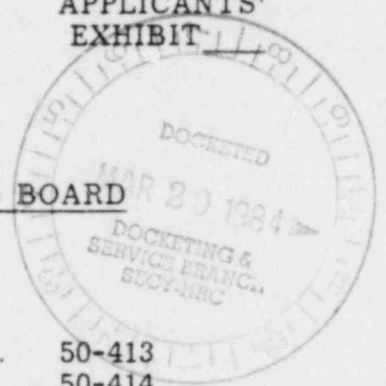


A-19
10/21/83

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

APPLICANTS'
EXHIBIT



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

Docket Nos. 50-413
50-414

TESTIMONY OF JOE C. SHROPSHIRE

- 1 Q. STATE YOUR NAME AND BUSINESS ADDRESS.
- 2 A. My name is Joe C. Shropshire, 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 a Quality Assurance Engineer, responsible for managing and
- 7 directing the Quality Assurance engineering and technical support
- 8 group in the mechanical, welding and nondestructive examination
- 9 areas during construction of the Catawba Nuclear Station. There
- 10 are currently eight technicians who work in my group. It is the
- 11 responsibility of this group to assure that the QA program is
- 12 implemented and carried out in the areas of Mechanical piping,
- 13 equipment, and system testing, welding, and nondestructive
- 14 examination (NDE). It is our responsibility to see that work
- 15 activities performed by the craft is controlled in accordance with
- 16 procedures and that work is documented accordingly; to assure that
- 17 the work is inspected appropriately by placing inspection hold
- 18 points and by directing the QA review of the documentation to see
- 19 that the work is done and inspected properly; and to work with
- 20 inspection personnel to solve inspection and procedural questions.

1 We also assist the records group in reviewing and solving
2 documentational problems, and perform research on code matters
3 and nonconforming items.

4 I review and approve all construction procedures in my area of
5 responsibility, and review for approval nonconforming items that are
6 brought to me by construction personnel, QA inspection personnel,
7 and QA support personnel.

8 I am responsible for training those who work for me and on
9 occasion those who work for others. This includes training in QA
10 procedures, construction procedures, and safety and personnel
11 training.

12 I interface on a regular basis with auditors and inspection
13 agencies including the NRC.

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

17 A. I graduated with a BS in Civil Engineering from Virginia
18 Polytechnic Institute in 1967 and did some graduate work in 1969.
19 I am a Registered Professional Engineer. In my 16 years since
20 graduation, I have spent 7 years in the academics ranks as an
21 Instructor/Administrator and 9 years in industrial practice. My
22 prior experience and qualifications are set forth in more detail in
23 my resume, which is Attachment 1 to my Testimony.

24 I came to Duke Power in 1978, where I was assigned to
25 develop, coordinate, and implement a training program for
26 certification of QC Civil inspection personnel in the areas of
27 structural steel, concrete, soils, and coatings. In February 1979, I
28 was transferred to Catawba to assume the duties of QA

1 Engineer-Mechanical, Welding, NDE. At that time I also had the
2 responsibility for QA records. On June 1, 1981, I gave up the
3 responsibility for QA records to the newly organized QA Records
4 group. At that time I took on the additional responsibilities for the
5 QA Hanger program. In October, 1981 a new surveillance group
6 was created and I gave up my surveillance functions. On
7 September 1, 1982, a separate QA Hanger group was formed and I
8 passed those responsibilities to the new supervisor.

9 I have attended numerous seminars and meetings and have
10 taken many technical and management courses over the last 16
11 years. Some topics included in those courses and seminars were
12 structural steel design, radiation safety, fatigue fracture,
13 nondestructive testing, welding, pressure vessel and piping failure
14 analysis, ASME Code training, and management training.

15 Q. DESCRIBE THE FUNCTIONS WITHIN THE QA ORGANIZATION AT
16 THE CATAWBA SITE WHICH YOU ARE RESPONSIBLE FOR.

17 A. I am responsible for implementation of the QA program in the
18 mechanical, welding, and NDE areas. I am responsible for the
19 review of documentation and procedures; for the generation of
20 checklists that the QA Records group uses to review documentation;
21 for the implementation and review of the Q-1 program; for the
22 implementation of the NDE program, including QA film review; and I
23 am a resource person for QA inspection personnel.

24 Q. HOW DID THE QA FUNCTIONS REPORTING TO YOU DIFFER
25 DURING 1981?

26 A. The QA functions performed by me were the same as previously
27 stated with the following exceptions. In June, 1981, a separate QA
28 Records group was created and I gave up the responsibility for

1 records review and storage. At the same time I took on the
2 responsibility for QA Hangers. In October, 1981 the responsibility
3 for surveillance in my areas of responsibility was turned over to a
4 surveillance group.

