Central File
50-269

DUKE POWER COMPANY
POWER BUILDING
422 SOUTH CHURCH STREET, CHARLOTTE, N. C. 28242

February 25, 1980

WILLIAM O. PARKER, JR.
VICE PRESIDENT
STEAM PRODUCTION

TELEPHONE: AREA 704
373-4083

Mr. James P. O'Reilly, Director
U. S. Nuclear Regulatory Commission
Region II
101 Marietta Street, Suite 3100
Atlanta, Georgia 30303

Re: Oconee Unit 1
50-269
IE Bulletin 79-13

Dear Sir:

The examinations required by Item 2 of the subject bulletin were completed on Oconee Unit 1 on February 1, 1980. The examination based upon ASME Section III identified several rejectable indications. However, the piping in question was not designed to specifications as conservative as this edition of the code. Therefore, strict adherence to the code is not required. The continued operation of this system with the rejectable indications is justified based on a more thorough review of the indications by a metallurigical consultant (Helmut Thielsch, PE) in close coordination with various individuals/groups within Duke Power. Duke considers the conclusions reached by Mr. Thielsch to be valid and to sufficiently support normal power operations of the unit.

Two reports are attached for your review. The first is a letter from Mr. F. J. Sattler (B&W) which documents the ASME III review of the welds and identified the code rejectable indications. The second is a preliminary draft of Mr. Thielsch's report on his review of the indications. The report will be submitted in its final form when it becomes available. The conclusions on other significant technical matter within the report are not expected to differ in the final report.

Very truly yours,

William O. Parker, Jr.

KRW:scs

Attachment

ATTACHMENT 1

Babcock & Wilcox

Power Generation Group

P.O. Box 1260, Lynchburg, Va. 24505
Telephone: (804) 384-5111

January 11, 1980

Mr. J. O. Barbour
Manager, Operations Quality Assurance
Duke Power Company
P. O. Box 2178
Charlotte, North Carolina 28242

Attention: J. D. Norton

Ref: 599-2002-04-10

Dear Mr. Barbour:

The radiography examinations performed in response to NRC IE Bulletin 79-13 of 24 feedwater welds on the Oconee 1 A and B steam generators revealed several indications which exceed the radiographic reporting requirements of the bulletin. The results of our film interpretation are listed below:

Identification	Comments
1 FLG B Gen.	View 1-2 (10) Medium Pores 2-3 (3) Medium Pores (1) 3/64" Large Pore 3-4 (6) Medium Pores (3) Slag indications 1/8", 3/32" and 1/16" within 1/2" length. Slag inclusions are not within acceptance standard. 4-1 (1) 3/16" Slag (2) Large porosity clusters - not within acceptance standard. (1) Large tungsten inclusion and (2) medium tungsten inclusions - not within acceptance standard. (1) 1/16" Large Pore. (1) 1/4" Surface Indication. All within acceptance standard except except 3-4 and 4-1 as indicated.
1 ELB B Gen.	View 1-2 (2) Medium Pores - (1) Medium tungsten 2-3 (5) Medium Pores (6) Large pores in 1" length all 1/16" diameter - not within acceptance standard. 3-4 (1) 1/8" slag inclusion (3) Medium pores 4-1 (4) Medium tungsten (6) Medium pores All within acceptance standard except 2-3 as indicated.

Identification	Comments
2 FLG B Gen.	View 1-2 (8) Medium pores (1) 1/16" pore Two largest pores are separated by over 2". 2-3 (1) 1/16" pore (5) Medium pores 3-4 (1) 3/32" slag (2) Medium pores 4-1 (16) Medium pores All within acceptance standard.
2 ELB B Gen.	View 1-2 (1) 3/32" slag inclusion (3) Small pores 2-3 (3) Large pores (10) Medium pores Three large pores are not within acceptance standard. 3-4 (11) Medium pores (1) Medium tungsten 4-1 (2) Medium pores All within acceptance standard except 2-3 as indicated.
3 FLG B Gen.	View 1-2 (2) Fine pores 2-3 (2) Fine pores 3-4 (2) Medium porosity 4-1 (2) Medium porosity and 1/16" slag inclusion. All within acceptance standard.
3 ELB B Gen.	View 1-2 (6) Medium pores (1) 1/4" and (1) 3/22" slag inclusions separated by less than 1-1/2". Not within acceptance standard. 2-3 (1) 3/16" slag inclusion (1) 3/32" slag inclusion (1) 3/64" tungsten (4) Medium pores. Slag inclusions with tungsten not within acceptance standard. 3-4 (1) Medium tungsten (1) 3/32" slag and (1) 1/16"-slag separated by 1-3/4". Third piece of slag 1/16" long separated by 1" from other 1/16" piece. 4-1 (1) 1/8" slag All within acceptance standard.

