMPANY AND DESCRIBE THE NATURE OF YOUR JOB.
- 6 A. I am the Project Quality Assurance Manager responsible for Quality
- 7 Assurance during construction of the Catawba Nuclear Station.
- 8 Quality Assurance consists of planned activities to assure that the
- 9 Catawba plant will be designed, constructed and operated in a
- 10 manner consistent with all applicable regulatory requirements and in
- 11 a manner to protect the health and safety of the public. During
- 12 construction these activities consist of inspection of actual work,
- 13 review of materials used in constructing the plant, review and
- 14 approval of construction procedures used in construction, and
- 15 review and approval of documentation generated in the above
- 16 activities. These activities are conducted in accordance with
- 17 procedures contained in the Duke Quality Assurance Manuals for
- 18 construction. There are approximately 230 Quality Assurance
- 19 employees at Catawba consisting of engineers, technicians,
- 20 inspectors and clerks.

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

4 A. I am a registered Professional Engineer in both North Carolina and  
5 South Carolina. I received a Bachelor of Science degree in  
6 Mechanical Engineering from the Georgia Institute of Technology in  
7 1967. My experience has included four years in the United States  
8 Navy where I attended both nuclear power and submarine schools.  
9 The nuclear power school consisted of six months of theoretical  
10 training in nuclear power and six months at a prototype nuclear  
11 power plant actually learning to operate the plant. After completion  
12 of both schools, I was assigned on-board an operating ballistic  
13 missile submarine for approximately two and one-half years.

14 I started working for Duke Power Company in 1971 as an  
15 Assistant Field Engineer at the Oconee Nuclear Station. I was  
16 responsible for generating welding construction procedures. In  
17 1973 I was promoted to Associate Field Engineer, with responsibility  
18 for welding inspection at Oconee. With the completion of Oconee, I  
19 was transferred to the Catawba Nuclear Station in 1974. I had the  
20 assignment of Senior Quality Control Engineer and was responsible  
21 for Quality Control inspection activities at Catawba in all the  
22 disciplines of work that was being performed. I remained in that  
23 position until February, 1981 when I was appointed QA Manager for  
24 the Projects Division of the Quality Assurance Department. With  
25 this assignment, I was transferred from the Catawba site to the  
26 Charlotte Office. I held that position until approximately  
27 September, 1982 when I was transferred back to Catawba Nuclear  
28 Station as the Project QA Manager. In my current position, I have

1 responsibility for all of the QA activities at the Catawba site during  
2 the construction of the plant.

3 I have attended several schools involving welding and welding  
4 inspection, including a one week course at the University of  
5 Tennessee dealing with the technical aspects of welding, and a  
6 training course at Magnaflux Corporation in interpretation of  
7 radiographic film. I have been certified as a Level III welding  
8 inspector examiner by Duke Power Company at Catawba, although I  
9 do not presently hold that certification. I held this certification  
10 from 1978 to 1980. During 1980 the Level III examiner duties were  
11 consolidated during a reorganization in the QA Department. I  
12 allowed my certification to lapse in 1980 since I was no longer  
13 performing the Level III examiner duties. My resume is  
14 Attachment 1 to my testimony.

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

17 A. I was part of a group that updated all inspector position analyses  
18 in the spring of 1980. This updating of inspector position analyses  
19 was done with input from inspection supervision. The position  
20 analyses were then evaluated and assigned a pay grade  
21 classification.

22 Q. DESCRIBE WHAT HAS OCCURRED OVER THE YEARS WITH  
23 RESPECT TO THE PAY CLASSIFICATION.

24 A. When Catawba construction began in 1974, there were no position  
25 analyses for inspectors. Quality Assurance Procedures governed  
26 training and certification, but did not cover pay. The pay  
27 classifications that existed were administered by each supervisor

1 with increases or promotions originating with the supervisor's  
2 recommendation.

3 Position analyses were developed for the various inspector  
4 positions in 1977 at McGuire. These position analyses and  
5 corresponding pay grade classifications were initiated in February  
6 1980.

7 Because of the time lag between when the position analyses  
8 were completed in 1977, and their implementation in 1980, all the  
9 position analyses were reviewed and updated as necessary soon  
10 after implementation. Upon completion of this updating, the  
11 positions were evaluated and classified for pay purposes. These  
12 revised pay classifications were implemented in July 1981.

13 Q. WHAT WAS THE RESULT OF THE 1981 ANALYSIS ON THE PAY  
14 CLASSIFICATION OF WELDING INSPECTORS?

15 A. It resulted in the pay grade for the new position of Welding  
16 Inspector A being reduced one pay grade below the previous  
17 Welding Inspector position. With this reduction in pay grade, the  
18 Welding Inspector A position was a few cents per hour higher than  
19 the craft welder pay.

20 Q. WHAT CAUSED THE WELDING INSPECTOR POSITION TO BE  
21 LOWERED A PAY GRADE?

22 A. Prior to 1981 there were two levels of welding inspectors for pay  
23 purposes, welding inspector learner and welding inspector. The  
24 pay classification for these positions was based on the qualifications  
25 requirement of two years experience in welding fabrication or  
26 welding inspection. In June, 1978, the two years experience  
27 requirement was changed when the certification procedure for  
28 inspectors established uniform experience requirements and levels of

1 inspector certification for all inspector disciplines. The welding  
2 inspector position evaluation by the pay classification committee in  
3 1980 took into account the changes in the required experience.  
4 This change in the experience requirement was one of the reasons  
5 the pay classification was lowered to Grade 10. This evaluation of  
6 positions included all inspector positions, and resulted in some  
7 inspector positions, such as Mechanical Inspector A, being  
8 upgraded by one pay grade.

9 Q. DID THIS CHANGE IN THE REQUIREMENTS FOR WELDING  
10 INSPECTORS RESULT IN LESS QUALIFIED WELDING INSPECTORS?

11 A. No. Qualification and certification of welding inspectors was still  
12 based on successful completion of the training and testing program.  
13 When the two year welding inspection or welding fabrication  
14 experience requirement was dropped, the procedure introduced  
15 levels of welding inspectors. These were Level I, II and III.  
16 Since all our welding inspectors at Catawba at the time had met the  
17 two year experience requirement, they met the requirements for  
18 Level II inspector certification. Any new inspectors hired would  
19 have to move through the Level I certification to gain experience  
20 before being qualified to Level II. The experience requirement was  
21 not simply dropped, it was replaced with requirements for  
22 inspection experience. The training and testing program remained  
23 essentially the same.

24 Q. DID YOU COMMUNICATE THE DECISION CONCERNING THE PAY  
25 RECLASSIFICATION TO THE WELDING INSPECTORS.

26 A. Yes. This decision was communicated to all the inspectors through  
27 their supervision and in meetings with the inspectors.

1 Q. WHAT WAS THE RESPONSE OF THE WELDING INSPECTORS TO  
2 THIS PAY RECLASSIFICATION?

3 A. They were not happy over this reduction in pay grade. Several  
4 welding inspectors followed Duke's recourse procedure to seek  
5 management review of the reclassification.

6 Q. WERE YOU INVOLVED IN PROCESSING THE PAY RECOURSES?

7 A. Not directly. The recourses were handled in accordance with the  
8 corporate recourse policy. Step 1 was to the Department Head,  
9 step 2 to Corporate Employee Relations, and step 3 to the President  
10 of the company. I was involved to the extent of being interviewed  
11 or asked questions by persons working on the responses during  
12 these steps.

13 Q. WHEN DID YOU FIRST BECOME AWARE OF THE CONCERNS  
14 EXPRESSED BY WELDING INSPECTORS AT CATAWBA WHICH  
15 APPEARED TO AFFECT THE QUALITY OF PLANT CONSTRUCTION?

16 A. In December 1981 I was informed by Mr. Wells, Corporate QA  
17 Manager, that some concerns of this nature had been expressed and  
18 that a Task Force had been appointed by Mr. Owen to investigate  
19 the concerns.

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

22 A. I was not directly involved with Task Force I. They interviewed  
23 me as part of their investigation, and I made arrangements for them  
24 to have a place to work at Catawba.

