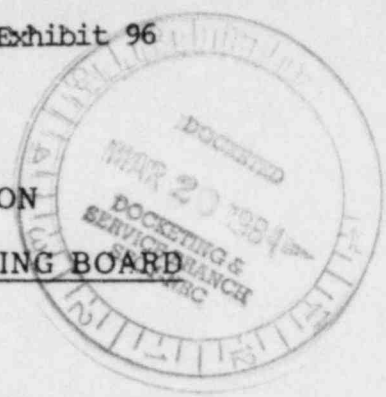


A-96  
12/15/83



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 W. E. ROGERS, L. R. BARNES, L. W. RUDASILL,  
J. E. CAVENDER, A. W. ROY AND D. H. LLEWELLYN  
CONCERNING IN CAMERA WITNESS #2's ALLEGATIONS  
REGARDING WELDING MATERIAL

1 Q. PLEASE STATE YOUR NAMES, BUSINESS ADDRESSES, AND  
2 PROFESSIONAL QUALIFICATIONS.

3 A. Mr. Rogers: My name is W. E. (Bill) Rogers. My business  
4 address is Catawba Nuclear Station, P. O. Box 223, Clover, S. C.  
5 29710. My current position is Welding Superintendent. I am  
6 responsible for Welding at Catawba. My department consist of  
7 approximately 550 employees. Prior assignments have included  
8 Welding General Foreman, Welding Foreman, Welding Inspector, and  
9 Welder with Duke Power. A copy of my professional qualifications  
10 is attached to Applicants' testimony addressing In Camera Witness  
11 #2's Allegations Concerning Foreman Override.  
12

13 Mr. Barnes: My name is L. R. Barnes. My business address is  
14 Catawba Nuclear Station, P. O. Box 223, Clover, S. C. 29710.  
15 My current position is Planning and Control Manager for  
16 construction at the Catawba Nuclear Station. A copy of my  
17 professional qualifications is attached to Applicants'

1 testimony addressing the Board's Question Concerning the  
2 Containment Spray System.

3  
4 Mr. Rudasill: My name is Larry W. Rudasill. My business address  
5 is Catawba Nuclear Station, P. O. Box 223, Clover, S. C. 29710.  
6 My current position is Welding Supervisor in Reactor Building #2.  
7 In the past, I have held positions as a Welding Inspector, and  
8 Welder for Duke at Catawba and McGuire Nuclear Station. A copy  
9 of my professional qualifications is attached to Applicants' testimony  
10 addressing In Camera Witness #2's Allegations Concerning Foreman  
11 Override.

12  
13 Mr. Cavender: My name is John E. Cavender. My business  
14 address is P. O. Box 33189, Charlotte, N. C. 28242. I am a  
15 Nondestructive Examination Examiner (NDE) Level III. My  
16 responsibilities include qualification of NDE personnel, the  
17 development and approval of NDE procedures, and the periodic  
18 review of NDE records. A copy of my professional qualifications  
19 is attached to Applicants' testimony addressing the Board's  
20 Question Concerning the Containment Spray System.

21  
22 Mr. Roy: My name is Alfred W. Roy. My business address is  
23 P.O. Box 33189, Charlotte, N.C. 28242. My current position is  
24 Quality Assurance Supervisor. My responsibilities in this position  
25 consists of supervising Quality Assurance Vendor Personnel in  
26 Piping and Materials areas. This consists of performing surveys,  
27 audits and surveillance in vendor shops. A copy of my

1 professional qualifications is attached to Applicants' testimony  
2 addressing the Board's Question Concerning the Containment Spray  
3 System.  
4

5 Mr. Llewellyn: My name is D. H. Llewellyn. My business address  
6 is Catawba Nuclear Station, P. O. Box 223, Clover, S. C. 29710.  
7 My present position is group leader of Construction Technical  
8 Support - Welding. A copy of my professional qualifications is  
9 attached to Applicants' testimony addressing In Camera Witness #2's  
10 Allegations Concerning Foreman Override.  
11

12 Q. ARE YOU FAMILIAR WITH IN CAMERA WITNESS #2's ALLEGATIONS  
13 THAT UNACCEPTABLE WELDS RESULTED FROM THE USE OF  
14 DEFECTIVE 1/8" TIG AND 3/32" COATED ELECTRODE CARBON  
15 STEEL WELDING MATERIAL?

