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

SUBJECT: Forwards info per 801222 request for addl info re NUREG 0612, "Control of Heavy Loads." BAW-1710P, "Analysis of Effect of Reactor Vessel Head Drop on Reactor Vessel" withheld (ref 10CFR2.790). Ltr to subj files 1710P

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WILLIAM O. PARKER, JR.
VICE PRESIDENT
STEAM PRODUCTION

TELEPHONE: AREA 704
373-4083

June 22, 1982

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

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

Dear Sir:

Supplementing my letters of June 24, 1981, July 30, 1981, August 31, 1981, October 1, 1981, and May 11, 1982, please find attached results of the evaluation of the Oconee Nuclear Station Heavy Load Handling Systems in the Reactor Building. Attachments 1 through 5 contain the information requested in sections 2.3 and 2.4 of Enclosure 3 to your letter dated December 22, 1980 on the subject of NUREG-0612 and conclude the investigation of Heavy Load Handling Operations at Oconee Nuclear Station.

Regarding your letter dated February 18, 1982 and supplementing my letter of May 10, 1982 concerning a Draft Technical Evaluation Report by Franklin Research Center on control of heavy loads at Oconee, the requested information should be available and provided to you by September 24, 1982. The delay is due in part to design work being done by the crane manufacturers.

Very truly yours,

William O. Parker, Jr.

JFN/php
Attachment

cc: Mr. James P. O'Reilly, Regional Administrator
U. S. Nuclear Regulatory Commission
Region II
101 Marietta Street, Suite 3100
Atlanta, Georgia 30303

A033

OCONEE NUCLEAR STATION

REACTOR BUILDING

NUREG 0612

PHASE II

INTRODUCTION

The information presented in this report is the result of a detailed evaluation of load handling operations in the Reactor Buildings at Oconee Nuclear Station. This information was requested by the NRC in their letter, dated December 22, 1980, concerning NUREG 0612, "The Control of Heavy Loads at Nuclear Power Plants".

SCOPE

This report is divided into two (2) parts. "Part A" addresses specific requirements set forth in sections 2.4 of Enclosure 3 to the NRC's letter as they pertain to the Reactor Buildings at Oconee Nuclear Station. "Part B" addresses specific requirements set forth in section 2.3 of the same Enclosure.

PART A:

CRANE/LOAD COMBINATIONS CONSIDERED

The crane/load combinations considered in this review are listed in Table II of the previous report to the NRC titled, "Oconee Nuclear Station, Reactor Building, Control of Heavy Loads, (NUREG 0612)".

COMPREHENSIVE HAZARD EVALUATION

A comprehensive hazard evaluation was performed on the crane/load combinations referenced above as requested in section 2.4-2 of Enclosure 3. This review was broken down into two (2) sections to cover systems needed at hot shutdown and those required at cold shutdown. The results of this evaluation are found in Figure I and its attachments which are included in this report.

Impact Areas

The impact areas given in Figure I cover the areas over which the cranes handle heavy loads and correspond to those areas indicated as load drop areas on the marked prints previously submitted to the NRC, with one (1) exception. Due to the number and nature of vital systems located within the steam generator cavities, it has been decided to restrict the movement of loads while the Unit is at hot shutdown to the area over the fuel transfer canal, eliminating of the "dog leg" portion of the load drop area over the steam generator cavities. This will be facilitated by adding a statement to the "Restrictions" clause in the Hot Shutdown Enclosure attached to the polar cranes. A copy of this enclosure is included in this report.

Results

All vital systems and components were reviewed to determine the effects of the postulated load drops. The results of this review, as noted by the hazard elimination catagories in Figure I, show that for the postulated load drops, damage to vital equipment will be limited so as not to result in the loss of required safety functions as specified in section 5.1-IV of NUREG 0612.

Specific information requested in section 2.4-2-b(3) of Enclosure 3 is included in the "Hazard Elimination Catagory Definitions" attached to Figure I.

Conclusion

After careful evaluation of all possible load/target combinations, it has been concluded that a load drop in the Reactor Building will not preclude the ability of vital systems to perform their safety functions.

