

The Light company

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October 29, 1985
ST-HL-AE-1463
File No.: G9.17

Mr. George W. Knighton, Chief
Licensing Branch No. 3
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, DC 20555

South Texas Project
Units 1 and 2
Docket Nos. STN 50-498, STN 50-499
Responses to DSER/FSAR Items
Concerning TMI Action Item II.B.2 (D12.3-3)

Dear Mr. Knighton:

The attachments enclosed provide STP's response to Draft Safety Evaluation Report (DSER) or Final Safety Analysis Report (FSAR) items.

The item numbers listed below correspond to those assigned on STP's internal list of items for completion which includes open and confirmatory DSER items, STP FSAR open items and open NRC questions. This list was given to your Mr. N. Prasad Kadambi on October 8, 1985 by our Mr. M. E. Powell.

The attachment includes mark-ups of FSAR pages which will be incorporated in a future FSAR amendment unless otherwise noted below.

The items which are attached to this letter are:

<u>Attachment</u>	<u>Item No.*</u>	<u>Subject</u>
1	D 12.3-3	Summary of Integrated Doses (TMI Item II.B.2)

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* Legend

D - DSER Open Item
F - FSAR Open Item

C - DSER Confirmatory Item
Q - FSAR Question Response Item

L1/DSER/aam

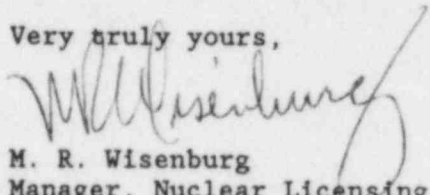
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Houston Lighting & Power Company

ST-HL-AE-1463
File No.: G9.17
Page 2

If you should have any questions concerning this matter, please contact Mr. Powell at (713) 993-1328.

Very truly yours,



M. R. Wisenburg
Manager, Nuclear Licensing

MEP/b1

Attachments: See above

L1/DSER/aam

cc:

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Revised 9/25/85

STP Position

A review of the post accident radiation environment for both access and equipment qualification has been performed using the methodology and assumptions described below.

Source Terms

The core inventory for STP was generated using a 3 region core model (300, 600, 900 EFPD) with a conservative core power level of 4100 MWt. This core inventory was partitioned as follows:

Airborne Source: 100% Noble Gas, 50% Halogens
Liquid Source: 50% Halogens, 1% Solids

Each source was diluted by the appropriate dilution volume. In the airborne case this was the containment net free volume while in the liquid case it was the total liquid volume of the primary system, accumulators, and the available volume of the refueling water storage tank.

The airborne source was assumed to be instantaneously released and distributed throughout the containment atmosphere. In the liquid case the source was decayed for a short period equal to the time required for recirculation to begin. It was assumed to be distributed in the containment sump (no decay assumed), portions of the Residual Heat Removal, Safety Injection and Containment Spray systems.

45

Post Accident Radiation Zones

Using the source terms described, radiation zone maps were generated for the Reactor Containment Building, Mechanical and Electrical Auxiliary Building, Fuel Handling Building, and the Isolation Valve Cubicle. The resulting zone maps can be found in Section 12.3 (Figure 12.3.1-19 thru 36). ~~These maps were used to determine the accessibility of those areas which require either continuous or infrequent access post accident.~~

(1) Continuous Occupancy

The areas requiring continuous occupancy, Control Room Envelope (Section 6.4) and the Technical Support Center, were found to have an average dose rate less than 15 mR/hr for the 30 days following the accident. ~~Insert "A"~~

(2) Infrequent Access

~~For these areas, the dose rates and anticipated doses were found to be within the limits of GDC 19. (e.g., Post Accident Sampling System, auxiliary shutdown panel, counting room).~~

INSERT 'B'

Insert "A"

ATTACHMENT 1
ST-HL-AE-1463
PAGE 2 OF 3

The thirty day integrated doses were determined and found to be below GDC 19 limits (Table II.B.2-2)

Insert "B"

The infrequent access areas were reviewed ^{in conjunction} with the use of the post accident radiation zones found in Section 12.3. Using these drawings a review was made of the routes used to reach each area and the expected dose rates at each location was analyzed. Based on this review each of the areas ~~was~~ ^{were} found to be accessible from the control room. The area dose rate at various times, for each location, after the accident has been provided in Table II.B.2-2. In the event that entry is required in these areas, due consideration is given to the dose rates expected and appropriate time limits for presence in the area are imposed to ensure that the doses received will not exceed GDC 19 limits.

Table II.B.2 - 2
Post Accident Radiation levels/Doses

Continuous Occupancy Areas:

Control Room

Technical Support Center

30 day Doses		(Rem)
Gamma	Beta	Thyroid
2.43	18.7	14.8
4.88	21.62	19.86

In frequent Access Areas:

FSAR Figure Reference	Area	Dose Rate (R/Hr)			
		Time after accident			
		1hr	1day	1wk	1month
12.3.1-36	Post accident Sample station	.75 6×10^{-3}	4.5×10^{-2}	1.1×10^{-2}	6×10^{-4}
12.3.1-27	Health Physics Counting Room		3.6×10^{-4}	9×10^{-5}	4.8×10^{-6}
12.3.1-27	Radiation Counting Room	3.1×10^{-2}	1.8×10^{-3}	4.6×10^{-4}	2.4×10^{-5}
12.3.1-28	Plant vent radiation monitor	4.74	.28	7.1×10^{-2}	3.8×10^{-3}
12.3.1-25	Auxiliary Shutdown panel	8×10^{-4}	4.8×10^{-5}	1.2×10^{-5}	6.4×10^{-7}