

SOUTH CAROLINA ELECTRIC & GAS COMPANY

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O. W. DIXON, JR.
VICE PRESIDENT
NUCLEAR OPERATIONS

June 11, 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:

On April 20, 1982, South Carolina Electric & Gas Company (SCE&G) sent a letter to the NRC concerning installation of fire detectors in areas of the Virgil C. Summer Nuclear Station containing safety related and/or safe shutdown equipment. During May 17 - 18, 1982, an NRC fire protection review team visited Summer Station to survey the various areas pertaining to installation of fire detectors. During this survey, SCE&G requested that the NRC re-evaluate the need for detectors in areas where new detectors were to be installed. To facilitate this re-evaluation the following information is provided.

Table A, attached, lists rooms/areas for which an exemption from the requirement to install detectors is requested. Table B, attached, lists location for which an exemption from the requirement to install detectors has already been requested in our letter of April 20, 1982. Both tables show whether there is safe shutdown and/or safety related equipment in each room/area. The remarks column indicates the type of equipment present. Table A shows estimated fire loading for each room/area. Please note that cable in conduit (CND) was included in the fire loading. Fire propagation in conduit is highly improbable due to the limited supply of oxygen; therefore, a large degree of conservatism is built into the fire loadings.

In some cases, the safe shutdown and/or safety related equipment consists of pipes and tanks filled with water. It is inconceivable that pipes and tanks filled with water could fail due to fire with the small fire loadings in the rooms/areas under consideration.

Rooms 82-02/3 in the Control Building house redundant trains of chilled water piping. With the total fire loading in this area having a fire severity of less than 30 minutes, it is concluded that a fire in this area could not disable the piping.

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In the Auxiliary Building, the fire loading in each room/area listed is less than 10,000 Btu/ft² with the exception of room 12-02, which has a loading of 48,300 Btu/ft². Room 12-02 houses a single train of reactor building spray piping, with a fire severity of less than 40 minutes. It is concluded that a fire in room 12-02 could not disable the piping. Room 63-06 houses redundant boric acid tanks and associated piping. The fire load is contained in conduit. With essentially no fire loading other than the small amount in conduit, it is concluded that the tanks and pipes could not be disabled by a fire in this area. Additionally, the refueling water storage tank located outdoors provides an alternate (redundant) source of borated water.

In the Intermediate Building, the fire loading in each room/area listed is less than 40,000 Btu/ft² with the exceptions of rooms 63-03 and 12-09. These rooms have fire loadings of 50,300 Btu/ft² and 50,500 Btu/ft² respectively, corresponding to a fire severity of less than 40 minutes. Each of these two rooms contains a single train of safe shutdown cable.

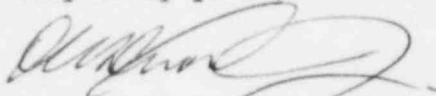
In the Diesel Generator Building, the fire loading in each room/area listed is less than 20,000 Btu/ft², which corresponds to a fire severity of 15 minutes.

In the Service Water Pump House, room 25-03 has a fire loading of 8,700 Btu/ft². This corresponds to a fire severity of less than 10 minutes. The C train cable is located inside conduit. With the extremely low fire loading, it is concluded that it is improbable that a fire would disable both trains of safe shutdown cable in room 25-03.

In the course of reviewing new fire detection requirements, some errors were noted in the table which was attached to our letter of April 20, 1982. Specifically, Control Building rooms 12-02, 12-03, 36-01 and 48-01 are presently provided with heat detectors and therefore no new detection is required.

If you have additional questions, please let us know.

Very truly yours,



O. W. Dixon, Jr.
Vice President
Nuclear Operations

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TABLE A
Virgil C. Summer Nuclear Station Smoke Detection