25 Q. DESCRIBE YOUR INVOLVEMENT WITH THE TECHNICAL TASK  
26 FORCE.

27 A. After Task Force I completed its investigation, I was advised that  
28 additional specific concerns had been expressed by the welding

1 inspectors. I called a meeting with all welding inspectors at  
2 Catawba on January 11, 1982 and asked them to specifically list all  
3 of their concerns so they could be investigated. This request was  
4 made again on January 21, 1982, in a letter from Jim Wells to all  
5 Catawba welding inspectors. When these concerns were turned in,  
6 I delivered them to the Technical Task Force. I was not involved  
7 in the Task Force investigation of these concerns.

8 When the Technical Task Force completed its work and issued  
9 its report, I worked with George Grier, Neal Alexander, Wayne  
10 Henry and Bill Bradley to review the Technical Task Force  
11 recommendations and develop implementation objectives based on the  
12 Task Force recommendations.

13 Q. DESCRIBE YOUR INVOLVEMENT WITH LEWIS ZWISSLER OF  
14 MANAGEMENT ANALYSIS COMPANY.

15 A. I was interviewed by Mr. Zwissler during the time the Technical  
16 Task Force was investigating the inspector concerns.

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

19 A. I had no involvement with the Nontechnical Task Force.

20 Q. WERE YOU INVOLVED IN THE IMPLEMENTATION OF  
21 RECOMMENDATIONS ISSUED BY ANY OF THE TASK FORCES?

22 A. Yes.

23 Q. DESCRIBE YOUR ROLE IN IMPLEMENTING THE RECOMMENDATIONS  
24 OF THE TECHNICAL TASK FORCE.

25 A. I participated in the review of the recommendations of the Technical  
26 Task Force. George Grier, Neal Alexander, Wayne Henry, Bill  
27 Bradley, and I developed implementation objectives from the general

1 and programmatic recommendations made by the Technical Task  
2 Force.

3 I participated in the assignment of individuals to carry out the  
4 specific recommendations of the Technical Task Force, and the  
5 implementation objectives based on the general and programmatic  
6 recommendations.

7 I personally developed the action to be taken on three of the  
8 implementation objectives, 9(3)a 1, 2 and 3; 9(3)d and 9(3)h  
9 (Technical Task Force, Volume I, Section 9). In doing this, I  
10 reviewed the recommendations of the Task Force, developed actions  
11 to be taken, and either carried them out myself or assigned them to  
12 be carried out.

13 The three implementation objectives I worked on resulted in  
14 action to

15 1) involve inspector supervision in QA Procedure revision  
16 process;

17 2) establish periodic meetings between representatives from  
18 QA, Construction Engineering and Craft to discuss any process  
19 control problems; and

20 3) to conduct training of Projects QA Supervision and  
21 Inspectors.

22 The training of QA supervision included a flow chart of how to  
23 resolve technical questions from inspectors, sometimes referred to  
24 as the "stickman" process, when to give direction to inspectors,  
25 and to never direct an inspector to accept anything he is  
26 uncomfortable with. The training of Inspectors was to be sure they  
27 understood that they should not accept any item they felt was not

1 acceptable even if they felt they were directed to do so. The  
2 "stickman" flow chart is Attachment 2 to my testimony.

3 Q. HOW WOULD YOU DESCRIBE THE PRIMARY CONCERN OF THE  
4 WELDING INSPECTORS?

5 A. In my view, they were concerned about two things:

- 6 1. The reduction in their pay grade
- 7 2. Decisions made by several individuals in their management  
8 which they did not understand or did not agree with.

9 This is based on my discussions with inspectors and my review of  
10 the task force reports.

11 Q. ARE YOU AWARE OF ANY OTHER SPECIFIC CONCERNS OF THE  
12 WELDING INSPECTORS?

13 A. Yes, I am aware of several concerns that welding inspectors have  
14 raised. These include:

- 15 1. welds on systems where only a final visual inspection is  
16 performed;
- 17 2. possible damage to structural steel after it has been inspected;
- 18 3. NCI-9085; and
- 19 4. additional concerns of G.E. Ross since the technical Task  
20 Force

21 Q. PLEASE EXPLAIN THE SITUATION WITH REGARD TO WELDS ON  
22 SYSTEMS WHERE ONLY A FINAL VISUAL INSPECTION IS  
23 PERFORMED.

24 A. There are various classes of piping systems ranging from Class A  
25 to Class H, A being the highest. Inspections performed on welds  
26 in these systems are based on Class and Code requirements. Class  
27 A gets cleanliness, fit up, visual, surface and volumetric NDE as  
28 opposed to Class E which receives only a final visual inspection.

1 The classification of piping systems is determined by Design  
2 Engineering based upon the safety function of the system. Lower  
3 classes receive less inspection because significance to safety is less  
4 and the degree of assurance is correspondingly less. In addition to  
5 inspection, all safety related systems are hydrostatically tested in  
6 accordance with ASME Code requirements. This provides additional  
7 assurance of weld integrity.

8 Q. WHAT IS THE SITUATION WITH REGARD TO POSSIBLE DAMAGE  
9 TO STRUCTURAL STEEL AFTER IT HAS BEEN INSPECTED?

10 A. This involves a recent concern about removal of welds on previously  
11 inspected structural steel without the removal area being inspected.  
12 Procedures are in place that provide that when temporarily attached  
13 welds are removed, the removal area is to be inspected. We are in  
14 the process of evaluating this concern. We will review the  
15 instances cited to determine their significance and if significant will  
16 take proper corrective action. In addition, we will determine if our  
17 procedures should be modified in some way.

18 Q. WHAT IS THE SITUATION WITH REGARD TO NCI-9085?

19 A. This NCI originated as a result of three different heat numbers  
20 being marked on a piece of Class B pipe installed in a Class E pip-  
21 ing System. One number was valid, two were invalid. Class E piping  
22 systems do not require heat number traceability (i.e. ability to  
23 identify the origin of the material) and thus the matter was  
24 acceptable as is. The concern is that this piece of installed Class  
25 B pipe could be removed and used in a Class B piping system  
26 without proper traceability. Such is not the case because of the  
27 heat number check that is performed at fit up inspection of Class B  
28 piping systems. This check verifies the heat number with a log of

1 valid heat numbers. The two invalid numbers on this piece of pipe  
2 would not pass that check. Accordingly for traceability purposes,  
3 only one number, and that the valid one, will be associated with  
4 this piece of pipe.

5 Q. WHAT IS THE SITUATION WITH REGARD TO THE ADDITIONAL  
6 CONCERNS OF G. E. ROSS?

7 A. I have discussed the additional concerns with G. E. Ross. He has  
8 indicated he is satisfied with one exception. We have agreed to  
9 action to be taken to resolve this one concern. This action is  
10 ongoing.

11 Q. THE CONCERNS EXPRESSED BY THE WELDING INSPECTORS WERE  
12 INITIALLY CHARACTERIZED AS CONCERNS AFFECTING THE  
13 QUALITY OF WORK OR THE SAFETY OF THE CATAWBA PLANT.  
14 IN YOUR VIEW, DID THE CONCERNS EXPRESSED BY THE WELDING  
15 INSPECTORS AFFECT THE QUALITY OR THE SAFETY OF THE  
16 CATAWBA PLANT?

17 A. No. Based on my review of the results of the Technical Task  
18 Force's investigations, I saw nothing that indicated that any of the  
19 concerns would have affected the quality or safety of Catawba.  
20 The concerns involved misunderstandings, less than desirable  
21 communications, and room for improvement in procedures; but, none  
22 of these concerns resulted in less than acceptable quality or safety  
23 at Catawba.

24 Q. IN YOUR VIEW, DID THIS EXPRESSION OF CONCERNS BY THE  
25 WELDING INSPECTORS INDICATE THAT THERE WAS A  
26 BREAKDOWN IN THE QA PROGRAM AT CATAWBA OR THAT THE  
27 QA PROGRAM WAS NO LONGER WORKING AT CATAWBA?

1 A. No. In fact, the expression of concerns indicated that the QA  
2 Program was working because of the openness where the concerns  
3 were brought up, investigated, and resolved in such a manner to  
4 improve the Program. Any program will always have room for  
5 improvement; but, that does not mean it does not work. The  
6 dedication to quality by Duke management and employees is  
7 evidenced by the continual review of the QA Program with emphasis  
8 on making it even better, and the avenues set up to allow anyone  
9 to raise concerns to higher levels of management through recourse.

