

SOUTH CAROLINA ELECTRIC & GAS COMPANY

POST OFFICE BOX 764

COLUMBIA, SOUTH CAROLINA 29218

T. C. NICHOLS, JR.
VICE PRESIDENT AND GROUP EXECUTIVE
NUCLEAR OPERATIONS

April 20, 1982



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

Subject: Virgil C. Summer Nuclear Station
Docket No. 50/395
Fire Protection

Dear Mr. Denton:

Your letter of April 1, 1982, stated the requirement that a smoke detector system be installed in each area of the Virgil C. Summer Nuclear Station containing safety related equipment and that this equipment should be fully operational prior to initial fuel loading at the facility. It was further stated that a request for relief should include the identification of all additional areas where smoke detectors are to be installed, the schedule for completion, and the compensating actions to be taken in the interim period. These requirements are based on the statement in the Safety Evaluation Report (SER) that "Fire detection systems will be installed in all areas having safety related equipment." In response to your letter, the following is provided.

The majority of safety related equipment in the Virgil C. Summer Nuclear Station is located in areas presently provided with smoke or heat detectors. (It is noted that heat detectors as well as smoke detectors are included in the term "fire detection." The type detection provided is based on engineering considerations such as the type combustibles present, etc.) Essentially all areas containing safety related equipment are served by HVAC systems that are provided with smoke detectors which alarm in the control room. These detectors are designed and UL listed to function in high air velocities present in duct installations and are arranged in the ductwork such that a high probability exists of detecting a significant quantity of smoke emanating from any area served by the system. Reasonable assurance is therefore provided that a fire of significant proportions would be detected in a timely manner. Areas which have not been provided with area fire detection equipment are areas in which the fire loading and/or the potential of fire is so low that it was not deemed necessary to provide area fire detection. However, in response to the new requirement as stated in the SER and reiterated in your April 1, 1982 letter, fire detection systems will be installed in areas having safety related equipment except as identified and discussed below.

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The attached chart identifies areas of the Virgil C. Summer Nuclear Station containing safety related equipment. The chart identifies individual rooms or compartments in the plant in most cases; however, in cases where detection is now present in large areas of a building, it is appropriately described as a single entry on the chart. The chart identifies areas where detectors are now installed, where no safety related equipment is present, where new detectors will be installed and where an exemption from the requirement to install detectors is requested. The zone or area fire loadings as recorded in the Fire Protection Evaluation are provided to illustrate the generally low fire loadings in the areas under consideration. These fire loadings were obtained by summing the combustible BTU content for the entire zone or area and dividing by the floor area. Buildings that do not contain safety related equipment are not included in the chart.

Rooms or compartments for which a request is made for exemption from the requirement to install area fire detection have essentially no fire loading. Where some very small quantity of combustible material, such as a small electrical cable, is present, it is enclosed in conduit or other metal container. These rooms or compartments fall into the following categories:

1. Demineralizer Compartments - small chambers that are sealed in concrete enclosures that do not permit access without considerable effort. These enclosures contain tanks and pipes.
2. Gas Decay Tank Compartments - chambers that are also sealed in concrete enclosures which do not permit access without considerable effort. These enclosures contain tanks and pipes.
3. Radwaste Filter Compartments - chambers which are enclosed within concrete shield walls and which contain no exposed combustibles. Each of these chambers contains an enclosed filter and piping.
4. Miscellaneous Rooms - rooms which contain miscellaneous tanks, valving and/or piping with no exposed combustibles present.

We request exemption from the requirement to install automatic fire detection for the safety related equipment located in the yard area for the following reasons:

1. The refueling water storage tank, reactor makeup water storage tank and sodium hydroxide storage tank are located in a reinforced concrete pit separated from the buildings by walls having a three hour fire resistance rating. There are no quantifiable combustibles in the pit. The nearest combustibles located in the yard are approximately 90 feet to the north.