DRAWING	BLDG.	ELEV.	RM NO.	ESTIMATED FIRE LOADING (BTU/FT ²)			EQUIPMENT			REMARKS		
				CABLE IN CONDUIT	OTHER	TOTAL	SAFE SHUTDOWN		OTHER SAFETY RELATED			
							REDUNDANT TRAINS	SINGLE TRAIN				
E-023-018	CB	482	82-01/04	21,100	5,900*	27,000*	No	Yes		B- Chilled Water Piping B- Fans & Ducts	B- Tray B- CND	B- Charcoal Filters
			82-02/03	21,200	10,000*	31,200*	Yes			A & B Chilled Water Piping A- Fans & Ducts	A-Tray A- CND	A-Charcoal Filters
E-023-011	AB	475	75-01	3,000	0	3,000	No	No	Yes	A- CND B- CND		
		463	63-07	5,000	0	5,000	No	Yes		B- CND		
			63-06	5,000	0	5,000	Yes			A & B Boric Acid Tanks & Associated Piping/A,E & D- CND		
			63-08A	5,000	0*	5,000*	No	No	Yes	FHB Charcoal Filter- C		
			63-08B	5,000	0*	5,000*	No	No	Yes	FHB Charcoal Filter- B		
			63-08C	5,000	0*	5,000*	No	No	Yes	FHB Charcoal Filter- A		
E-023-008	AE	436	36-08	5,000	0	5,000	No	No	Yes	Instrumentation		
			36-33	7,700	1,000	8,700	Yes			SW Piping A,B, E- CND		
			36-13	5,000	0	5,000	No	Yes		MO Valve 8104 CS Piping 3 CND		

*Charcoal in charcoal filters not included. Charcoal filters are provided with water deluge suppression and with heat detection.

TABLE A
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DRAWING	BLDG.	ELEV.	RM NO.	ESTIMATED FIRE LOADING (BTU/FT ²)			EQUIPMENT			REMARKS
				CABLE IN CONDUIT	OTHER	TOTAL	SAFE SHUTDOWN		OTHER SAFETY RELATED	
							REDUNDANT TRAINS	SINGLE TRAIN		
E-023-003	AB	388	00-02w	2,500	0	2,500	No	Yes		B- CS Piping
			88-07	5,000	175	5,175	No	No	Yes	WG Sample Line
			88-14	2,500	200	2,700	No	No	Yes	B- WG Recombiner
			88-15	2,500	200	2,700	No	No	Yes	A- WG Recombiner
			88-17	2,500	0	2,500	No	No	Yes	B- WG Recombiner
			88-18	2,500	0	2,500	No	No	Yes	A- WG Compressor
			88-21	2,500	0	2,500	No	No	Yes	A&B Recycle Evaporator Feed Pumps
E-023-002	AB	374	74-01	3,800	3,900	7,700	No	Yes		B- CS Pipe
			74-09E 85-01/2 74-07/8/9 74-11/12,13	4,300	4,900	9,200	Yes			A VU Piping A XAH-4A-VL B VU Piping B XAH-4B-VL A&B Ducts for RHR Room Ventilation SP Line from RWST A&B CC Lines SP Line from RWST A- CND & Tray B- CND & Tray Waste Evaporator Feed Pump & Piping

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DRAWING	BLDG.	ELEV.	RM NO.	ESTIMATED FIRE LOADING (BTU/FT ²)			EQUIPMENT			REMARKS
				CABLE IN CONDUIT	OTHER	TOTAL	SAFE SHUTDOWN REDUNDANT TRAINS	SINGLE TRAIN	OTHER SAFETY RELATED	
E-023-012	IB	463	63-02	13,100	17,000	30,100	No	Yes		A- Tray & CND
			63-03	7,700	42,600	50,300	No	Yes		A- Tray & CND
E-023-010	IB	451	51-01	7,700	7,900	15,600	Yes			A&B CND A-VU Piping B-XAH-8-VL
			51-02	7,700	9,000	16,700	Yes			J,K,L, M,C CND B-VU Piping B- XAH-8VL
			51-03	3,000	14,900	17,900	Yes			J,K,L, M,A,B CND B- VU Piping B- XAH-19B-VL
			51-04	5,000	1,400	6,400	Yes			A- CND A&B VU Piping A- XAH-9A-VL
		436	36-02	10,400	3,300	13,700	Yes			Fire Loading excludes area which is provided with detectors and sprinklers A,B,C,D CND A- Tray A,B,&C MS Piping B-MS Safety Valves A,B,C MS Safety Valves & solenoid A&B VU Piping A&B- solenoid A&B cc piping A-MO Valves
			36-04	5,000	900	5,900	Yes			A- Tray A&B VU Piping