10 These are elements of a successful QA Program rather than  
11 one that does not work.

12 Q. HAVE YOU EVER PRESSURED AN INSPECTOR OR SUPERVISOR TO  
13 APPROVE FAULTY OR DEFICIENT WORKMANSHIP?

14 A. No. I have based my decisions in evaluating NCI's or other  
15 nonconformances on applicable technical standards.

16 Q. WHAT IS THE QA DEPARTMENT'S POLICY AND PRACTICE WITH  
17 RESPECT TO EMPLOYEE'S ACCESS TO THE NRC TO EXPRESS  
18 CONCERNS OR RAISE TECHNICAL QUESTIONS?

19 A. It has always been both the policy and practice of the QA  
20 Department that all employees have free access to the NRC on any  
21 matter involving quality or safety at its nuclear plants. This is not  
22 only a QA Department policy, but it is the Company's policy. The  
23 Catawba site QA organization is a primary interface with the  
24 Resident NRC Inspector, particularly as it relates to their periodic  
25 inspections. At one time or another, practically all QA employees  
26 at Catawba have direct access to the NRC. It would be simply  
27 unrealistic to attempt to restrict employee access to the NRC.

1           This policy of open access to the NRC was the same when the  
2 QC inspection group was part of the Construction Department. It  
3 was posted on company bulletin boards at the site in 1977 in a  
4 document signed by Mr. R. L. Dick. This document contained the  
5 NRC's Regional Office telephone number, and a statement that the  
6 NRC would accept collect calls. It has also always been clear to me  
7 that the company policy is that employees have a right, but more  
8 importantly, the responsibility to bring up any concerns they have  
9 of a technical or nontechnical nature through Duke's recourse  
10 procedures. This policy in no way restricts employee contact with  
11 the NRC.

12 Q. HAVE YOU EVER DIRECTED INSPECTORS TO NOT EXPRESS  
13 CONCERNS OR RAISE TECHNICAL QUESTIONS WITH THE NRC?

14 A. No. I have encouraged inspectors to express their concerns and  
15 questions to their supervisors and company management and  
16 through recourse procedures before going to the NRC. In 1980, I  
17 held meetings with all welding inspectors to be sure they  
18 understood that the recourse procedure applied to any concern,  
19 technical or nontechnical. I advised the inspectors that they had a  
20 responsibility to follow this procedure prior to going to the NRC,  
21 but, that this responsibility in no way would replace their right by  
22 law to go to the NRC at any time. There are several reasons why  
23 I encouraged inspectors to raise concerns within the company  
24 structure. The company has established a comprehensive set of  
25 procedures to receive, review and resolve technical and  
26 nontechnical concerns. It is extremely important to encourage  
27 employees to discuss matters with their supervisor. This is an  
28 effective method of both problem identification and problem solving.

1 If employees raise concerns with their supervisors, the concerns  
2 can get resolved expeditiously, leading to better communications and  
3 better work. It provides the kind of feedback necessary to have a  
4 good QA program.

5 Q. WHY DID YOU HAVE A MEETING WITH WELDING INSPECTORS IN  
6 1980 TO DIRECT THEM TO EXPRESS CONCERNS AND RAISE  
7 TECHNICAL QUESTIONS WITH DUKE MANAGEMENT BEFORE GOING  
8 TO THE NRC?

9 A. I held these meetings with the welding inspectors because of  
10 discussions I had with the Resident NRC Inspector. During my  
11 normal contact with the Resident NRC Inspector, he had indicated  
12 that some welding inspectors had brought to him concerns which did  
13 not involve safety-related portions of the plant. While I did not  
14 receive specific examples during these conversations, I was left  
15 with the impression that these matters brought to the NRC should  
16 be handled by the company, and were nonsafety related. I felt a  
17 need to ensure that our inspectors understood that we wanted them  
18 to communicate with management, and that the Duke recourse  
19 procedure was available to them on these matters, as well as any  
20 other matter.

21 Q. TO YOUR KNOWLEDGE HAVE QA EMPLOYEES USED THE RECOURSE  
22 PROCEDURES, THE HARASSMENT PROCEDURE OR TAKEN THEIR  
23 CONCERNS TO THE NRC?

24 A. I know QA employees have used the recourse procedures and the  
25 harassment procedures. However, I do not know of any QA  
26 employees who have taken a concern to the NRC, but I understand  
27 such has occurred.

1 Q. TO YOUR KNOWLEDGE HAS SUCH TAKEN ANY RETALIATORY  
2 ACTION AGAINST INDIVIDUALS WHO HAVE USED THE RECOURSE  
3 PROCEDURES, THE HARASSMENT PROCEDURE OR TAKEN THEIR  
4 CONCERNS TO THE NRC?

5 A. No.

6 Q. ARE YOU AWARE OF ALLEGATIONS BY INSPECTORS THAT THEY  
7 HAVE BEEN HARASSED IN CARRYING OUT THEIR TASKS?

8 A. Yes. I am aware of two cases where formal harassment charges  
9 have been made which involved disputes between a welding inspector and  
10 the craft. In both instances the matter was investigated and it was  
11 concluded that harassment had not occurred. Rather, heated arguments  
12 had taken place. In both cases the employees involved were counseled  
13 on their actions. I would note that QA is not pressured by craft to be  
14 the extent that anything less than satisfactory work is approved. Our  
15 inspectors simply will not permit this. There has been, and I imagine  
16 there will continue to be, tension between craft and QA from time to  
17 time. This stems from the nature of the job. QA inspects craft work;  
18 if it is not satisfactory it will not be approved. It is natural for craft  
19 to be somewhat resentful to be told work is not satisfactory. However,  
20 as has been noted, management of both organizations worked together to  
21 assure that the interface does not impair the safety of the plant.  
22 Further, our inspectors are instructed that when such situations develop  
23 they should avoid becoming involved in an argument. If any situations  
24 come forward which identify a problem representatives of both  
25 departments meet and attempt to resolve the issue.

PART II

1 Q. DESCRIBE THE QA ORGANIZATION AT THE CATAWBA SITE.

2 A. The current QA organization at the Catawba site is set forth on a  
3 chart which is Attachment 3 to my Testimony. The organization  
4 consists of five groups which perform various functions, the  
5 Inspection Group, the QA Technical Group, the Surveillance Group,  
6 the Planning Group, and Employee Relations.

7 Q. PLEASE DESCRIBE THE FUNCTION OF EACH OF THESE GROUPS,  
8 BEGINNING WITH THE INSPECTION GROUP.

9 A. The Inspection Group is responsible for the Quality Control (QC)  
10 inspection of the work that is being done, and is headed by an  
11 Inspection Superintendent. The Inspection Group is organized by  
12 discipline into several other groups. There is a Mechanical Group,  
13 Electrical and Instrumentation Group, a Civil Group, a Welding and  
14 Non-Destructive Examination (NDE) Group, a Receiving Group, and  
15 a Document Control Group. The Mechanical Group is responsible  
16 for inspection of mechanical work such as pipe erection, equipment  
17 installation and pipe support erection. The Electrical and  
18 Instrumentation Group is responsible for inspection of electrical and  
19 instrumentation work such as cable installation, electrical equipment  
20 installation, and instrumentation installation. The Civil Group is  
21 responsible for inspection of structural work such as concrete  
22 placement, soils work, structural steel erection and coatings. The  
23 Welding and NDE Group is responsible for inspection of welding  
24 including visual inspection and non-destructive testing, such as  
25 radiography (X-ray), liquid penetrant and magnetic particle  
26 inspections. The Receiving Group is responsible for inspection of  
27 all safety related material and equipment received at the site. The

1 Document Control Group is responsible for inspection of documents  
2 in use to construct the plant to ensure they are current.

3 The Inspection Group has the inspectors who are responsible  
4 for the actual inspection of the work activities in accordance with  
5 the QA procedures. This inspection may be done in-process, such  
6 as welding inspection which has hold points at various steps prior  
7 to welding, during welding, and after welding; or the inspection  
8 may be done upon completion of a work activity, such as a  
9 mechanical pipe hanger. Once the hanger is completed, then the  
10 inspection is performed.