PART B:

CRANE/LOAD COMBINATIONS CONSIDERED

Cranes considered for this review are those identified in Table I of Duke Power's previous submittal to the NRC titled, "Oconee Nuclear Station, Reactor Building, Control of Heavy Loads, (NUREG 0612), under the heading "Handles Heavy Loads And Has Reactor Vessel In Load Drop Area". The associated loads are found in Table II of the same report.

ANALYSIS OF POSTULATED LOAD DROPS

These analysis were performed to demonstrate compliance with Criteria I and III. A report covering analysis performed to demonstrate compliance with Criteria II was submitted at an earlier date.

Hot Shutdown:

Under hot shutdown conditions, the possibility exists of:

1. Dropping the polar crane main load block onto the reactor vessel shield blocks.

2. Dropping the reactor vessel shield blocks onto the control rod drive structure.

Each of these accidents were analized in accordance with the guidelines of NUREG 0612, Appendix A in order to demonstrate compliance with section 5.1 of the NUREG. The information requested in section 2.3-4.c. is found in attachments 1 and 2 to this report.

Results

It was determined in the first case, that the shield blocks could withstand the impact of the load block, affording adequate protection for the underlying structures.

In the second case it was shown that the shield blocks will fall back onto their supports if dropped, eliminating the possibility of them falling onto the conrol rod drive structure.

Conclusion

After a careful evaluation of our analysis of postulated load drops over the reactor vessel at hot shutdown, it has been concluded that the reactor vessel will not be subject to damage due to heavy load handling operations. (Full compliance with Criteria I and III).

Cold Shutdown: (Fuel Loaded)

Of the crane/load combinations possible while the Unit is at cold shutdown, only two (2) will be considered because they envelope the others.

1. The first accident consist of dropping the reactor head onto the vessel flange from a maximum height of 5'-0". This accident could cause structural damage to the vessel and attached piping resulting in the loss of cooling water. (Criteria III)

2. The second accident consist of an oblique drop of the reactor head onto the upper internals. This accident could damage fuel, releasing radioactive gasses (Criteria I) and result in increased gap activity above acceptable limits. (Criteria II, addressed in previous report)

Each of these accidents were analyzed in accordance with the guidelines of NUREG 0612, Appendix A. The information requested in section 2.3-4.c is found in attachments 4 and 5 to this report.

Results

An analysis to determine the consequences of dropping the reactor head onto the flange was performed by Babcock & Wilcox at Duke Power Company's request. Results of this analysis show structural damage incurred by the reactor vessel and attached piping does not result in the loss of cooling water or the function of the decay heat removal systems.

Analysis performed to determine the radiological dose consequences of an oblique head drop onto the upper internals show the resulting doses well within 10 CFR Part 100 limits.

Conclusion

If the maximum height the head is lifted over the vessel is limited to 5'-0", damage from an accidental drop will not result in loss of cooling water or radiological doses in excess of 10 CFR Part 100.

The maximum lifting height of the head while over the vessel will be restricted to 5'-0" by adding a statement to the "Restrictions" clause of the Cold Shutdown Enclosure attached to the polar crane. A copy of this enclosure is attached to the report.

FIGURE 1

Load/Impact Area Matrix

CRANE: POLAR CRANE (RB-15)

LOCATION: UNIT 1 REACTOR BUILDING, COLD SHUTDOWN

IMPACT AREA: OTHER AREAS OF THE BUILDING

LOADS

	ELEVATION	SAFETY-RELATED EQUIPMENT	HAZARD ELIMINATION CATAGORY
Crane Load Block (4 Tons)	831+0	3-1PT's	f.
	831+0 to 798+0	3-1LP's	b.2.
	800+0	1/53/40	b.2.
	798+0	1/53/39	b.2.

FIGURE 1

Load/Impact Area Matrix

CRANE: POLAR CRANE (RB-15)

LOCATION: UNIT 1 REACTOR BUILDING, COLD SHUTDOWN

IMPACT AREA: TRANSFER CANAL AND SAFE LOAD PATH TO R.V. HEAD STAND

LOADS:

	ELEVATION	SAFETY RELATED EQUIPMENT	HAZARD ELIMINATION CATAGORY
R.V. Head (106.4 Tons)	809+6	2-30" Hot Legs	b.1.
R.V. Upper Internals (30 Tons)	809+6	4-28" Cold Legs	b.1.
	811+6	2-14" Core Flood	b.1.
	792+4	10" LPI	b.1.
	806+0	1½" LPI	b.1.