5 In February 1, 1981, QC became a part of QA and the
6 interface with the inspection group was greatly increased. QA
7 became the support group for inspectors questions on procedures,
8 inspections, techniques, and other matters.

9 Q. EXPLAIN THE ROLE OF THE QA ENGINEER AS A PART OF THE
10 OVERALL QA PROGRAM.

11 A. The QA Engineer provides supervision and direction for the
12 implementation of the QA program in specific disciplines as required
13 by design specifications, and various codes and standards. The
14 QA Engineer provides for the timely and appropriate response to
15 resolution of NCI's; provides coordination of work-related activities
16 with other organizational units, departments and outside vendors;
17 provides for the preparation and revision of QA procedures in
18 compliance with required regulations and codes; provides for
19 compliance with construction schedules for systems flush, hydro,
20 and turnovers; provides the technical assistance to QA inspectors
21 for work related activities; and maintains a productive and
22 motivated staff through human resource management and the
23 enforcement of personnel policies.

24 Q. DESCRIBE THE ROLE OF THE QA ENGINEER IN THE REVIEW OF
25 NONCONFORMING ITEMS WHILE YOU HAVE BEEN QA ENGINEER.

26 A. The QA Engineer is responsible for the review and approval of
27 nonconforming items. This includes review at the initiation stage
28 for completeness, accuracy, and clarity. At this time, the review

1 also determines if the NCI is valid or invalid. I also review the
2 disposition and actions stated to assure that the disposition is
3 accurate, reflects true conditions, addresses the problem, and
4 states the ultimate disposition of the item. I also review the action
5 assignments to assure that they accomplish the tasks necessary to
6 implement the disposition of the NCI. Throughout the review
7 process, I check to see that all statements are clear, concise, and
8 appropriate to address the problem and that compliance with QA
9 procedures, code, and design documents are met.

10 If other procedures describe the appropriate corrective action
11 for the item or the problem identified turns out to be a
12 "non-problem," then the NCI may be determined invalid and
13 processing terminated at the initial review stage. The reason for
14 determining an NCI invalid is discussed with the originator. The
15 reason for voiding the NCI is stated on the NCI, in the
16 "disposition" section of the form. The originator is given a copy
17 and the original is filed in the NCI files in the vault.

18 Q. IS THERE ANYTHING IMPROPER OR INCONSISTENT WITH A
19 SOUND QUALITY ASSURANCE PROGRAM FOR A QA ENGINEER OR
20 OTHER SUPERVISOR TO REVIEW AN NCI WRITTEN BY AN
21 INSPECTOR AND VOID THE NCI BECAUSE IN JUDGMENT THE QA
22 ENGINEER OR SUPERVISOR, THE NCI SHOULD NOT BE WRITTEN.

23 A. It is not inconsistent with the QA program for questions of
24 nonconformance to be answered at the supervisor's level. Questions
25 of nonconformance do not become NCIs until the QA review is
26 performed. At that time it is determined whether the question is a
27 nonconformance and thus an NCI or that the question raised is not
28 a nonconformance and may be answered in another manner.

1 Supervisors are trained in QA procedures and how they are to
2 be implemented. Supervisor's are experienced personnel and
3 knowledgeable in the areas supervised and are responsible for
4 making decision's relating to nonconformances.

5 If the inspector was not satisfied with the decision to declare
6 the NCI invalid, he should pursue the question with higher
7 supervision or QA support groups. Since 1982, an inspector has
8 the option to file a technical recourse and he is encouraged to do
9 so. This will get his concerns reviewed by others and will also
10 provide him a written response when the determination of the
11 validity of the question is answered.

12 Inspector's are also questioned during surveillance and audits
13 to determine if the QA program is being properly implemented.
14 They have the opportunity at that time to voice concerns about the
15 QA program.

16 Q. WHAT OPTIONS ARE AVAILABLE TO A WELDING INSPECTOR WHO
17 BELIEVES THAT A SUPERVISOR MADE AN INCORRECT JUDGMENT
18 IN INSTRUCTING HIM TO VOID AN NCI?

19 A. The inspector has the option to raise the question with higher
20 management and QA support groups on site or QA Technical
21 Services in Charlotte. His first option is to approach his
22 supervisor and then his supervisor's supervisor with his question
23 of nonconformance. They are obligated to provide him a verbal
24 answer. If he is still dissatisfied his supervisor may take the
25 option of asking the question to QA on site or the QA Technical
26 Services in Charlotte. Again the response is verbal. If the
27 inspector is still dissatisfied, he can take the route of technical
28 recourse which requires him to put his question in writing, and he

1 is given a written response. Technical recourse can be pursued to
2 the Corporate QA Manager's level and then to Company Corporate
3 Management level if desired.