11 The Inspection Superintendent is responsible for all the  
12 inspections that are required by the Qualify Assurance Program and  
13 Quality Assurance Procedures. The Inspection Superintendent has  
14 reporting to him four Technical Supervisors or QA Engineers.  
15 There are two Technical Supervisors in welding and non-destructive  
16 examination. There is a Technical Supervisor for the mechanical  
17 area, and a QA Engineer for the electrical and instrumentation  
18 area, which also includes the receiving and document control areas.  
19 Each of these Supervisors has Supervising Technicians reporting to  
20 him who are the first line supervision of inspectors. For example,  
21 in the mechanical area there is a Supervising Technician for  
22 equipment activities, a Supervising Technician for piping activities,  
23 and a Supervising Technician for pipe support/restraint activities.

24 Supervising Technicians are generally qualified inspectors who  
25 have demonstrated through performance the ability to supervise and  
26 lead others. They are certified as a Level II Inspector in the  
27 discipline they supervise, or they will have inspectors who are  
28 certified to that level in their groups. In the Electrical Group,

1 there is a Supervising Technician for instrumentation and certain  
2 electrical activities and another Supervising Technician for the  
3 remaining electrical activities. There is a Supervising Technician in  
4 the civil area for the concrete, soils, structural steel, and coating  
5 work activities. There is a QC Supervisor who supervises the  
6 receiving and document control inspection personnel at Catawba.

7 In the welding area, there are two Technical Supervisors,  
8 Fred Bulgin and Charles Baldwin. They have reporting to them  
9 Supervising Technicians who have certified welding inspectors and  
10 inspectors who are certified in non-destructive examination  
11 techniques. The non-destructive examination techniques used at  
12 Catawba include magnetic particle inspection (MT), liquid penetrant  
13 inspection (PT), radiographic inspection, and ultrasonic inspection  
14 (UT). Radiography at Catawba is performed on a third shift  
15 because of safety aspects involved in radiography.

16 Q. WHAT IS THE FUNCTION OF THE QA TECHNICAL GROUP?

17 A. The QA Technical Group is headed by a Senior Quality Assurance  
18 Engineer, R. A. Morgan, and is composed of engineers and  
19 technicians whose primary function is to review the process control  
20 that is issued for the work at Catawba to insure it is correct, to  
21 review the inspection reports that are generated by the Inspection  
22 Group of QA, and insure those inspections have been completed and  
23 accepted. In addition, the Technical Group reviews documentation  
24 of materials received from vendors for certain items and releases  
25 the materials for use in the plant. This group also reviews and  
26 approves resolutions to inspection deficiency reports (R-2A's) and  
27 nonconforming items (NCI's).

1 Q. WHAT IS THE FUNCTION OF THE SURVEILLANCE GROUP?

2 A. The Surveillance Group is headed by a Supervisor, and has  
3 technicians who are responsible for conducting surveillance on both  
4 the construction work, and the inspection activities of the  
5 Inspection Group to assure that the work and the QC inspections  
6 are performed in accordance with QA procedures. This group is  
7 completely independent from the Inspection Group and the Technical  
8 Group. This supervisor has the freedom to schedule when  
9 surveillance will be done. He also schedules what areas will be  
10 looked at. Major construction areas are covered periodically, but  
11 whenever a specific problem area is found, that area may be looked  
12 at in more detail and more frequently. When a problem is  
13 identified, it is noted in a surveillance report and that problem may  
14 either be nonconformed or handled in accordance with a Quality  
15 Assurance procedure for correcting the deficiency or discrepancy.  
16 In addition, the Surveillance Supervisor can also notify the Project  
17 Manager or the Project QA Manager of a condition that has been  
18 observed. Corrective action may be required for such identified  
19 conditions. The surveillance reports are communicated to the  
20 Project Manager as a means of informing the Construction  
21 Department of the results of the surveillance activities.

22 Q. WHAT IS THE FUNCTION OF THE QA PLANNING GROUP?

23 A. The Planning Group in the QA organization at Catawba is  
24 responsible for disseminating schedule information to the various QA  
25 Groups. They are responsible for coordinating the QA work with  
26 the construction work schedule so that the inspections can be  
27 scheduled and accomplished in a timely manner.

1 Q. WHAT IS THE FUNCTION OF THE EMPLOYEE RELATIONS  
2 ASSISTANT ON SITE AT CATAWBA?

3 A. The Employee Relations Assistant is responsible for the personnel  
4 activities of the Quality Assurance Department at the Catawba site.  
5 The site QA organization is composed of about 230 employees. The  
6 Employee Relations Assistant handles personnel matters for these  
7 employees. The Employee Relations Assistant is also involved as an  
8 aide to employees in any recourse that the employee might be  
9 involved in, and coordinates personnel matters with the QA Manager  
10 of Administrative Services located in Charlotte.

11 Q. HOW DID THE QA SITE ORGANIZATION DIFFER DURING 1981?

12 A. In 1981 the QA organization was basically the same, except for some  
13 differences in reporting lines. We did not have a position of  
14 Inspection Superintendent in 1981. The various technical  
15 supervisors in charge of the inspection areas reported directly to  
16 the Project QA Engineer, who at that time was the senior QA  
17 person on the site. The Surveillance Group was headed by one of  
18 the QA Engineers, and we did not have the Employee Relations  
19 Assistant or Planning Supervisor positions. The 1981 organizational  
20 structure is set forth on the chart which is Attachment 4 to my  
21 testimony.

22 Q. DESCRIBE THE QA-CONSTRUCTION MANAGEMENT INTERFACE AT  
23 THE PROJECT SITE LEVEL.

24 A. Overall, there is a close interface between the management of the  
25 Quality Assurance Department onsite and the management of the  
26 Construction Department onsite. There are periodic meetings held  
27 by site Construction and QA supervision to discuss program  
28 implementation; inspection supervisors are regularly discussing the

1 status of the work with Construction Department supervision;  
2 Quality Assurance personnel regularly attend onsite meetings held  
3 by the Construction department to review the status of the project;  
4 inspection report trend analyses are performed and reviewed by  
5 Construction and QA management on site; surveillance of  
6 construction and QA activities is performed periodically and the  
7 results reported to construction and QA management; and exit  
8 meetings conducted by the Audits Division of the Quality Assurance  
9 Department and by the NRC as well as other audit teams are  
10 attended jointly by Construction and QA Projects Division  
11 personnel.

12 Q. DESCRIBE THE QA-DESIGN ENGINEERING INTERFACE AT THE  
13 PROJECT SITE LEVEL.

14 A. The QA-Design interface primarily exists through the specification  
15 of design requirements in specifications and drawings which are  
16 implemented in the course of fabrication and erection. The contact  
17 with Design Engineering personnel generally takes place in  
18 conjunction with Construction Technical Support and QA Technical  
19 Services Division personnel. As Design Engineering personnel visit  
20 the Catawba Nuclear Station, there is usually general discussion  
21 between them and Quality Assurance personnel in the Projects  
22 Division.

23 Q. EXPLAIN THE ROLE OF THE INSPECTOR IN THE OVERALL QA  
24 PROGRAM.

25 A. The QA function is carried out at Catawba primarily through the  
26 inspectors. The QA Department has developed detailed Quality  
27 Assurance procedures that set forth the specific aspects of various  
28 construction processes that are to be inspected, and when they

1 should be inspected. Some processes, such as some classes of  
2 welding, will have various required in-process inspection steps, or  
3 "hold points". A hold point is a point at which work must be  
4 inspected before the work can continue. When hold points are  
5 established, generally process control travelers, which follow the  
6 work, are used to indicate the inspections required and the  
7 acceptability of those inspections. In other work areas, the work  
8 is completed and then it is inspected, and a report is made of its  
9 acceptability. This is the primary method by which the work is  
10 verified to meet the design specifications and Quality Assurance  
11 requirements. The QA procedures contain the points at which  
12 inspections are completed, and provide the means for handling  
13 discrepancies discovered during inspections.

14 Q. HOW DO INSPECTORS KNOW THE DIFFERENCE BETWEEN  
15 ACCEPTABLE AND UNACCEPTABLE WORK?

16 A. Inspectors determine acceptability by referring to acceptance  
17 standards established in QA Procedures and Design Specifications.  
18 Prior to becoming certified, Inspectors must complete training and  
19 testing in the QA Procedures they will be using. This process  
20 assures their familiarity with the procedures used to determine  
21 acceptance. During inspections the Inspector compares the work  
22 being inspected to these standards to determine its acceptability.