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				CABLE IN CONDUIT	OTHER	TOTAL	SAFE SHUTDOWN REDUNDANT TRAINS	SINGLE TRAIN	OTHER SAFETY RELATED	
			36-05	7,700	0	7,700	No	Yes		C- CND
			36-06	10,400	0	10,400	No	Yes		C- CND
E-023-007	IB	426	26-01	10,400	14,000	24,400	Yes			A- CND C- CND B- CND B- Tray
			26-02	13,100	13,900	27,000	Yes			A- CND C- CND B- CND A&C Tray
		412	12-03	7,700	0	7,700	No	No	Yes	Batt. Room A Temp. Signal Conv.
			12-04	7,700	200	7,900	No	Yes		A- Batt. Room A- CND A- Tray
			12-05	32,000	6,200	38,200	No	Yes		A- Tray A- Batt. Charger A- CND A- DC Distribution Panel
			12-06	32,000	0	32,000	No	Yes		B- CND B- Batt. Charger B- Tray B- DC Distribution Panel
			12-08	7,900	200	8,100	No	Yes		B- CND B- Batt. Room B- Tray
			12-09	2,500	48,000	50,500	No	Yes		B- Tray
E-023-012	DG	463	63-01	5,000	0	5,000	No	Yes		A- DG Exhaust Piping
			63-02	5,000	0	5,000	No	Yes		B- DG Exhaust Piping
		447-3	North	7,700	0	7,700	No	Yes		B- DG Supply Air Fans
			South	7,700	0	7,700	No	Yes		A- DG Supply Air Fans

TABLE A
Virgil C. Summer Nuclear Station Smoke Detection

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TABLE B
Virgil C. Summer Nuclear Station Smoke Detection

DRAWING	BLDG.	ELEV.	RM NO.	EQUIPMENT			REMARKS
				SAFE SHUTDOWN REDUNDANT TRAINS	SINGLE TRAIN	OTHER SAFETY RELATED	
E-023-011	AB	463	63-02 63-03	No No	No No	Yes Yes	Volume Control Tank and Associated Piping CS Piping and Valves
E-023-008	AB	452-6	526-19	No	No	Yes	Various Filters
			526-20	No	Yes		Filter XFL 39-cs
			526-21	Yes			A- Filter XFL 8A-cs B- Filter XFL 88-cs
		436	36-04	No	No	Yes	CS Piping
			36-06	No	No	Yes	CS Piping
			36-09	No	No	Yes	XDM 7A-TR & Associated Piping
			36-10	No	Yes		A- Boric Acid Pump Suction & Recirc.
			36-11	Yes			B- Boric Acid Pump Suction Pipe A- Boric Acid Pump Suction Pipe
			36-12	No	Yes		B- Boric Acid Pump Suction & Recirc.
			46-02/ 36-15	No	Yes		B- Valve 8105 B- Seal Inj. Piping Seal Water Piping

TABLE B
Virgil C. Summer Nuclear Station Smoke Detection

DRAWING	BLDG.	ELEV.	RM NO.	EQUIPMENT			REMARKS
				SAFE SHUTDOWN REDUNDANT TRAINS	SINGLE TRAIN	OTHER SAFETY RELATED	
E-023-008	AB	436	36-30	No	Yes		A- cc Piping
			36-32	No	No	Yes	D- CND
			36-20	No	No	Yes	XDM-5A-CS & Piping
			36-21	No	No	Yes	XDM-5B-CS & Piping
			36-22	No	No	Yes	XDM-8-CS & Piping
			36-25	No	No	Yes	XDM-4A-BR
E-023-005	AB	412	12-22	No	Yes		B- Boron Inj. Line
			12-23	No	Yes		B- Boron Inj. Line
			12-24	No	No	Yes	WD Piping
E-023-003	AB	388	88-01	No	No	Yes	WG Tank & Piping
			88-02	No	No	Yes	WG Tank & Piping
			88-03	No	No	Yes	WG Tank & Piping
			88-04	No	No	Yes	WG Tank & Piping
			00-02W 88-06 88-08	No	Yes		B-CS Piping

TABLE B
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DRAWING	BLDG.	ELEV.	RM NO.	EQUIPMENT			REMARKS
				SAFE SHUTDOWN REDUNDANT TRAINS	SINGLE TRAIN	OTHER SAFETY RELATED	
E-023-003	AB	388	88-09	No	No	Yes	WG Tank & Piping
			88-10	No	No	Yes	WG Tank & Piping
			88-11	No	No	Yes	WG Tank & Piping
			88-12	No	No	yes	WG Tank & Piping
			88-19	No	Yes		B- Seal Water Inj. Piping
			88-20	No	No	Yes	Recycle Holdup Tank B
E-023-002	AB	374	74-05	No	Yes		Sp Line from RWST
			74-15	No	No	Yes	Waste Holdup Tank & Piping
E-023-023	SWPH	425	25-01	No	Yes		B- SW Pipe B- CND
			25-02	No	Yes		C- CND C- SW Pipe