FIGURE 1

Load/Impact Area Matrix

CRANE: POLAR CRANE (RB-15)

LOCATION: UNIT 1 REACTOR BUILDING, COLD SHUTDOWN

IMPACT AREA: STEAM GENERATOR CAVITIES

LOADS:

	ELEVATION	SAFETY-RELATED EQUIPMENT	HAZARD ELIMINATION CATAGORY
Shield Blocks (50 Tons)	804+6	12" LPI	b.1.
Indexing Fixture (25 Tons)			
Reactor Coolant Pump Motors (50 Tons)			

FIGURE 1

Load/Impact Area Matrix

CRANE: POLAR CRANE (RB-15)

LOCATION: UNIT 1 REACTOR BUILDING, HOT SHUTDOWN

IMPACT AREA: TRANSFER CANAL SECTION OF LOAD DROP AREA

LOADS:

	ELEVATION	SAFETY-RELATED EQUIPMENT	HAZARD ELIMINATION CATAGORY
Shield Block (50 Tons)	811+6	2-14" C.F.	e.
	809+6	2-30" Hot Legs	e.
Crane Load Block (4 Tons)	809+6	4-28" Cold Legs	e.
	806+0	1½" LPI	e.
	815+0	NI 5,7 NI 6,8	e.
	793+6	2" SSF	e.
	792+0	10" LPI	e.
	783+6	2" SSF	e.
	838+6/840+9	6" LPSW	b.2.
	789+10	1½" N_2	f.
	790+6	1" N_2	f.
	827+6	5-4" LPSW	e.
	785+6	3" OTSG	b.2.
	821+6	2-3" LPSW	b.2.
	787+3	1PT-223	e.
	787+3	1LT-66	e.
	787+3	1FT-128	e.
	787+3	CCW-169	e.
	787+3	HP-398	e.
	787+3	1PT-227	e.
	787+3	1RD-174	e.

FIGURE 1

Load/Impact Area Matrix

CRANE: POLAR CRANE (RB-30)

LOCATION: UNIT 2 REACTOR BUILDING, COLD SHUTDOWN

IMPACT AREA: TRANSFER CANAL AND SAFE LOAD PATH TO R.V. HEAD STAND

LOADS:

	ELEVATION	SAFETY-RELATED EQUIPMENT	HAZARD ELIMINATION CATAGORY
R.V. Head (106.4 Tons)	804+6	12" DHR	b.1.
R. V. Upper Internals (30 Tons)	797+9	3" LPI	b.1.
	795+3	12" DHR	b.1.
	811+6	2-14" CF	b.1.
	792+4½	10" LPI	b.1.
	809+6	2-30" Hot Legs	b.1.
	809+6	4-28" Cold Legs	b.1.
	793+1	1½" LPI	b.1.

FIGURE 1

Load/Impact Area Matrix

CRANE: POLAR CRANE (RB-30)

LOCATION: UNIT 2 REACTOR BUILDING, COLD SHUTDOWN

IMPACT AREA: OTHER AREAS OF THE BUILDING

LOADS:

	ELEVATION	SAFETY-RELATED EQUIPMENT	HAZARD ELIMINATION CATAGORY
Crane Load Block (4 Tons)	830	2 PT	f.
	839	2 PT	f.
	828	2 PT	f.
	802	2-3 LP	b.2.