23 Q. WHAT DOES THE INSPECTOR DO WHEN HE IDENTIFIES A  
24 DISCREPANCY BETWEEN THE WORK AND THE REQUIREMENTS SET  
25 FORTH IN THE PROCEDURES, AND HOW ARE THESE  
26 DISCREPANCIES RESOLVED.

27 A. The Quality Assurance Program in use at Duke Power Company  
28 during construction at Catawba has several means available to

1 correct discrepancies that are discovered by inspectors. There are  
2 four basic methods available, three of which do not involve writing  
3 an NCI.

4 (1) The first, which is sometimes referred to in some of the  
5 procedures as the "hold point" method, consists of an Inspector  
6 making the craft aware of a deficiency, the deficiency being  
7 corrected to the satisfaction of the inspector, and the inspector  
8 signing off the item. In this method, the item is not signed off  
9 until all necessary action has been completed, and the inspector is  
10 satisfied. This "hold point" method -- is common, and has been in  
11 use at Catawba throughout construction.

12 (2) The second is the "process control" method, whereby the  
13 inspection report itself provides the means to document a repair.  
14 This method is used primarily in welding where, for example, a  
15 final visual inspection might detect defects which would be recorded  
16 on the inspection form. The procedure for the inspection and for  
17 making the weld would provide instructions on how to correct that  
18 item (or that defect) and then provide instructions for reinspection.  
19 All of this would be documented on the Process Control Form, which  
20 serves both as a documentation of the work and the inspection of  
21 that work.

22 (3) The third method is a Deficiency Report Form. There have  
23 been several different procedures available to inspectors under this  
24 method. The procedure currently in use is the Discrepancy Report  
25 Form, commonly referred to as an R-2A. By this method, the  
26 inspector would document the problem he identified, and that would  
27 then be sent to the Construction Technical Support group at the  
28 site. That group would determine necessary corrective action. If

1 such action involved the craft redoing work, it would go to the  
2 craft to be done. The form would then be routed back to the  
3 inspector who would reinspect the work and, if satisfied, sign off  
4 on it.

5 (4) Inspectors may use QA Procedure Q-1, "Control of  
6 Nonconforming Items," and its corresponding form Q-1A,  
7 "Nonconforming Item Report," commonly referred to as an NCI.  
8 This method is used when the discrepancy is not handled by one of  
9 the methods discussed above.

10 The item is described on a Nonconforming Item Report form  
11 (Q-1A) and this form is signed by the originator. It is then  
12 serialized, and presented to designated individuals in QA for  
13 review. These individuals review the form for completeness and  
14 validity. If the report is found to be invalid at this point the  
15 reason is explained on the form, a copy is provided to the  
16 originator, and the form is filed. After review, QA assigns the  
17 report to the appropriate department for resolution, and assigns a  
18 review for reportability under 10CRF, Part 21 and §50.55(e) to the  
19 appropriate department.

20 The item is then evaluated and the disposition is placed on the  
21 form. If a department other than QA provided the disposition, the  
22 disposition is reviewed technically by designated individuals from  
23 the department providing the disposition. The disposition is then  
24 reviewed and approved by designated individuals in QA for clarity  
25 and completeness. At this point the QA reviewer determines if  
26 Significant Corrective Action Evaluation (Procedure R-6) is  
27 required. If he determines that such evaluation is required, it is

1 indicated on the form. Any action required, such as rework or  
2 reinspection, is added to the form and approved by QA.

3 The form is routed to the groups responsible for any action.  
4 After they complete their action they sign the form. When all  
5 action is complete the form is set to QA for a final review to assure  
6 it is complete.

7 The originator tags the item when practical to indicate it is  
8 non-conforming by use of an NCI tag, Form Q-1B. This prevents  
9 further work on the item unless so allowed on the form.

10 Additionally, all R-2A "Discrepancy Report" forms are reviewed  
11 for possible upgrading to an NCI. R-2A discrepancies are required  
12 by QA Procedure to be upgraded to an NCI if the discrepancy  
13 represents any of the following:

- 14 • a design deficiency (other than minor interpretations,  
15 clarifications, and editorial changes)
- 16 • requires Design evaluation
- 17 • a manufacturer discrepancy (other than minor)
- 18 • requires extensive rework
- 19 • a bypassed inspection hold point
- 20 • an item found at other than a preplanned activity and no  
21 other required activities were planned that would check  
22 for that type discrepancy.

23 Q. HOW IS THE DISCREPANCY REPORT FORM, R-2A, PROCESSED  
24 AFTER IT GOES TO THE CONSTRUCTION TECHNICAL SUPPORT  
25 GROUP?

26 A. The Construction Technical Support Group is made up of engineers  
27 and technicians who review the discrepancy and determine what  
28 action should be taken to resolve the discrepancy. That

1 determination would then be indicated on the form and go to the  
2 craftsman involved who would be responsible for taking the action,  
3 signing on the form, and returning the form to the inspector for  
4 reinspection of the activity if required. This group also reviews  
5 the R-2A for upgrading to an NCI based on the criteria contained  
6 in the Procedure and listed above. After the action is completed,  
7 the form goes to QA for a final approval.

8 Q. DESCRIBE THE ROLE OF QC AND QA IN THE ORIGINATION AND  
9 RESOLUTION OF NON CONFORMING ITEMS WHILE YOU WERE  
10 SENIOR QC ENGINEER PRIOR TO 1981.

11 A. I was the Senior QC Engineer at Catawba from 1974 until February  
12 1981. During this period there were several revisions to the  
13 Nonconforming Item Procedure (Q-1'); but, my role was essentially  
14 unchanged during this period.

15 When an inspector determined that a deficiency could not or  
16 should not be handled by a method other than the nonconforming  
17 method, he would obtain a nonconforming item form (form Q-1A)  
18 and complete the top portion of the form. If there was a question  
19 in the inspector's mind as to whether an item was in fact  
20 nonconforming, he might talk with his supervision to make a  
21 determination. If this determination was that the item was not, in  
22 fact, nonconforming, or that another method would be appropriate  
23 to handle the item, then the form (Q-1A) would not be completed or  
24 would be discarded. If the form was completed, the inspector  
25 would describe the item and its condition along with other  
26 information, such as location, on the top part of the form. The  
27 inspector would then sign the form as originator. A review of the

1 form by the inspector's first line supervisor was sometimes  
2 conducted at this point, but was not required.

3 Next, the NCI procedure required review by a Senior  
4 Engineer. Normally this was the senior engineer in the originator's  
5 section. For example, I was the Senior QC Engineer and reviewed  
6 most of the NCI's originated by the QC group.

7 There was no requirement to have a serial number assigned to  
8 the NCI form at this point, however, usually a number had been  
9 obtained by the originator at this point. An inspector might not be  
10 sure the item was nonconforming and would therefore intentionally  
11 not have a serial number assigned prior to this review. This was  
12 not the normal case, and the vast majority of NCI's submitted to me  
13 for review already had a serial number assigned to them. The  
14 assignment of a serial number was purely a clerical function and in  
15 no way involved a review of the NCI for validity. A serial number  
16 was assigned by the facilities group in construction simply because  
17 they maintained the NCI log book.

18 The typical situation was for the inspector to give me a  
19 completed NCI form that was signed and had a serial number. I  
20 would review the NCI for accuracy, completeness, and validity, and  
21 I might request that additional information be added to the form by  
22 the originator. This review was to determine:

- 23 • if the item is clearly identified;
- 24 • if the problem is clearly described;
- 25 • what requirement has been violated and is it identified;
- 26 • whether all the available information is given such that  
27 the party assigned resolution will have all they would  
28 need to understand the deficiency;

- 1           • if the form is legible; and  
2           • if there is another, more appropriate way to handle the  
3           item;

4           If the NCI form needed work on clarity or legibility, or more  
5           information was needed, I would explain what was needed to the  
6           originator and direct him to obtain the information or clarify it and  
7           resubmit the form to me. If I had questions about its validity or  
8           thought it was invalid, I would discuss it with the originator. This  
9           discussion might also include the inspector's supervisor. If in my  
10          judgment, I determined that the NCI was not valid, I would explain  
11          this to the originator and handle it in one of two ways, depending  
12          on whether the form had a serial number on it. If it had a serial  
13          number, I would either explain on the form why it was invalid or  
14          go ahead and approve it, or ask the QA group to assign it to me  
15          for resolution, in which case I would resolve the NCI by stating  
16          why it was invalid. In both cases the form would be forwarded to  
17          QA. If it did not have a serial number, I would return it to the  
18          originator explaining why it was not a valid NCI. If the inspector  
19          expressed disagreement about the validity of the NCI I would  
20          usually sign it. In some cases I would direct that the discrepancy  
21          be handled by another method, such as a Corrective Action Notice  
22          (R-2A) or by informing the craft to correct it.

