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 50-270 Oconee Nuclear Station, Unit 2, Duke Power Co. 05000270
 50-287 Oconee Nuclear Station, Unit 3, Duke Power Co. 05000287

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 DENTON, H.R. Office of Nuclear Reactor Regulation, Director
 STOLZ, J.F. Operating Reactors Branch 4

SUBJECT: Submits addl info re environ qualification of safety-related electrical equipment, per IE Bulletin 79-01B, in response to 820107 request. Cable listing encl.

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 TITLE: Equipment Qualification (OR & PRE-OL)

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DUKE POWER COMPANY

POWER BUILDING

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WILLIAM O. PARKER, JR.
VICE PRESIDENT
STEAM PRODUCTION

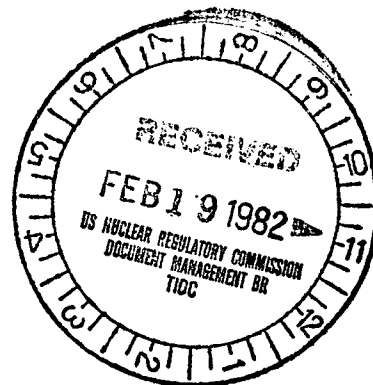
February 10, 1982

TELEPHONE: AREA 704
373-4083

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Attention: Mr. J. F. Stolz, Chief
Operating Reactors Branch No. 4

Subject: Oconee Nuclear Station
Docket Nos. 50-269, -270, -287



Dear Sir:

By letter dated January 7, 1982, the Staff requested certain additional information regarding environmental qualification of safety-related electrical equipment. The following are our responses to this request and are applicable for all three Oconee Units.

Item 1 in the Attachment of your letter requests some twenty-three test reports which are needed in order to complete the review. Duke Power respectfully declines to provide these reports to the NRC contractor. It is considered that a more efficient means to conduct such a review would be for the NRC and its consultants to come to Duke Power, first to review such reports and secondly, to discuss such technical issues as may arise during the course of the review. Past experience has been that when massive technical submittals have been made, several iterations of verbal/written communications are necessary to adequately address concerns, thus prolonging the time when the issue is resolved. It is strongly recommended that the Staff consider this means to address this issue.

With regard to Item 2, the temperature and pressure profiles (References 1-4) provided in Duke's IE Bulletin 79-01B submittal are applicable as follows:

- o References 1 and 2 - Reactor Building temperature and pressure profiles based on FSAR analyses.
- o References 3 and 4 - East Penetration Room temperature and pressure profiles based on the 1973 Oconee HELB Analysis.

Additional information regarding the environmental service conditions is provided in Duke's IE Bulletin 79-01B submittal, Introductory Text Paragraphs 4.0 - Service Conditions Inside and Outside the Reactor Building.

AOAS
S/11

Mr. Harold R. Denton, Director
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Finally, in response to Item 2, the request for additional equipment identification data, the following information is provided:

Motors

The motors identified in Duke's IE Bulletin 79-01B submittal are provided by Reliance Electric, Westinghouse, or Louis-Allis. The Reliance motors are installed inside the Reactor Building and are qualified for the Reactor Building environment by type test (Reference Joy/Reliance Test Report X-604). The following description of the Reliance motors installed at Oconee link them with the environmental qualification reference:

AC induction motor, 150/75 hp, 1200/600 rpm, DC5005 frame size, Class H insulation system.

The Westinghouse and Louis-Allis motors are all installed outside the Reactor Building and subject only to the post-LOCA recirculation radiation environment. The motors all have Class F insulation systems which are capable of withstanding the postulated radiation environment. Motor data other than the insulation system are not necessary to support the radiation qualification of these motors.

Motorized Valve Actuators

The valve motor operators identified in Duke's IE Bulletin 79-01B submittal are provided by Limatorque or Rotork. The motors provided by these vendors are qualified as an integral part of a complete actuator assembly. The qualification of the Oconee motor operators has been linked to the appropriate type test by using either the Limatorque operator serial number/order number or the Rotork operator model designation.

All Limatorque operators identified in the IE Bulletin 79-01B submittal are SMB series operators with Reliance Electric ac motors. The motor operators located inside the Reactor Building have either (noting equivalency) Class H or RH insulation systems. The motor operators located outside the Reactor Building (i.e., in the Auxiliary Building) have either Class H, RH, or B insulation systems.

All Rotork operators identified in the IE Bulletin 79-01B submittal are NA-1 series operators with Class H insulation systems and are located inside the Reactor Building.

The qualification levels and corresponding qualification documentation for the Limatorque and Rotork valve operators are identified on the SCEW sheets.