FIGURE 1

Load/Impact Area Matrix

CRANE: POLAR CRANE (RB-30)

LOCATION: UNIT 2 REACTOR BUILDING, HOT SHUTDOWN

IMPACT AREA: TRANSFER CANAL SECTION OF LOAD DROP AREA

LOADS:

	ELEVATION	SAFETY-RELATED EQUIPMENT	HAZARD ELIMINATION CATAGORY
Shield Block (50 Tons)	809+6	2-30" Hot Legs	e.
	809+6	4-28" Cold Legs	e.
	840+9	6" LPSW	b.2.
Crane Load Block (4 Tons)	867+0	1" N_2	f.
	792+6	1" N_2	f.
	792+6	1½" N_2	f.
	827+6 to 822+9 3/16	3-4" LPSW	e.
	784+7	3" OTSG	b.2.
	793+1 & 783+8	2-2" SSF	e.
	783+8	3" SSF	e.
	789+0	LT-66	e.
	789+0	RD-174	e.
	789+0	PT-227	e.
	789+0	PT-223	e.
	789+0	HP-398	e.
	789+0	FT-128	e.
	789+0	LT-66	e.
	789+0	CCW-169	e.
	789+0	RD-174	e.
	789+0	PT-227	e.
	789+0	PT-223	e.
	789+0	HP-398	e.
	789+0	FT-128	e.
	824+0	2NI7	e.
	824+0	3NI8	e.
	836+0	2NI5	e.
	836+0	2NI6	e.
	804+6	12" DHR	e.
	797+9	3" LPI	e.
	795+3	12" DHR	e.
	811+6	2-14" CF	e.
	792+4½	10" LPI	e.
	793+1	1½" LPI	e.

FIGURE 1

Load/Impact Area Matrix

CRANE: POLAR CRANE (RB-45)

LOCATION: UNIT 3 REACTOR BUILDING, COLD SHUTDOWN

IMPACT AREA: TRANSFER CANAL AND SAFE LOAD PATH TO R.V. HEAD STAND

LOADS:

	ELEVATION	SAFETY-RELATED EQUIPMENT	HAZARD ELIMINATION CATAGORY
R.V. Head (106.4 Tons)	809+6	2-30" Hot Legs	b.1.
R.V. Upper Internals (30 Tons)	809+6	4-28" Cold Legs	b.1.
	811+6	2-14" CF	b.1.
	795+3	12" LPI	b.1.
	804+6	12" LPI	b.1.
	793+4½	10" LPI	b.1.
	793+1	1½" LPI	b.1.

FIGURE 1

Load/Impact Area Matrix

CRANE: POLAR CRANE (RB-45)

LOCATION: UNIT 3 REACTOR BUILDING, COLD SHUTDOWN

IMPACT AREA: STEAM GENERATOR CAVITIES

LOADS:

	ELEVATION	SAFETY-RELATED EQUIPMENT	HAZARD ELIMINATION CATAGORY
Shield Blocks (50 Tons)	795+3	12" LPI	b.1.
Indexing Fixture (25 Tons)			
Reactor Coolant Pump Motors (50 Tons)			

FIGURE 1

Load/Impact Area Matrix

CRANE: POLAR CRANE (RB-45)

LOCATION: UNIT 3 REACTOR BUILDING, COLD SHUTDOWN

IMPACT AREA: OTHER AREAS OF BUILDING

LOADS:

	ELEVATION	SAFETY-RELATED EQUIPMENT	HAZARD ELIMINATION CATAGORY
Crane Load Block (4 Tons)	831+0	3 PT	f.
	830+0	3 PT	f.
	829+0	3 PT	f.
	802+0	2-3 LP	b.2.
	802+0	3/53/40	b.2.
	802+0	3/53/39	b.2.

FIGURE 1

Load/Impact Area Matrix

CRANE: POLAR CRANE (RB-45)

LOCATION: UNIT 3 REACTOR BUILDING, HOT SHUTDOWN

IMPACT AREA: TRANSFER CANAL SECTION OF LOAD DROP AREA

LOADS:

	ELEVATION	SAFETY-RELATED EQUIPMENT	HAZARD ELIMINATION CATAGORY
Crane Load Block (4 Tons)	809+6	2-30" Hot Legs	e.
	809+6	4-28" Cold Legs	e.
	784+7	3" FDW Drain	f.
	827+6 to 822+9	2- 4" LPSW	e.
	793+6	1" to 1½" N_2	f.
	867+0	1" N_2	f.
	840+9 to 838+6	6" LPSW	b.2.
	811+6	2-14" CF	e.
	795+3	12" LPI	e.
	804+6	12" LPI	e.
	792+4½	10" LPI	e.
	793+1	1½" LPI	e.
	793+0	2" SSF	e.
	783+0	2- 2" SSF	e.
	824+0	3NI7, 3NI8	e.
	236+0	3NI5, 3NI6	e.
	789+0	LT-66	e.
	789+0	CCW-169	e.
	789+0	RD-174	e.
	789+0	PT-227	e.
	789+0	PT-223	e.
	789+0	HP-398	e.
	789+0	FT-128	e.