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2. The two diesel generator fuel oil storage tanks are buried two feet apart.
3. The condensate storage tank and associated level instrumentation are required for safe shutdown operations. No quantifiable combustibles exist in the area and the minimum spatial separation is approximately 18 feet from nearby buildings. Additionally, an alternate source of water is provided through connections between the service water and emergency feedwater systems.
4. Buried cabling in the yard is in conduit or qualified for direct burial, redundant trains are separated and, therefore, a fire in this area is not credible.

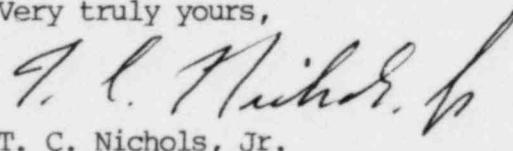
Installation of the new smoke detection equipment is scheduled for completion by the end of the first refueling outage. Due to the scope and magnitude of this action, relief from compliance with current Technical Specification 3.3.3.7 is requested in lieu of the current Technical Specification 3.3.3.7. The following compensating actions are to be taken in the interim period between initial fuel loading and completion of installation and testing of new detectors:

1. Fire watch patrols of accessible areas will be conducted twice per shift.
2. Inaccessible areas (high radiation areas except for the containment building) will be monitored by visual inspection from the entrance to these areas twice per shift. The containment building will be monitored by the installed area temperature monitors at least once per hour.
3. Activities involving welding, burning, and grinding in affected areas will be conducted with continuous fire watch coverage.

The implementation of these measures will provide positive defense against fire and be consistent with Station ALARA considerations.

If you have any questions, please let us know.

Very truly yours,



T. C. Nichols, Jr.

GW:TCN:lkb
Attachment
cc: See page 4

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cc: V. C. Summer	(w/o attach.)
G. H. Fischer	(w/o attach.)
H. N. Cyrus	
T. C. Nichols, Jr.	(w/o attach.)
M. B. Whitaker, Jr.	
J. P. O'Reilly	
H. T. Babb	
D. A. Nauman	
C. L. Ligon (NSRC)	
W. A. Williams, Jr.	
R. B. Clary	
O. S. Bradham	
A. R. Koon	
M. N. Browne	
G. J. Braddick	
J. C. Ruoff	
J. L. Skolds	
J. B. Knotts, Jr.	
B. A. Bursey	
NPCF	
File	

FIRE DETECTION SYSTEM V. C. SUMMER NUCLEAR STATION, UNIT 1

DRAWING NO.	BLDG	ELEV	I.A. NO.	SAFETY RELATED EQUIPMENT			INSTRUMENTATION	*ZONE/ AREA FIRE LOADING	DETECTORS INSTALLED	NO SR EQUIP- MENT	NEW DETECTORS REQUIRED	EXEMPTION REQ.
				MAJOR COMPONENT	TANK OR PIPE	CONDUIT OR CABLES						
E-023-002R2	A.B.	374	74-01			X		↑			X	
			-02							X		
			-03							X		
			-04							X		
			-05		X							X
			-06							X		
			-07			X					X	
			-08		X						X	
			-09			X					X	
			-09E							X		
			-10							X		
			-11	X	X			7,200			X	
			-12							X		
			-13							X		
			-14							X		
			-15		X							X
			-16	X		X			X			
			-17	X		X			X			
			-18							X		
	A.B.	385	85-01	X	X	X					X	
			-02	X	X	X					X	
			-03							X		
E-023-003R2	A.B.	388	88-01		X			↓				X
			-02		X							X
			-03		X							X
			-04		X							X
			-05		X			11,900			X	
			-06		X							X
			-07		X		X				X	
			-08		X							X
			-09		X							X
			-10		X							X
			-11		X			↓				X