16 A. Yes. We have reviewed his testimony regarding the allegations. In  
17 essence, he alleges that in 1981, the welders were forced to use  
18 unacceptable 1/8" TIG wire and at some other (unnamed) time, they  
19 were forced to use unacceptable 3/32" coated electrodes.  
20

21 Q. HAVE YOU INVESTIGATED THE ALLEGATION?

22 A. Yes. The investigation consisted of an analysis of relevant  
23 documents including weld records, codes, standards and reports  
24 regarding this issue and discussions with the welder general  
25 foreman, welder foreman, technical support personnel, filler material  
26 issue clerks and welders.  
27

1 Q. WHAT WAS THE RESULTS OF YOUR INVESTIGATION?

2 A. Based on our investigation, we have determined that in the only  
3 instance where any concerns regarding TIG wire were raised by  
4 welders during the period of the witness' employment, the wire was  
5 tested and found to be acceptable. The only instance where  
6 concerns were raised regarding 3/32" coated electrodes during the  
7 witness' employment, the electrodes were tested and about 10% were  
8 removed from service due to undesirable welder appeal, i.e., some  
9 coated electrodes had an unusual bulge of the flux and minor  
10 chipping of the flux at the striking end which caused concern  
11 among some of the welders. While our tests and analyses of the  
12 electrodes did not indicate any failure to comply with Code  
13 requirements, the electrodes had unusual markings which caused  
14 concern of the welders. In any event, regardless of the filler  
15 material used, rejectable defects on safety-related welds would have  
16 been discovered in the inspection and nondestructive examination  
17 process and corrected. In sum, this concern raises no question of  
18 safety significance regarding construction of the plant. Factors  
19 which support this determination include the following:

20 1. Filler material is procured by Duke through approved  
21 vendors taking into consideration the quality of the  
22 material, Duke's experience regarding the products and  
23 the preference of welders using the products. In some  
24 cases, this has resulted in purchasing filler material from  
25 other than low bidders. Of course, a documented  
26 justification for any additional cost is provided in each  
27 instance. DHL, WER.



1           2. Vendors supplying filler material undergo strict vendor  
2           audits and surveillance to assure filler materials are  
3           fabricated to meet Code requirements. In addition,  
4           procurement documents require the vendor to meet all  
5           applicable requirements of ASME B&PVC Sections II  
6           and III. Notarized statements and test reports are  
7           required of the manufacturer to verify that standards  
8           prescribed for these materials by the ASME are met.  
9           Further, periodic vendor audits by Duke as well as other  
10          utilities provide further assurance that such requirements  
11          are met. AWR, DHL, LRB.

12  
13          Since 1977, all 3/32" E7018 coated electrodes (of the  
14          nature raised by the witness) have been purchased from  
15          Alloy Rods Division of Chemetron. TIG wire (of the  
16          nature raised by the witness) has been purchased from  
17          Page Corp., Linde Corp. or Arcos Corp. In the past  
18          five years, approximately 6-8 audits and surveillances  
19          of each of these companies have been conducted, and in  
20          no case has any significant deficiency been discovered.  
21          AWB, DHL.

22  
23          3. When filler material is delivered to the site it is inspected  
24          in accordance with QA Procedure P-1 to assure  
25          requirements specified in the procurement specification  
26          regarding documentation, packaging, etc. are met.  
27          However, to prevent moisture contamination, packages

1 containing filler material are not opened during this  
2 inspection. Any discrepancies identified in the inspection  
3 must be dispositioned prior to entering this material on  
4 the RWML (released welding material log). Once material  
5 is on the RWML it can be released, as needed, to the rod  
6 issue stations in accordance with CP-410. Once in the  
7 rod issue stations it is controlled, issued, and  
8 reconditioned\* (\*Coated electrodes only) in accordance  
9 with QA Procedure H-3 and CP 39. At the issue station  
10 the filler material is appropriately dispositioned. For  
11 example, the coated electrode packages are opened and  
12 the material is checked by the issue clerk as it is being  
13 put into the holding ovens. The issue clerk is  
14 knowledgeable regarding filler materials and provides an  
15 extra craftsman check of this material. WER, DHL, LRB.