Hazard Elimination Catagory Definitions

a.) Crane travel for this area/load combination prohibited by electrical or mechanical stops.

Note: This catagory is not utilized in the Reactor Building.

b.1.) This system has sufficient internal separation and redundancy, allowing it to perform its safety function in the event of a load drop in this area while the Unit is at Cold Shutdown.

b.2.) This system has sufficient internal separation and redundancy with cross-connections and isolations to allow it to perform its safety function in the event of a load drop in this area.

c.) Site-Specific considerations preclude the need to consider load/target combination.

Note: This catagory not utilized in the Reactor Building

d.) Likelyhood of handling system failure for this load is extremely small.

Note: This catagory not utilized in the Reactor Building.

e.) Analysis demonstrate that the shield blocks, if dropped, will fall back onto their supports without damaging underlying systems. Additional analysis demonstrates that these systems will not be damaged in the event of a two blocking accident, wherein the crane load block falls from its maximum height and impacts the overlying structure. The information requested in section 2.3-4.c is found in Attachments (1), (2), & (3).

f.) This system is not required for safe shutdown or decay heat removal.

ATTACHMENT (1)

ANALYSIS OF LOAD/TARGET

Polar Crane Main Load Block/
Reactor Vessel Shield Block

I. INITIAL CONDITIONS/ASSUMPTIONS

A. Weight of load block
Wt = 8000 lbs.
B. Impact area of load
A min = 418 in^2
C. Drop height
H = 52.375 ft.
D. Drop location
Midspan of the shield block over the Reactor Vessel
E. Impact Limiters
None were considered
F. Shield block thickness
T = 36 in.
G. Drag forces
None considered
H. Load Combinations
Dead Load + Impact load
I. Material properties
fc = 4000 PSI
fy = 60,000 PSI
Hard Missile

II. METHOD OF ANALYSIS

The methods used to analyize the effects of this load drop are consistant with those given in the Topical Report BC-TOP-9, Rev. 2, titled "Design of Structures for Missile Impact", dated September, 1974 as published by Bechtel Power Corporation and approved by the NRC.

III. CONSLUSION

The shield blocks are adequately designed for this postulated load drop, having sufficient capacity to withstand the load impact without structural failure or the generation of secondary missiles.

ATTACHMENT (2)

ANALYSIS OF LOAD/TARGET

Reactor Vessel Shield Block/
Shield Block Supports

I. INITIAL CONDITIONS/ASSUMPTIONS

A. Weight of shield block
Wt = 101.59 Kips

B. Impact area of load
N/A

C. Drop height
H = 41" max.

D. Drop location
Back onto supports

E. Impact limiters
None were considered

F. Shield block thickness
T = 36 in

G. Drag forces
None considered

H. Load Combination
Dead Load + Impact load

I. Material properties
f'_c = 4000 PSI, f_y = 60,000 PSI

II. METHOD OF ANALYSIS

The methods used to analize the effects of this load drop are consistant with those given in the Topical Report BC-TOP-9, Rev. 2, titled "Design of Structures for Missile Impact", dated September, 1974 as published by Bechtel Power Corporation and approved by the NRC.

III. CONCLUSION

This analysis shows that the shield block, if dropped, will fall back onto its supports and not topple onto the underlying control rod drive structure. The shield blocks are adequately designed for this postulated load drop, having sufficient capacity to withstand the impact without structural failure or the generation of secondary missiles.