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DRAWING NO.	BLDG	ELEV	RM. NO.	SAFETY RELATED EQUIPMENT				* ZONE/ AREA FIRE LOADING	DETECTORS INSTALLED	NO SR EQUIP- MENT	NEW DETECTORS REQUIRED	EXEMP- TION REQ.
				MAJOR COMPONENT	TANK OR PIPE	CONDUIT OR CABLES	INSTRUMEN- TATION					
E-023-003R2	A.B.	388	88-12		X			↑				X
			-13			X					X	
			-13S			X					X	
			-13N	X	X		X				X	
			-13NE			X					X	
			-14	X	X						X	
			-15	X	X						X	
			-16		X		X				X	
			-17	X	X			11,900			X	
			-18	X	X						X	
			-19		X							X
			-20		X							X
			-21		X		X				X	
			-22							X		
			-23	X		X			X			
			-24	X		X			X			
			-25	X		X			X			
E-023-003R2	A.B.	397	97-01			X		↑			X	
			-02			X		12,700			X	
			-02N			X					X	
			-02S			X					X	
E-023-004R4	A.B.	400	00-01			X		↑			X	
			SHIELD SLAB			X		2,100			X	
			NORMAL SLAB			X			X			
E-023-005R7	A.B.	412	12-02			X		↑			X	
			-03A			X					X	
			-04			X					X	
			-05			X					X	
			-06			X		29,200			X	
			-09			X					X	
			-11			X					X	
			-11N			X					X	
			-12	X	X						X	
			-13			X		↓			X	

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DRAWING NO.	BLDG	ELEV	RM. NO.	SAFETY RELATED EQUIPMENT				* ZONE/ AREA FIRE LOADING	DETECTORS INSTALLED	NO SR EQUIP- MENT	NEW DETECTORS REQUIRED	EXEMP- TION REQ.
				MAJOR COMPONENT	TANK OR PIPE	CONDUIT OR CABLES	INSTRUMEN- TATION					
E-023-005R7	A.B.	412	12-14	X	X			↑			X	
			-15							X		
			-16							X		
			-17							X		
			-18	X	X		X				X	
			-20	X	X						X	
			-21							X		
			-22		X							X
			-23		X							X
			-24		X			29,200				X
			-25							X		
			-26	X	X	X					X	
			-27		X	X					X	
			-28			X					X	
			-29			X					X	
			-30		X	X					X	
			-31			X					X	
E-023-006R2	A.B.	426-6	26-01			X					X	
			-02			X					X	
		429-3	293-01			X					X	
		426-3	263-01			X		↓			X	
E-023-005R7	F.B.	412	12-01			X		5,600	X			
E-023-007R1	I.B.	412	12-03	X				↑			X	
			-04	X							X	
			-05			X					X	
			-06			X		8,600			X	
			-07			X					X	
			-08			X					X	
			-09			X		↓			X	
			-12	X		X		↑	X			
			-14	X		X		6,600	X			

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FIRE DETECTION SYSTEM V. C. SUMNER NUCLEAR STATION, UNIT 1												
DRAWING NO.	BLDG	ELEV	RM. NO.	SAFETY RELATED EQUIPMENT				* ZONE/ AREA FIRE LOADING	DETECTORS INSTALLED	NO SR EQUIP- MENT	NEW DETECTORS REQUIRED	EXEMP- TION REQ.
				MAJOR COMPONENT	TANK OR PIPE	CONDUIT OR CABLES	INSTRUMEN- TATION					
E-023-007R1	I.B.	412	12-15	X		X		6,600	X			
E-023-007R1	I.B.	412	12-13A	X		X		↑	X			
			-13B	X		X		163	X			
			-13C	X		X		↓	X			
		426	26-01			X		28,600			X	
			-02			X		5,700			X	
		423	23-01	X		X		↑	X			
			-02	X		X		40,000	X			
		423-6	236-01	X		X		↓	X			
		412-0	12-02	X		X		43,000	X			
			12-10	X		X		43,000	X			
						X		13,100	X			
	DGB	400	00-01			X		↑			X	
			-02			X					X	
	DGB	427	27-01			X		5,200			X	
			-02			X					X	
			-03			X					X	
			-04			X					X	
	EPAA	412	12-02			X		↓			X	
E-023-008R8	AB	436	12-01	El. 445'		X		12,200	X			
			36-01			X		↑			X	
			-02							X		
			-03			X					X	
			-04		X							X
			-05							X		
			-06		X			31,500				X
			-07							X		X
			-08		X		X				X	
			-09		X			↓				X

