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October 31, 1979

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

Subject: Zion Station Units 1 and 2
 Additional Design Information
 for Fire Protection
NRC Docket Nos. 50-295 and 50-304

Dear Dr. Denton:

In recent discussions with the NRC Staff Fire Protection Review Team for Zion Station, the Review Team indicated a need to review design information for various items contained in the Zion Fire Protection Safety Evaluation Report (SER), specifically Sections 3.1.3, 3.1.4, 3.1.5 and 3.1.15. Commonwealth Edison Company is providing the attached design information in response to this NRC request. The information provided herein is as follows:

1. SER Item 3.1.3 - Design Information for Gas Suppression Systems
 - a. Table entitled "Fire Protection Gas Concentration Data" dated October 14, 1979. The table provides information for the cable spreading areas and for the diesel-driven containment spray pump area.
 - b. Three copies of the following Chemetron drawings for the cable spreading areas.

CO₂ System

FLR 26435-3 Sh. 1, Rev. E, 3-12-79
 Sh. 2, Rev. C, 3-12-79
 Sh. 3, Rev. B, 3-12-79
 Sh. 7, Rev. C, 11-6-78
 Sh. 15, Rev. B, 11-6-78

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Halon System

FLR 26435-8 Sh. 4R, Rev. E, 6-79
Sh. 5R, Rev. D, 6-79
Sh. 6R, Rev. D, 6-79
Sh. 20R, Rev. B, 2-79
Sh. 11, Rev. C, 11-6-78
Sh. 12, Rev. D, 2-5-79
Sh. 16, Rev. B, 11-2-78

- c. Three copies of the following Chemetron drawings for the containment spray pump area.

FL 26747-6 Sh. 1, Rev. C, 1-17-79
Sh. 2, Rev. B, 12-14-78
Sh. 3, Rev. B, 12-12-78
Sh. 4, Rev. A, 10-31-78
Sh. 7, Rev. A, 10-31-78

2. SER Item 3.1.4 - Design Information for Water Suppression Systems

- a. Three copies of the following Viking drawings for the diesel generator water curtains.

04-78161 FP1 dated 5-11-78
04-78161 FP5A dated 3-14-79

- b. Three copies of the following Viking and Sargent & Lundy drawings for the diesel-driven fire pump and day tank.

04-78161 FP2 dated 5-11-78 Viking
B-699 Rev. H dated 9-22-78 S&L
22E-0-3228 Rev. A dated 12-28-78 S&L
22E-0-4840 FP59 Rev. A dated 12-28-78 S&L

3. SER Item 3.1.5 - Design Information for the Electric Motor-Driven Fire Pump Controller

Manufacturer - Square D
Catalog #9001 KYC-6
UL Guide #NKCR File E-42259

The controller is UL listed as noted above. The electric motor-driven fire pump can be started or stopped from the Control Room. It can also be started or stopped locally at the fire pump location.

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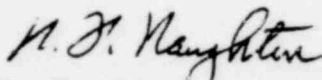
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4. SER Item 3.1.15 - Design Information for Protecting the Structural Steel from Fire Damage

A fire retardant coating, Pyrocrete 102, supplied by the Carbolite Company has been applied to the steel columns and beams in the cable spreading rooms, auxiliary electric equipment rooms and the plenum for the diesel generator air intakes. The coating, as applied, results in a three-hour fire rating for the covered materials.

Please forward this information to the NRC Fire Protection Review Team for Zion Station.

Very truly yours,



W. F. Naughton
Nuclear Licensing Administrator
Pressurized Water Reactors

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attachments

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Fire Protection Gas Concentration Data

Cable Spreading Areas - HALON 1301

<u>Unit 1</u>	<u>Concentration by Volume</u>	<u>Initial Discharge</u>		<u>Extended Discharge</u>	
	<u>%</u>	<u>LBS</u>	<u>Flood Time (Sec)</u>	<u>LBS</u>	<u>Flood Time (Sec)</u>
Inner	5.59	720	16.1	489	703.3
Outer	5.41	2400	18.2	1630	621.3
North Vault	5.01	204	15.4	70	330.0
South Vault	5.04	147	20.4	70	329.7
<u>Unit 2</u>					
Inner	5.59	720	17.2	489	662.1
Outer	5.38	2400	21.8	1630	662.4
North Vault	5.04	147	20.8	70	284.9
South Vault	5.01	204	20.8	70	346.5

Cable Spreading Areas - CO-2

<u>Unit 1</u>	<u>Concentration by Volume</u>	<u>Initial Discharge</u>		<u>Extended Discharge</u>		<u>2 Minute Discharge (30%)</u>	
		<u>LBS</u>	<u>Flood Time (Sec)</u>	<u>LBS</u>	<u>Flood Time (Sec)</u>	<u>Req. LBS</u>	<u>Calc. LBS</u>
Inner	50	2815	150	700	600	1340	2200
Outer	50	9608	150	4500	600	4619	7599
North Vault	50	965	135	500	600	419	847
South Vault	50	811	120	500	600	325	811
<u>Unit 2</u>							
Inner	50	2873	160	700	600	1340	1950
Outer	50	9524	165	4500	600	4619	6720
North Vault	50	827	165	500	600	325	550
South Vault	50	973	172	500	600	419	630

- Remarks:
1. HA % concentration starts near end of initial discharge and is maintained for a minimum soak time of 10 minutes.
 2. The extended discharge overlaps initial discharge and provides additional flooding at a rate governed by the anticipated leakage for each area to maintain a minimum 5% concentration level for HA and 50% for CO-2.

Containment Spray Pumps A, B & C (Total Flood - CO-2)

	<u>Concentration by Volume</u>	<u>Discharge</u>	
	<u>%</u>	<u>LBS</u>	<u>Flood Time (Sec)</u>
Unit 1	34 (In 1 Min.)	887	52
Unit 2	34 (In 1 Min.)	894	56

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Containment Spray Pump C Diesel Oil Day Tank (55 Gal.)