ATTACHMENT (3)

ANALYSIS OF LOAD/TARGET

Polar Crane Main Load Block/
Fuel Transfer Canal Floor

I. INITIAL CONDITIONS/ASSUMPTIONS

A. Weight of load block
wt = 8000 lbs.

B. Impact area of load
A min = 418 in^2

C. Drop height
H = 97.375 ft.

D. Drop location
Midspan of longest unsupported length, assume one way 4' x 4' beam to absorb impact.

E. Impact limiters
None were considered

F. Floor thickness
T = 48 in.

G. Drag forces
None considered

H. Load combinations
Dead load + Impact loads

I. Material properties
f'c = 4000 PSI
fy = 60,000 PSI

II. METHOD OF ANALYSIS

The methods used to analize the effects of this load drop are consistant with those given in the Topical Report BC-TOP-9, Rev. 2 titled "Design of Structures for Missile Impact", dated September, 1974 as published by Bechtel Power Coporation and approved by the NRC.

III. CONCLUSION

The Fuel Transfer Canal floor is adequately designed for this postulated load drop, having sufficient capacity to withstand the load impact without structural failure or the generation of secondary missiles.

ATTACHMENT 4

ANALYSIS OF RADIOLOGICAL RELEASES FOR NUREG-0612 CONCERNS

1. Initial Conditions/Assumptions

a. Time after shutdown = 72 hours[1]

Number of fuel assemblies damaged = 177 of 177

Duration of release = 30 seconds[2]

b. Power level (MW_t) = 2568 MW_t

X/Q (EAB), 0-2 Hour = 2.2×10^{-4} s/m^3 [3]

X/Q (LPZ), 0-2 Hour = 2.3×10^{-5} s/m^3 [3]

Peaking factor - Not Applicable (using total core release)[4]

Number of assemblies in core = 177

Pool water decontamination factor = 100 for iodines[5]
= 1 for noble gases[5]

Filter Efficiency %:

All iodines = 99% [6]

Noble gases = 0%

Cooling Time = 72 hours

c. References

(1) Oconee FSAR, Oconee Technical Specifications

(2) Calculation of R. J. Jenny for release time following RV head drop (time starts at the refueling bridge purge vents)

(3) Telephone conversations with S. T. Apply on 3/18/82 and 3/26/82, respectively

(4) Conversation with N. T. Simms of 3/29/82

(5) Reg. Guide 1.25

(6) Specification No. OS-272-D for Reactor Building Purge Air Filter System

d. Refer to Reference (2)

2. Methods of Analysis

a. Releases are calculated from total fission product inventories at end of core life. Decay occurs for 3 days (72 hours) and activity gap fractions are taken from Reg. Guide 1.25. Doses are calculated by isotope with the total thyroid dose given as the sum of the isotopic dose contributions of the radioactive iodines, and the total whole body dose, likewise, being the sum of the isotopic dose contributions of the noble gases. Doses are calculated according to Reg. Guide 1.25 methodology.

The exception to this is the assumption used for the realistic whole body dose that noble gases will be contained in 30 seconds by isolation of the containment upon receipt of high radiation alarm.

b. No computer programs were employed in this analysis.

c. Because the release time was based on design rated conditions of flow, a conservatism of 20% was added to the release time.