16  
17 As the welder is issued filler material he has standing  
18 instructions to check his filler material to assure it  
19 conforms to good craftsmanship standards. Duke  
20 considers the check by the craftsman welder to be an  
21 extra check in assuring quality work. Further, all  
22 welders have been instructed to follow procedures which  
23 require that, among other things, any filler material  
24 found to be damaged or having chipped or cracked flux  
25 should not be used, but placed in proper discard  
26 containers at the rod issue station. WER, DHL, LWR.

1 Finally, welders are required to weld in accordance with  
2 approved procedures and are thoroughly trained with  
3 regard to their work. In addition, detailed QA/QC  
4 inspections and examinations by skilled and trained  
5 personnel are conducted on all safety-related welding to  
6 further provide assurance of good welding practice.  
7 WER, JCS, JEC.

8  
9 In short, the life cycle of filler material, from  
10 manufacturing to issuance in the plant to use on welds,  
11 is carefully controlled in accordance with the approved  
12 procedures, and is subject to rigorous QA inspections and  
13 periodic QA audits and surveillance. DHL, WER, LWR.

- 14  
15 4. Occasionally, welders express concerns regarding filler  
16 materials. These are usually related to ease of operation  
17 and surface appearance of the material (flux or  
18 electrode). Some complaints usually accompany any  
19 change of manufacturer of such materials (i.e., as the  
20 fluxing elements differ slightly, the electrode welds  
21 slightly different). If these complaints persist and/or are  
22 severe, welding and technical support personnel evaluate  
23 the material for suitability even though it meets all Code  
24 requirements. Generally, familiarity with the material by  
25 the welders alleviates complaints. WER, DHL, LWR.

26

1           5. As to the witness' allegation regarding TIG wire, his  
2 foreman remembers the witness asking him whether an  
3 unusual line running lengthwise in places on some TIG  
4 wire was cause for concern. The foreman directed his  
5 crew members to stop using the material until he could  
6 investigate. He reported the question to his general  
7 foreman who directed him to remove from use all wire with  
8 this line until the material could be evaluated. LWR,  
9 WER.

10  
11           The welding superintendent, welder general foreman, and  
12 technical support personnel visually examined cross  
13 sections of the material under magnification and  
14 determined that the line apparently resulted from minor  
15 scoring during the manufacturing process. Several pads  
16 of weld metal were deposited using this material, both  
17 single and multiple layers, with no welding difficulty; and  
18 the weld pads were nondestructively examined using the  
19 liquid penetrant method. No indications of porosity  
20 were detected. Welders were informed that from this  
21 testing it had been determined that the line was not  
22 detrimental to the material. WER, DHL, LWR.

23  
24           6. As to the witness' allegations regarding 3/32" coated  
25 electrodes, the only concerns regarding such material  
26 were raised in March, 1983, when some welders and the  
27 issue clerks reported irregularities in the flux of some



1 Alloy Rods E7018 coated electrodes. Subsequent tests  
2 and analysis gave no indication that the electrodes would  
3 not meet all Code requirements. However, some  
4 electrodes had an unusual bulge of flux which caused  
5 concern among some of the welders. In addition, there  
6 was minor chipping of the flux on the striking ends of  
7 some electrodes. In view of these irregularities, all of  
8 the electrodes were visually examined and those which  
9 exhibited such irregularities were removed from service  
10 (approximately 10%). The manufacturer was informed of  
11 the situation. WER, DHL.

12  
13 7. If flux irregularities from use of these electrodes had  
14 resulted in porosity in weld joints, this porosity would  
15 have been detected and repaired through the inspection  
16 and nondestructive examination processes required for the  
17 welds. JEC, WER, DHL.

18  
19 8. Neither welding foremen or welders who we talked to  
20 could remember any other instances of irregularities in  
21 1/8" TIG wire or 3/32" E7018 coated electrodes. In  
22 addition, none could recall any time when they were  
23 forced to use unacceptable weld filler material. WER,  
24 LWR, DHL.

NUCLEAR REGULATORY COMMISSION

Docket No. 50-413 Official File No. 96  
In the matter of Catawba

Staff ✓  
Assistant ✓  
Inspector ✓  
Chief of File ✓  
Construction ✓  
Other ✓

Reporter Mary Sumers DATE 12/15/83  
Witness