Identification	Comments
5 FLG B Gen.	View 1-2 (1) 1/32" slag inclusion (1) Medium pore 2-3 (2) 1/16" slag inclusions and (1) 3/64" tungsten 3-4 (1) Tungsten and (2) slag inclusions total 3/16". (1) Medium pore 4-1 (1) Medium pore All within acceptance standard.
5 ELB B Gen.	View 1-2 (2) Medium pores and (1) medium tungsten 2-3 (1) Medium pore (1) 1/16" and 1 - 3/32" slag separated by 9/16" 3-4 Clear 4-1 3 Fine pores All within acceptance standard.
6 FLG B Gen.	View 1-2 (1) 5/32" slag (1) 3/32" slag 2-3 (1) 5/32" slag 3-4 (1) 3/16" slag 4-1 Clear Total length of slag on 1-3 is 13/32" in 2-3/8" length. This exceeds aggregate length greater than t and the 5/32" and 3/32" indications are separated by less than 6 x 5/32". Not within acceptance standard. Areas 3-4 and 4-1 are within acceptance standard.
6 ELB B Gen.	View 1-2 (1) 3/16" slag inclusion @ 1 (2) 1/32" tungsten inclusions (4) Pores; (2) 1/32", (2) 1/64" Area calculations: Tungsten 0.0007x2 = 0.00153 (2) 1/32" pores = 0.00153 (2) 1/64" pores = 0.00019 Total Pore Area = 0.00325 $in.^2$ Within acceptance standard $\leq$ 0.015 $in.^2$ 2-3 (1) 1/32" tungsten 3-4 (1) 1/4" slag, (1) 5/32" slag, (1) 3/16" slag and (1) 1/8" slag Largest slag indications separated by only 3/4". Unacceptable. 4-1 (1) 1/16" porosity All within acceptance standard except 3-4 as detailed.

Identification	Comments
7 FLG B Gen.	View 1-2 (1) 1/16" slag and (1) median pore 2-3 (1) Medium pore 3-4 (1) Medium porosity 4-1 (1) 3/16" slag and (1) 1/16" slag separated by 1-3/16". All within acceptance standard.
7 ELB B Gen.	View 1-2 (1) Medium size tungsten 2-3 (1) 3/16" slag cluster 3-4 (1) 3/32" slag 4-1 (1) Medium size tungsten and (1) 1/8" slag inclusion All within acceptance standard.
1 FLG A Gen.	View 1-2 (5) 1/16" Large pores (13) Medium pores Large pores are unacceptable. 2-3 (1) 1/8" Slag (9) Medium porosity (5) Fine porosity These indications are unacceptably close to 1-2 indications. 3-4 (2) 1/8" Slag inclusions within 1/4" length. (5) Medium pores (1) 1/4" surface indication in base material. Slag indications are unacceptable. 4-1 (2) 1/8" Slag inclusions (2) Medium pores (2) Medium tungsten inclusions (1) 1/16" Porosity Slag inclusions exceed acceptance standard. All views are unacceptable.
1 ELB A Gen.	View 1-2 (2) 1/16" and (1) 3/64" Large pores (2) Medium pores Large pores are unacceptable. 2-3 (6) Large pores (20) Medium pores (1) Surface indication in base material 5/32" Large pores are unacceptable. 3-4 (1) 3/32" Slag inclusion (3) Medium pores 4-1 (11) Medium pores (1) 3/32" and (1) 1/16" pores with (1) 3/64" tungsten. Large pores are unacceptable. The large porosity in Views 1-2, 2-3 and 4-1 are unacceptable as noted. View 3-4 is acceptable.