4 The inspector is always allowed to approach the NRC with his
5 concerns of nonconformance, but we encourage inspectors to pursue
6 the matter within the company first.

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

9 A. No.

10 Q. IN YOUR VIEW, HAVE THE CHANGES IN THE MANNER OF
11 QUALIFICATION AND CERTIFICATION OF WELDING INSPECTORS
12 RESULTED IN LESS QUALIFIED WELDING INSPECTORS AT
13 CATAWBA?

14 A. No. The requirements for certification for welding inspectors have
15 not changed. Classroom training, on-the-job training, and prior
16 work/inspection experience are still evaluated the same as they have
17 always been. Supervisors, after careful evaluation of the inspector
18 on the job, and after reviewing test scores, recommends the
19 certification of a candidate for welding inspector after the training
20 and testing program. Welding inspectors are qualified to perform
21 their duties now, just as they were in the past. There has been
22 no notice of decrease in quality of inspection.

23 Q. DESCRIBE YOUR INVOLVEMENT WITH THE TASK FORCES.

24 A. I had no involvement with the initial task force, the Technical Task
25 Force, or the Nontechnical Task Force.

26 Q. DESCRIBE YOUR INVOLVEMENT WITH LEWIS ZWISSLER OF
27 MANAGEMENT ANALYSIS COMPANY.

1 A. My involvement with Lewis Zwissler was limited to being interviewed
2 by him. We talked about the welding inspector's concerns, the
3 make-up and involvement of the Task Force, construction activities,
4 and the QA program.

5 Q. WERE YOU INVOLVED IN THE IMPLEMENTATION OF
6 RECOMMENDATIONS ISSUED BY ANY OF THE TASK FORCE?

7 A. Yes, I was involved in implementing some of the recommendations
8 made by the Technical Task Force.

9 Q. DESCRIBE YOUR ROLE IN IMPLEMENTING THE RECOMMENDATIONS
10 OF THE TECHNICAL TASK FORCE.

11 A. I was given the responsibility to investigate certain concerns
12 identified in my area and to develop a solution that would satisfy
13 the concern. Once a solution was developed, we implemented any
14 necessary changes, and trained the inspectors with respect to the
15 changes. I was responsible for resolving concerns in the following
16 areas:

17 1) Confirm filler material is correct on Steam Generator Shield
18 Wall Plate (Recommendation No. QAP-1);

19 2) Investigate to insure the adequacy of M-4I inspections with
20 respect to drawings used and timing used for inspections
21 (Recommendation No. QAP-2);

22 3) Provide training on requirements for use of Forms M-4I and
23 Q-1A for documenting construction versus nonconstruction damage
24 (Recommendation No. QAP-6);

25 4) Train inspectors in material identification marking
26 requirements for Class E piping (Recommendation No. MC-3);

27 5) Revise RPML to accept "SA" or "A" when appropriate, and
28 train inspectors accordingly (Recommendation No. MC-5);

1 6) Research M-4A on weld 1CA67-11 to insure proper
2 documentation of material traceability (Recommendation MC-9); and

3 7) Investigate to confirm or deny the practice of welding
4 socket welds without the appropriate gap (Recommendation WP-1).

5 Meetings were held with individual inspectors and with
6 inspector crews to implement these recommendations.

7 Q. HOW WOULD YOU DESCRIBE THE PRIMARY CONCERN OF THE
8 WELDING INSPECTORS?

9 A. The primary concern of the inspectors, as I see it, was a lack of
10 communication between the inspector and those with whom it was
11 necessary to interface in order for him to do his job. One cause
12 for this lack of communication may have been partially due to a
13 perception held by the welding inspector that there was no way at
14 times for him to get needed information to perform his duties.
15 Inspectors resorted to NCI's to document questions.

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. No. In my view, the concerns raised questions the inspectors
23 reflected communications problems which did not affect the quality
24 of the construction of the plant. The Technical Task Force
25 thoroughly investigated each of the concerns and confirmed that the
26 concerns did not identify any technical inadequacies.

27 Q. IN YOUR VIEW, DID THIS EXPRESSION OF CONCERNS BY THE
28 WELDING INSPECTOR INDICATE THAT THERE WAS A BREAKDOWN

1 IN THE QA PROGRAM AT CATAWBA OR THAT THE QA PROGRAM
2 WAS NO LONGER WORKING AT CATAWBA?

3 A. No. The QA Program has functioned properly to identify and
4 resolve deficiencies that may have occurred during construction.

5 Q. HAS PRESSURE FROM THE CONSTRUCTION DEPARTMENT OR
6 ANYWHERE ELSE EVER INFLUENCED YOUR PROFESSIONAL
7 JUDGMENT IN MAKING DETERMINATIONS CONCERNING WHETHER
8 CONSTRUCTION DEFICIENCIES IDENTIFIED BY INSPECTORS
9 SHOULD BE APPROVED OR REJECTED?