23          At least 17,000 NCI's have been originated at Catawba. To  
24          the best of my recollection, only a few per year, perhaps as many  
25          as 20, would be invalidated during this kind of review. Most of  
26          these situations arose because the inspector had a question as to  
27          whether the discrepancy should be an NCI. More often than not, I

1 concluded that these discrepancies would probably be best handled  
2 as an NCI and would sign the NCI form.

3 The NCI Procedure in effect at this time stated that if an NCI  
4 was determined to be invalid, the reason should be stated in the  
5 description block. My interpretation of this procedure was that  
6 this provision applied to NCI's that had been logged and serialized.  
7 Also, since the NCI procedure was used for nonsafety related  
8 items, many times I would determine an NCI to be invalid because it  
9 was not on a safety related system, and the same QA requirements  
10 did not apply. Some of the deficiencies identified by inspectors  
11 would not be valid nonconformances on nonsafety related systems.

12 After review by the Senior Engineer the NCI was sent to the  
13 QA group for assignment of resolution responsibility. In June  
14 1978, a block was added to the NCI form to include a QA review of  
15 the origination also. This change was inconsequential because the  
16 form was always routed to QA after Senior Engineer review.

17 The QA group would determine who would be assigned to  
18 resolve the NCI and route it to them through the facilities group so  
19 the log could reflect the assignment. The resolution could be  
20 assigned to either the Design Engineering, Construction or QA  
21 departments depending on what requirement was violated and  
22 whether or not Engineering evaluation was required.

23 The resolution or disposition would be determined and added to  
24 the form and approved by a competent individual for technical  
25 content. This approval was not required for resolutions developed  
26 by QA because it would get the review automatically. The QA  
27 group would then review and approve the resolution and indicate  
28 any action to be taken.

1           If inspection was required as part of the action, it would  
2 involve the QC group and usually the originator of the NCI.  
3 Action taken would be documented on the form by sign-offs and the  
4 completed form sent to QA for final review to ensure that all action  
5 had been taken. The NCI was then considered closed.

6 Q. IS THERE ANYTHING IMPROPER OR INCONSISTENT WITH A  
7 SOUND QUALITY ASSURANCE PROGRAM FOR A SUPERVISOR TO  
8 REVIEW AN NCI WRITTEN BY AN INSPECTOR AND VOID THE NCI  
9 BECAUSE IN A SUPERVISOR'S JUDGMENT, THE NCI SHOULD NOT  
10 BE WRITTEN.

11 A. There is nothing improper or inconsistent with a sound Quality  
12 Assurance program for QA or QC supervision to review NCI forms  
13 and give direction to inspectors, or other originators, as to the  
14 validity of the NCI, or the appropriateness of using an NCI or  
15 other methods to handle discrepancies.

16           A major function of QA and QC supervision is to make  
17 technical judgments on problems identified by inspectors or others.  
18 The supervisors in QA and QC at Catawba are experienced in the  
19 inspection areas reporting to them, and are well qualified to make  
20 these technical judgements.

21           The Duke QA Program at Catawba provides for checks on this  
22 process. For example, audits of the work of both craft and  
23 inspectors are continually conducted by groups independent from  
24 the supervisors. In addition, periodic audits are conducted by  
25 groups independent of Duke to ensure that the QA Program is  
26 functioning. For example, we have the Joint Utility Management  
27 Audit (JUMA) yearly, audits by on site Authorized Nuclear

1 Inspectors (ANI), and periodic surveys by ASME teams to maintain  
2 ASME N-stamp authorization, and NRC inspections.

3 Q. YOU SUBMITTED A SET OF RECOMMENDATIONS TO MR WELLS  
4 PRIOR TO TASK FORCE I ISSUING ITS REPORT. ONE OF THOSE  
5 RECOMMENDATIONS WAS TO DISCONTINUE THE PRACTICE OF  
6 VERBALLY VOIDING NCI'S. WHY DID YOU RECOMMEND  
7 DISCONTINUANCE OF THIS PRACTICE?

8 A. Through my interview with Task Force I and discussions with  
9 Mr. Morgan at the site, I realized that some welding inspectors  
10 considered an effort to reduce the number of NCI's on minor items,  
11 by handling them using other established methods, improper. With  
12 this realization I recommended that what has been referred to as  
13 "verbally voiding NCI's" be discontinued. This was done in early  
14 January 1982. Mr. Morgan, with my concurrence, instructed the  
15 Technical Supervisors and QA Engineers not to void NCI's.

16 Both my and Mr. Morgan's reasoning was that if this effort to  
17 reduce minor NCI's in the welding area was being interpreted as  
18 lack of support by the inspectors, then we should discontinue  
19 voiding NCI's until the QA Procedures could be developed which  
20 would remove the concern. The QA procedure to handle this  
21 problem, R-2, was implemented in July, 1982. There was never  
22 any effort to avoid resolving deficiencies; but rather, to handle  
23 them in an appropriate way.

24 Q. WHAT OPTIONS WERE AVAILABLE TO A WELDING INSPECTOR WHO  
25 BELIEVED THAT A SUPERVISOR MADE AN INCORRECT JUDGMENT  
26 IN INSTRUCTING HIM TO VOID AN NCI?

27 A. Any inspector who felt that a supervisor had made an incorrect  
28 judgement in instructing him to void an NCI had not only the option

1 but the responsibility to pursue his views about that decision  
2 through the higher levels of supervision and management. In 1977  
3 this option was formalized in the Construction Department  
4 "Personnel Policy and Practices" booklet under "Employee  
5 Relations." In 1979 this option was formalized again in Duke's  
6 "Management Procedures," "Employee Recourse Procedure"  
7 (8901-0012). All QC inspectors were in the Construction  
8 Department at this time, and were aware of these procedures.

9 Q. ANOTHER RECOMMENDATION WAS THAT THE CHARLES BALDWIN  
10 AND ART ALLUM, TECHNICAL SUPERVISORS, SWITCH POSITIONS.  
11 WHY DID YOU MAKE THIS RECOMMENDATION?

12 A. In January 1982 when it became evident that several of the welding  
13 inspector concerns involved relations between people, including  
14 Charles Baldwin, I had several discussions with him about the  
15 communications channels between him and the inspectors. At that  
16 time, Mr. Baldwin was the Technical Supervisor over the three  
17 welding inspector crews. It was apparent to me, through these  
18 discussions, that communications between Mr. Baldwin and some of  
19 the inspectors were strained. He did not feel he had effective  
20 communications with them. I felt that switching Mr. Baldwin and  
21 Mr. Allum would help to improve these lines of communication. Mr.  
22 Allum was qualified for the Technical Supervisor position over  
23 welding inspection by virtue of his background and experience. He  
24 had also served in that position at our Cherokee project. Mr.  
25 Baldwin was qualified for Mr. Allum's position of Technical  
26 Supervisor over NDE by virtue of his background and experience.

27 I recommended that Mr. Baldwin and Mr. Allum switch  
28 positions. Mr. Wells, my supervisor, concurred and the switch was

1 made in late January 1982. After the switch, Mr. Baldwin was the  
2 Technical Supervisor over two NDE crews and Mr. Allum was the  
3 Technical Supervisor over three welding inspection crews. I  
4 believe this lateral move was effective in keeping lines of  
5 communication between inspectors and supervisors more open than  
6 they otherwise would have been.

7 Q. DESCRIBE THE CHANGES AT THE CATAWBA SITE SINCE THE  
8 EXPRESSION OF CONCERNS BY THE WELDING INSPECTORS AND  
9 THE IMPLEMENTATION OF THE TASK FORCE RECOMMENDATIONS.