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DRAWING NO.	BLDG	ELEV	RM. NO.	SAFETY RELATED EQUIPMENT				* ZONE/ AREA FIRE LOADING	DETECTORS INSTALLED	NO SR EQUIP- MENT	NEW DETECTORS REQUIRED	EXEMP- TION REQ.
				MAJOR COMPONENT	TANK OR PIPE	CONDUIT OR CABLES	INSTRUMEN- TATION					
E-023-008R8	AB	436	36-10		X			↑				X
			-11		X							X
			-12		X							X
			-13		X		X				X	
			-14		X		X				X	
			-15		X						X	
			-16		X	X						X
			-30								X	
			-31			X					X	
			-32		X			31,500			X	
			-33		X	X					X	
	AB	452-6	526-19		X						X	
			-20		X							X
			-21		X			Y				X
	FH	443	43-01			X		13,000			X	
	AB	436	36-19					↑		X		
			-20		X							X
			-21		X							X
			-22		X							X
			-23					31,500		X		
			-24		X		X				X	
			-25		X							X
			-26				X				X	
			-27									
			-28							X		
			-29							X		
	WPAA	436	36-01			X		34,700	X			
	FH	436	36-01w			X		13,000	X			

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DRAWING NO.	BLDG	ELEV	RM. NO.	SAFETY RELATED EQUIPMENT				* ZONE/ AREA FIRE LOADING	DETECTORS INSTALLED	NO SR EQUIP- MENT	NEW DETECTORS REQUIRED	EXEMP- TION REQ.
				MAJOR COMPONENT	TANK OR PIPE	CONDUIT OR CABLES	INSTRUMEN- TATION					
E-023-009R4	AB	448	48-01			X		↑			X	
		446	46-01			X		31,500			X	
			-02		X			↓			X	
E-023-010R7	IB	436	36-02			X		20,600			X	X
			-04			X		10,500			X	
			-05	X				15,600			X	
			-06	X				10,000			X	
			-03	X		X		52,400	X		X	
			-03A	X		X		50,800	X			
			-03B	X		X		35,700	X			
	IB	451	51-01	X		X		14,000			X	
			-02	X		X		14,000			X	
			-03	X		X		3,700			X	
			-04	X		X		3,700			X	
	DGB	447				X					X	
E-023-011R5	AB	463	63-01	X		X		↑	X		X	
			-02		X							
			-03		X							X
			-04			X						X
			-06		X						X	
			-07			X	X				X	
			-08	(A,B,C) X				40,240			X	
			-09			X					X	
			-10								X	
			-11							X		
			-12							X		
			-13					Y		X		
										X		

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DRAWING NO.	BLDG	ELEV	RM. NO.	SAFETY RELATED EQUIPMENT				* ZONE/ AREA FIRE LOADING	DETECTORS INSTALLED	NO SR EQUIP- MENT	NEW DETECTORS REQUIRED	EXEMP- TION REQ.
				MAJOR COMPONENT	TANK OR PIPE	CONDUIT OR CABLES	INSTRUMEN- TATION					
E-023-011R5	AB	463	63-14			X		↑	X			
			-15					40,240		X		
			-16			X			X			
			-17	X	X		X				X	
			-19			X			X			
	AB	475	75-01			X		↓			X	
	WPAA	463	63-01			X		24,400			X	
			-03			X		24,400	X			
	FB	463	63-01	N&S X		X		11,400	X			
	RB	AREAS ABOVE 463	X		X	X	X	7,500			X	
	RB	AREAS BELOW 463	X		X	X	X		X			
E-023-012R3	IB	463	63-02			X		58,100			X	
			-03			X					X	
			-01	X		X		95,100	X			
	DGB	463	63-01	X	X						X	
			-02	X	X						X	
	DGB	447-3"	ALL			X					X	
E-023-018R9	CB	482	ALL			X		35,000			X	
	CB	412	12-02			X					X	
			-03			X		20,000			X	
			-11			X		20,000			X	
		436	36-01			X					X	
E-023-019R4	CB	425	25-01	NORTH OF COL H BETWEEN 12.5 & 13.9 ABOVE CABLE TRAY		X					X	
	CB	448	48-01	NE CORNER		X					X	

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