10 A. No. We all work under pressure to meet our schedules and
11 commitments, but this pressure has never interfered with my
12 professional judgement while performing my responsibilities.

13

14

15

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

18

19

20

21

Joe C. Shropshire
Joe C. Shropshire

22

23

24 Sworn to and subscribed before me
25 this 21 day of September, 1983.

26

27

28

29

John D. Bowman
Notary Public

30

31 Commission Expires 7-12-88

RESUME

NAME: Joe C. Shropshire

PRESENT POSITION: QA Engineer
Catawba Project

PERSONAL DATA: Age - 39
Marries - Two children
Address - 1204 Dumbarton Road
Gastonia, NC 28054

EDUCATION:

Graduate of Drewry Mason High School, Ridgeway, VA 1962

Bachelor of Science in Civil Engineering from Virginia Polytechnic Institute, 1967

Graduate study in Civil Engineering at Virginia Polytechnic Institute in 1969-1970

Various technical courses and seminars.

Various Duke Power Company management training courses.

EXPERIENCE:

Virginia Department of Highways, Richmond, VA.

1967-68 Highway Engineer Trainee. During my training I worked as a bridge design engineer, materials engineer, hydraulics engineer, and construction field engineer. Was given responsible charge for several projects. Project experience included structural design, drainage studies, materials evaluation, and tunned construction.

Bluefield State College, Bluefield, WV

1968-69 Instructor. I was an Instructor of Civil Engineering Technology and was responsible for the quality and content of courses taught. Some courses taught were Structural Steel and Reinforced Concrete Design, Statics, Strength of Materials, Surveying.

Virginia Polytechnic Institute, Blacksburg, VA.

1969-70 Coordinator of Men's Residence Halls. I was responsible for the overall student management for two student dorms.

RESUME

Joe C. Shropshire
Page 2

Wake Technical Institute, Raleigh, NC

1970-71 Instructor. I was an Instructor of Civil Engineering Technology and was responsible for course development, content and quality. Courses taught included Materials, Statics, Strength of Materials, Reinforced Concrete Design.

Bluefield State College, Bluefield, WV

1971-73 Administrative Assistant (Part time instructor in Technology). I was responsible for developing and writing grant proposals and coordinating federal funding, directed institutional research and served on the Board of Regents Committee for Institutional Research, numerous special projects. Was partially responsible for developing Mine Supervisory Training Program.

Virginia Department of Highways, Richmond, VA

1973-74 Highway Materials Engineer "A". I was assistant Head of Soils Lab and was responsible for soils testing and evaluation of test results; responsible for materials studies; responsible for development and evaluation of test procedures. Advised other department engineers on foundation location and design, slope design, subsidence problems, materials resources.

Spartanburg Technical College, Spartanburg, SC

1974-77 Department Head - Civil Engineering Technology. Responsible for the course content and quality of the Civil Engineering Technology program. Taught all courses in curriculum. Was responsible for department budget and maintenance and purchase of equipment.

Pittsburgh Testing Laboratory, Atlanta Office, Atlanta, GA

1977-78 District Manager and Engineer. The responsibility for managing the Atlanta Office and overseeing the engineering and testing activities was mine. The office offered general, and some specialized, engineering and testing services to architects, engineers, contractors, and manufacturers. Testing, QA services, materials research and engineering analysis were supervised by me.

Duke Power Company, Charlotte, NC

1978-79 Assistant QA Engineer. Assigned to QA-Engineering and Services. I was responsible for developing, coordinating, and training QC-Civil inspectors in structural steel, concrete, soils, and coatings.

1979-80

Associated QA Engineer. Assigned to the QA-Construction Division at the Catawba Nuclear Project as QA Engineer Mechanical, Welding, NDE. I am responsible for providing the supervision and direction for the implementation of the QA program in the areas of mechanical piping,

RESUME

Joe C. Shropshire

Page 3

1980-Present equipment and systems testing, and welding and NDE.
QA Engineer. Assignment same as 1979-1980 except
that during 1981-1982 I was also responsible for the
implementation of the QA program for support/restraints.

PROFESSIONAL: Registered Professional Engineer in West Virginia
(#6476)

Member of American Society of Civil Engineers (ASCE)

Member of National Society of Professional Engineers
(NSPE)

NUCLEAR REGULATORY COMMISSION
Docket No. 50-413 Catawba 19
In the matter of Catawba 19
Staff ✓
Applicant ✓
Intervenor ✓
Complaint ✓
Contract ✓
Other ✓
Reporter Ron Graham
DATE 10/21/83
SIGNED ✓
RECEIVED ✓