10 A. There were several changes that occurred at Catawba, some as a  
11 result of the welding inspector concerns and implementation of the  
12 recommendations of the task forces that investigated those  
13 concerns; other changes were the result of our ongoing effort to  
14 improve the way we do things. Several procedures were revised  
15 and clarified as a result of recommendations from the Task Forces.  
16 Procedure Q-1, The Nonconforming Item procedure, was revised to  
17 clarify what work activities could be allowed to continue on items  
18 nonconformed. Procedures H-4 and H-5, which control the  
19 identification of piping materials and structural steel materials, were  
20 clarified as they related to the marking requirements for  
21 identification of those materials. Procedure L-80, which is the  
22 Visual Workmanship Standard for Welds, was modified by adding a  
23 section that gave acceptance criteria for rounded indications.  
24 Various other local site procedures or construction procedures were  
25 revised as a result of specific recommendations of the Task Forces.

26 The manner of handling disputes or disagreements between  
27 inspectors and their supervision or management was changed. A  
28 flow chart was developed for training QA supervision at Catawba in

1 how these situations should be handled. This flow chart has come  
2 to be known as "Stickman" and is attached as Attachment 2. Any  
3 inspector question, concern, or area of disagreement should be  
4 discussed with his supervisor and resolved at that level if possible.  
5 If the supervisor is unable to answer the question or address the  
6 concern because it may be out of his area of expertise or he may  
7 not know the answer, then he would refer it to this supervision,  
8 which is the second level supervision in QA at Catawba. The flow  
9 chart indicates that this level would obtain the answer or resolution  
10 to the concern or develop the answer himself if its in his area of  
11 expertise. If the answer is obtained from another source, Design  
12 Engineering, Quality Assurance Technical Services Divisions, or a  
13 Level III Inspector in welding and NDE, then it would be  
14 documented. The questions and answers generated under the  
15 "Stickman" process are supplied to the Technical Services Division  
16 of Quality Assurance for review and possible incorporation into QA  
17 procedures, and would be communicated to the inspector through  
18 his first line supervision. The inspector can pursue a recourse if  
19 he is not satisfied with the answer. This process was explained to  
20 the inspectors during the implementation of the Quality Recourse  
21 Procedure. It has been clearly communicated to inspectors that  
22 they have the right and the responsibility to pursue matters  
23 involving quality of construction at Catawba. In addition, training  
24 of Quality Assurance Supervision emphasized that supervisors  
25 should not direct inspectors to accept items that the inspector may  
26 not feel should be accepted, or may not be comfortable accepting.  
27 The training included instructions on what to do in this situation.  
28 If the supervisor is qualified and certified to perform the

1 inspection, and is comfortable that the item is acceptable, the  
2 supervisor should accept the work.

3 We now have periodic meetings between Quality Assurance  
4 Management and Construction Engineering and Craft personnel to  
5 discuss problems that may be encountered in the field in the use of  
6 process control information. These meetings have been conducted  
7 in the major work disciplines and have been successful in helping to  
8 identify and resolve problems that may exist in the use of process  
9 control. Additionally, Quality Assurance Supervisors are involved  
10 to a greater extent in the review of Quality Assurance procedure  
11 revisions. As a result of Train-The-Trainers Program started by  
12 the Quality Assurance Technical Services Division, sessions are held  
13 with site Quality Assurance Supervisors to discuss procedure  
14 revisions. These sessions include discussion of the reasons behind  
15 the intent of the revisions. In addition to these sessions, proposed  
16 revisions to QA Procedures are routed to appropriate site  
17 supervision for review and comment. These changes have resulted  
18 in a better understanding of QA Procedure revisions.

19 Some of the changes that have occurred as a result of the  
20 Non-Technical Task Force have involved the use of a standard color  
21 hard hat for Quality Assurance personnel so that these personnel  
22 are easily identified and feel more part of a team, a departmental  
23 newsletter, and initiation of Quality Assurance forums. Through  
24 the Forum Procedure, Quality Assurance employees hold periodic  
25 meetings with their second level supervision to discuss any item.

26 New departmental procedures were implemented in Quality  
27 Assurance, and inspectors and supervisors were trained in these  
28 procedures. These departmental procedures were Recourse, Quality

1 Recourse, and a Harassment Procedure. Procedures have existed at  
2 the Corporate Level in these areas, but these procedures were  
3 developed in greater detail for the Quality Assurance Department  
4 and implemented in July of 1982. Inspectors were instructed in the  
5 existence of these procedures and how to use them.

6 In addition to changes that were a direct result of the Task  
7 Force recommendations, there have been other changes that were  
8 being considered prior to the concerns and have been implemented  
9 since that time. One of these areas involves the Quality Assurance  
10 procedures regarding nonconforming items and deficiency reports.  
11 In 1981, we were not using Corrective Action Procedure, Procedure  
12 R-2 in the welding area at Catawba. This procedure was used to  
13 handle minor discrepancies discovered by inspectors in the other  
14 areas at Catawba, electrical, mechanical, and civil. The reason this  
15 procedure had not been used in the welding area was that welding  
16 involved more in-process inspection, such as cleanliness and fitup  
17 inspections; and, therefore, the process control had established  
18 hold points. There did not appear to be a need to use another  
19 procedure to handle corrective action for items that might be  
20 discovered during these inspections. This meant that any  
21 deficiencies or discrepancies would be handled either through the  
22 hold point process or a nonconforming item. This resulted in more  
23 of the minor deficiencies and discrepancies in the welding area  
24 being documented on Nonconforming Items Reports than in the other  
25 areas of inspection. Revisions to Procedure R-2 were developed  
26 and were implemented in June of 1982. The use of R-2 was  
27 expanded to include discrepancies discovered by inspectors at any  
28 planned inspection point they might be carrying out where no other

1 instruction existed to handle the discrepancy. The revision  
2 included a review of all discrepancy reports to see if they should  
3 be upgraded to a nonconforming item status. Procedure R-2 became  
4 a primary method by which inspectors in all areas would document  
5 discrepancies found at inspection points, if they were not handled  
6 by informing the Crafts of the problem and having the problem  
7 corrected.

8 All of these changes that I have discussed have had the effect  
9 of improving the operation of the Quality Assurance Program at  
10 Catawba. It is our objective to continue to look for ways that  
11 program may be improved in the future. This is a characteristic of  
12 any good program, whether in Quality Assurance, or Construction,  
13 or any other activity. This is not to say that the Quality  
14 Assurance Program was not effective before these changes were  
15 made. The QA program was effective before these changes. These  
16 changes simply resulted in better understanding, better  
17 communications, and a smoother operating Quality Assurance  
18 Program.

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

3  
4  
5  
6

Larry R. Davison  
Larry R. Davison

7  
8

9 Sworn to and subscribed before me  
10 this 24<sup>th</sup> day of September, 1983.

11  
12  
13  
14

William J. Hand  
Notary Public

15

16 Commission Expires Sept. 24, 1985

RESUME

LARRY R. DAVISON

EDUCATION:

Graduate of Georgia Institute of Technology (Georgia Tech)  
Bachelor of Science in Mechanical Engineering, 1967

Completion of U. S. Naval Nuclear Training Schools  
Six months, nuclear theory  
Six months, nuclear application (prototype)

Completion of U. S. Naval Submarine School  
Six months, submarine systems and operations

Welding, Theory and Application, 40 hours, University of Tennessee

Radiographic Film Interpretation, 40 hours, Magnaflux Corporation

Duke Power Company Management Training  
Lake Hickory Training Center  
Effective Management

Registered Professional Engineer in North Carolina (8856) and South  
Carolina (7456)

EXPERIENCE:

U. S. Navy 1967-1971, Ensign - Lieutenant

1½ years schooling on nuclear systems and operation and submarines

2½ years assigned to an operating Ballistic Missile Nuclear  
Submarine, USS Nathaniel Greene.

Served as Auxiliary Division Officer, Damage Control Assistant  
and Communications Officer.

Qualified in Engineering Plant as Engineering Officer of the  
Watch (EOOW)

One year in the shipyard undergoing major overhaul,  
conversion and nuclear refueling.

Duke Power Company, 1971 - Present

1971 - 1973 Assistant Field Engineer, Oconee Nuclear Station

Worked in the Construction Department Technical Support  
welding area. Writing welding construction procedures and  
reviewing and solving welding problems.

1973 - 1974 Associate Field Engineer, Oconee Nuclear Station

Worked in the Construction Department Technical Support welding area. Responsible for welding visual and nondestructive testing (NDE).

1974 - 1981 Senior Quality Control (QC) Engineer, Catawba Nuclear Station

Worked in the Construction Department QA area. Responsible for all QA inspection in construction work at Catawba.

