UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

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

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

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

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

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

8404040049 840222
PDR FOIA
GARDE84-48 PDR

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

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

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

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

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

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

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

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

Q. HAVE YOU INVESTIGATED THE ALLEGATION?

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

Q. WHAT WAS THE RESULTS OF YOUR INVESTIGATION?

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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