3. Conclusion

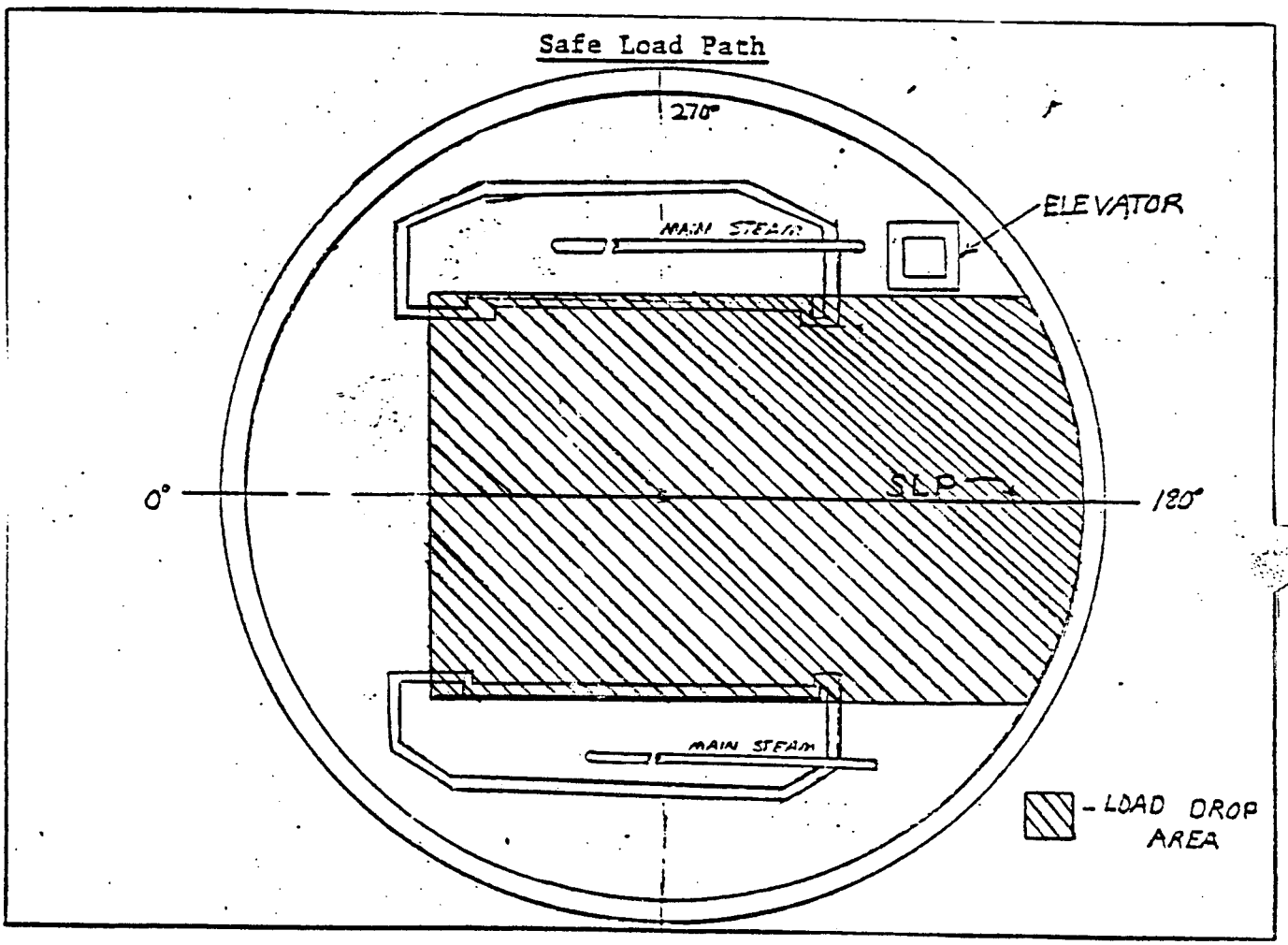
Postulated doses were found to meet one-fourth of 10 CFR Part 100 limits for all cases at the Low Population Zone Boundary. This was not the case for Exclusion Area Boundary doses. When containment isolation is assumed to limit release of radioactive iodines and noble gases, doses for thyroid inhalation and whole body submersion are well within one-fourth of 10 CFR 100 limits. However, if a total release of noble gases is assumed, this limit for whole body dose is exceeded, although the total 10 CFR 100 limit for whole body dose is not. Results of the dose analysis are presented here in tabular form:

Type of Dose	Calculated Dose (REM)	Dose Limits (REM) 1/4 of 10 CFR Part 100	10 CFR Part 100
EAB:			
Thyroid	4.5	75	300
Whole Body:			
Realistic	1.3	6.25	25
Conservative	19.1	6.25	25
LPZ:			
Thyroid	0.5	75	300
Whole Body:			
Realistic	0.1	6.25	25
Conservative	2.0	6.25	25