1981 - 1982 Quality Assurance (QA) Manager Projects, Charlotte General Office

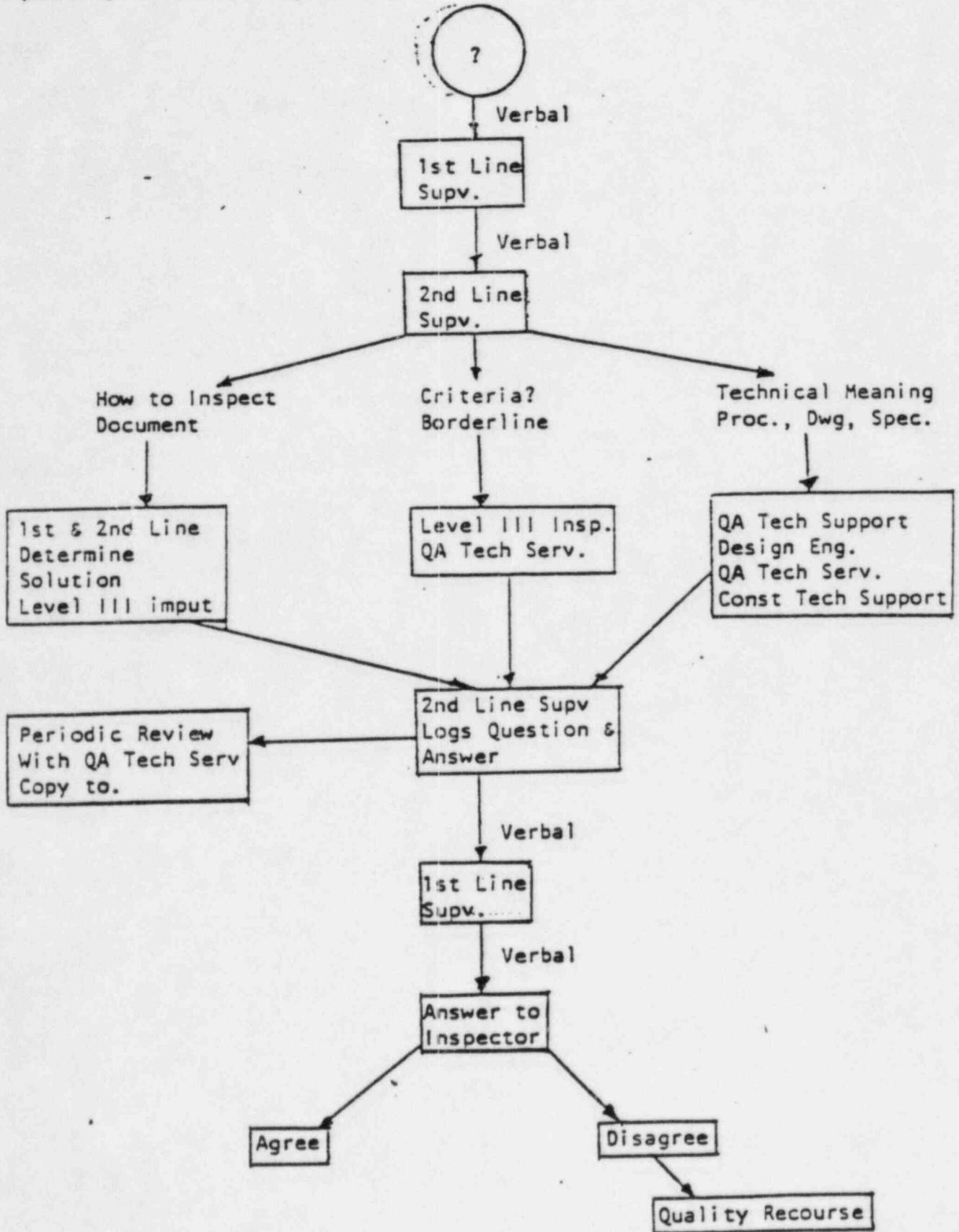
Responsible for all QA activities at three nuclear sites under construction, McGuire, Catawba, and Cherokee.

1982 - Present Project Quality Assurance (QA) Manager, Catawba Nuclear Station

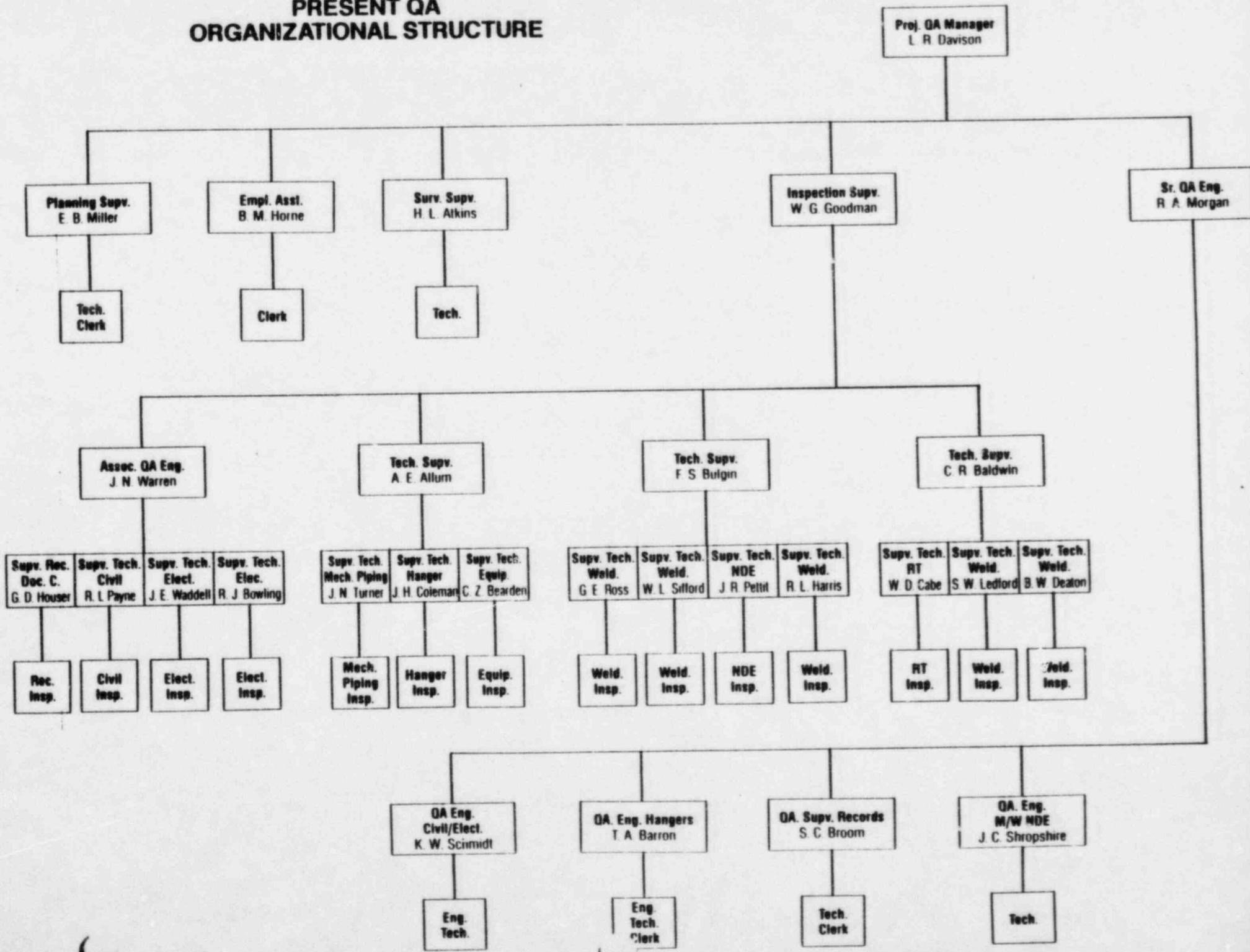
Responsible for all QA activities at Catawba Nuclear construction site. Includes inspection, documentation review and filing, review and approval of construction procedures and deficiency reports.

Objective 9.3.a.1 ; 9.3.a.2 ; 9.3.a.3

Discussion: Process for interpreting QA Procedures and answering QA Inspector (cont'd) technical questions.



# PRESENT QA ORGANIZATIONAL STRUCTURE



# ORGANIZATIONAL STRUCTURE — DECEMBER '81