Identification	Comments
2 FLG A Gen.	View 1-2 (6) Medium pores (7) Fine pores (1) 3/8" Slag Slag is unacceptable.
	2-3 (1) 3/64" and (1) 1/16" large porosity (1) 3/64" large tungsten and (1) medium tungsten (1) Base metal surface indication Large pores are unacceptable.
	3-4 (15) Medium pores (1) 1/16" Large pores (1) 1/16" (1) 5/32" and (1) 3/22" slag inclusions Slag inclusions are unacceptable.
	4-1 (1) 3/32" Slag inclusion (16) Medium pores Porosity and slag combined 1-2 and 3-4 indications are unacceptable. All views of this weld are unacceptable.
2 ELB A Gen.	View 1-2 (6) Medium pores (2) 1/16" Slag inclusions separated by 1-3/4"
	2-3 (1) 1/16" Pore (15) Medium pores (1) 5/32", (1) 1/8" and (1) 3/32" Slag Unacceptable to acceptance standard.
	3-4 (1) Fine tungsten inclusion (7) 1/16" Large pores (8) Medium pores Large pores are unacceptable.
	4-1 (2) 3/32" Slag inclusions separated by 1-1/2" (12) Medium pores (1) 5/16" Large pore The large pore is unacceptable. Indications in Views 2-3, 3-4 and 4-1 are unacceptable as noted.
3 FLG A Gen.	View 1-2 (7) Medium pores (2) 3/64" Large pores Large pores unacceptable.
	2-3 (7) Medium pores (2) Large pores 1/16" and 3/64" Large pores unacceptable.

Identification	Comments
3 FLG A Gen. (Cont'd)	View 3-4 (1) 1/8" Slag inclusion (8) Medium pores 4-1 (1) 1/8" Slag (15) Medium pores (5) 3/64" Large pores Large pores unacceptable. All views except 3-4 unacceptable.
3 ELB A Gen.	View 1-2 (22) Medium porosity (2) 3/32" Slag 2-3 (2) Medium porosity (1) 1/16" Slag 3-4 Clear 4-1 (5) Medium porosity All views meet acceptance standard.
5 FLG A Gen.	View 1-2 (11) Medium porosity (1) 1/16" Large pores (1) Base metal surface - 1/4" 2-3 (6) Medium porosity 3-4 (14) Medium porosity (3) 1/16" Large pores Large pores unacceptable. 4-1 (8) Medium pores (4) 1/16" Large pores (1) 1/16" Large tungsten Large pores and tungsten unacceptable. Large pores in 3-4 and 4-1 are unacceptable.
5 ELB A Gen.	View 1-2 (1) Medium tungsten (1) 1/16" Slag 2-3 (1) 3/64" Pore (2) Medium tungsten 3-4 (6) Medium pores (1) 3/32" Slag 4-1 (2) 3/64" and (1) 5/64" large pores - Unacceptable to standard. (11) Medium pores. View 4-1 unacceptable with the remainder acceptable.
6 FLG A Gen.	View 1-2 (1) Fine pore (6) Medium pores (1) 3/32" Slag 2-3 (2) 1/8", (1) 1/4" and (1) 3/16" slag - Unacceptable.

Identification	Comments	
6 FLG A Gen. (cont'd)	View 3-4	(1) 1/4" and (1) 3/16" Slag - Unacceptable.
	4-1	(1) 3/16" Slag (8) Medium porosity (2) Medium tungsten
		Total amount of slag in all views is unacceptable.
6 ELB A Gen.	View 1-2	(1) 1/16" and (1) 3/64" tungsten (1) 3/32" slag (3) Medium pores (1) 1/16" Large pore
	2-3	(4) Medium pores (1) Medium tungsten
	3-4	(1) 1/4" and (1) 3/32" Slag - Unacceptable.
	4-1	(1) 3/16" Slag (4) Medium porosity
		Slag is unacceptable in 3-4 and extends to slag in 4-1. Views 1-2 and 2-3 are acceptable.
7 FLG A Gen.	View 1-2	(15) Medium pores (1) 3/16" and (1) 1/16" Slag - Unacceptable.
	2-3	(1) 1/8" and (1) 3/32" Slag - Unacceptable. (6) Medium pores
	3-4	(3) Medium pores and (1) 3/32" slag
	4-1	(8) Medium pores (6) 3/64" Large pores Large pores are unacceptable.
		Views 3-4 and 4-1 show a surface condition which is due to weld preparation or surface conditioning. Only View 3-4 has acceptable conditions on this weld.
7 ELB A Gen.	1-2	(1) Medium tungsten (10) Medium pores
	2-3	(5) Medium pores (1) Large pore
	3-4	(8) Medium pores (1) 3/32", (1) 3/16" and (1) 1/16" Slag - unacceptable.
	4-1	(4) Medium pores (2) Medium tungsten
		All views show a surface condition which is due to weld preparation or surface conditioning. View 3-4 has unacceptable slag.

These welds were fabricated to a standard which only required magnetic particle examination. The continued use of these welds should be justifiable based on the design requirements. If you desire any additional data or information, please contact me or Roy Brown.

Very truly yours,

THE BABCOCK & WILCOX COMPANY

F. J. Sattler
Manager, Inservice Inspection
Customer Service Department-NPGD

FJS:p

CC: K. R. Allison
R. N. Brown
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ATTACHMENT 2