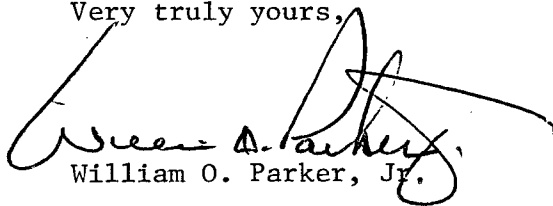
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Cables

Cables installed at Oconee are identified by a unique cable number and by a cable mark number identification system. The mark number identification system provides information on each cable type such as number of conductors, conductor size, and application (Refer to attached Duke drawing no. OEE-14-3, Rev. 1). Also attached is a list of cable types referenced in the 79-01B submittal along with manufacturer and insulation type. All cable have been traced to a test report by manufacturer and/or insulation type. The SCEW sheets for the individual cables identify the cable manufacturer and mark number along with appropriate qualification document.

Insulation thickness is an electrical design concern and all Oconee cables are designed to meet or exceed industry standards for their applications.

Very truly yours,



William O. Parker, Jr.

RLG/php
Attachments

cc: Mr. C. J. Crane
Franklin Research Center
The Parkway at Twentieth Street
Philadelphia, Pennsylvania 19103

OCONEE NUCLEAR STATION
 CABLE TYPES AS REFERENCED IN
 IEB 79-01B SUBMITTAL

CABLE MARK NO.	MANUFACTURER	INSULATION
2SPX16G.3	Sam Moore	PVC
3XJ10G2	Okonite	EPR-Neoprene
3XJ12G1	Okonite	EPR-Neoprene
3XJ250G2	Okonite	EPR-Neoprene
8XJ12G1	Okonite	EPR-Neoprene
12XJ12G1	Okonite	EPR-Neoprene
1SPX16G.3	Sam Moore	PVC
3BA12U.6	Okonite	EPR-Neoprene
3XJ2G5	Okonite	EPR
3XJ6G2	Okonite	EPR-Neoprene
4BA12U.6	Okonite	EPR-Neoprene
4XJ12G1	Okonite	EPR-Neoprene
8BA12U.6	Okonite	EPR-Neoprene
12BA12U.6	Okonite	EPR-Neoprene
19BA12U.6	Okonite	EPR-Neoprene
2-1Z14G.6	Raychem	Polyalkene Polyvinylidene Flouride
4-1Z14G.6	Raychem	" "
6-1Z14G.6	Raychem	" "
1SPX16G.3	Okonite	PVC
2SPX16G.3	Okonite	PVC
19XJ12G.1	Anaconda	EPR-Neoprene
1PSX16H	B.I.W.	Bostrad:Silicone-PVC
4SX14H.3	B.I.W.	Bostrad:Silicone-PVC
1SPA16G.3	Brand Rex	PVC
2SPA16G.3	Brand Rex	PVC

V. CABLE MARK NUMBERS:

Each type of cable which is purchased will be assigned a cable mark number. This number will be used to explicitly identify the cable when it is manufactured and it will be used on the cable tabulation sheets issued by Engineering to specify the type of cable which is to be installed. The cable mark number will be derived from the following outline where possible; with the exceptions being covered by "SP" (special) mark numbers:

CABLE MARK NUMBER FORM CMB-1

No. of Conductors or Pairs	3 12	XJ BA	250 12	U U	5 /Black (Typical Power) .6 /Orange (Typical Control)	Color
Construction					Insulation Level	Black Orange Green Brown Gray Yellow Blue
X - Interlocked Armor					.3 - 300V	
XJ - Interlocked Armor with overall jacket					.6 - 600V	
A - Served or braided armor					1 - 1000V	
AA - Aluminum Armor					2 - 2000V	
BA - Bronze Armor					5 - 5000V	
CA - Copper Armor					8 - 8000V	
Z - Plain					15 - 15000V	
P - Pair(s)						
S - Shielded						
SP - Shielded Pair(s)					Application	
SPA - Shielded Pair with overall served or braided armor					U - Universal	
SPS - Shielded Pair(s) with overall shield					F - Fire Retardant	
IC - Iron-Constantan thermo-couple wire					H - High Radiation	
CHA - Chromel-Alumel thermo-couple wire					HT - High Temperature	
CC - Copper-Constantan thermo-couple wire					DB - Direct Burial	
RHH - NEC Type RHH-RHW wire					G - General	
ALS - Aluminum Sheath cable					P - Portable ← 1.	
					Conductor Size (Typical)	
					20 - #20 AWG	
					12 - #12 AWG	
					8 - #8 AWG	
					2 - #2 AWG	
					1/0 - #1/0 AWG	
					4/0 - #4/0 AWG	
					250 - #250 AWG	

UNCONTROLLED

				DUKE POWER CO	
				OCONEE NUCLEAR STATION	
				WIRE AND CABLE TABULATION	
				MARK NUMBER DESCRIPTION	
DRN.	ayk	5/22/70	CHKD	amb	5/22/70
INSP.	ayk	5/22/70	APPR	amb	5/22/70
1	Revised As Noted		amb	5/22/70	
NO.	REVISION	CHKD	APPR	DATE	SCALE
					No. OEE-14-3