ENCLOSURE # 5.7

Crane Name Polar Crane (Hot Shutdown) Crane # C-3

Safe Load Path



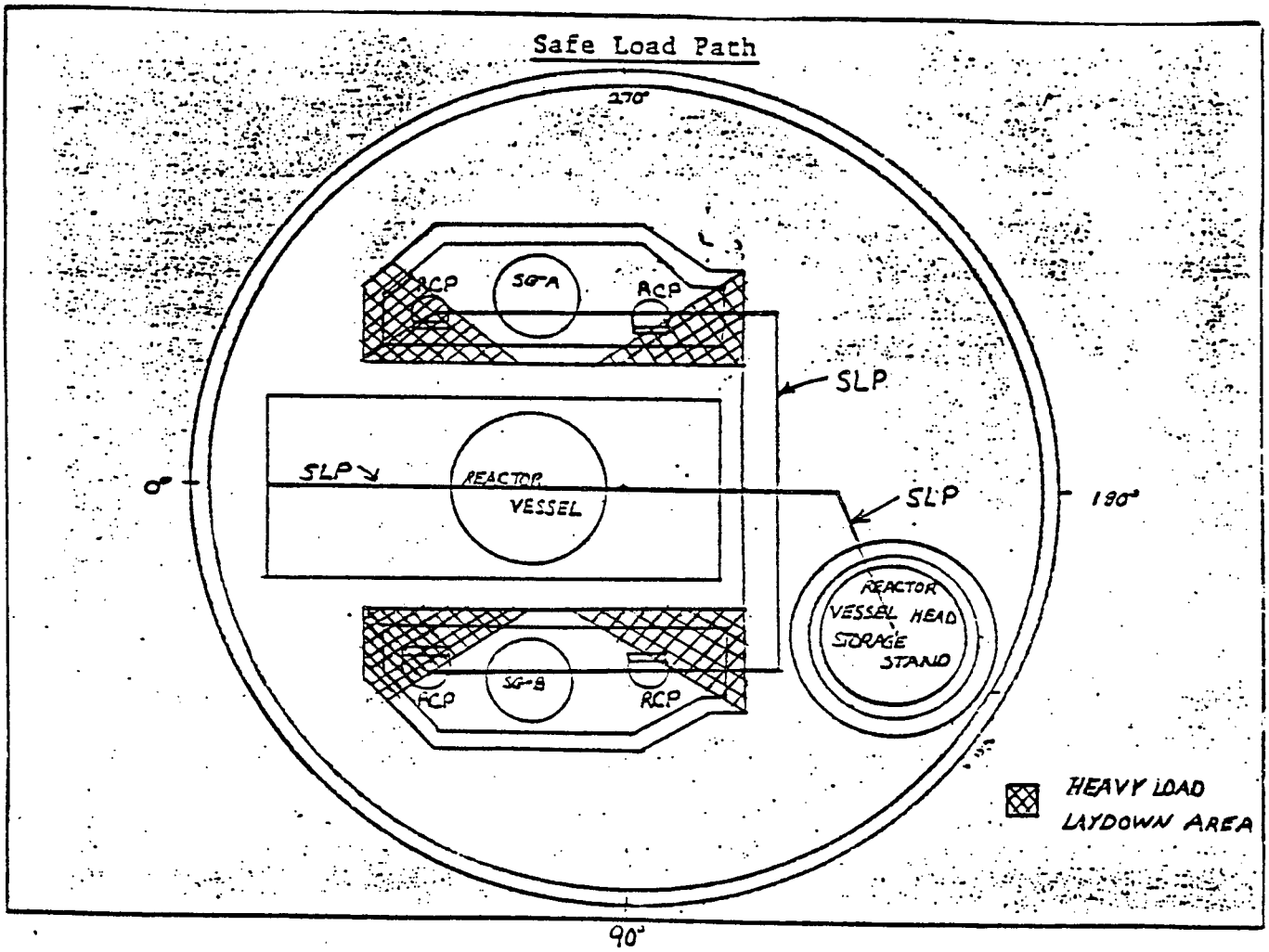
Restrictions: Hot shutdown (limit usage to stator work)
Move shield blocks on top of other shield blocks (limit vertical movement to 4" above other shield block)

Heavy Lift: Missile Shield Blocks
Instruction & Equipment

Inspection Instructions and Comments:
MP/0/A/3000/10B

ENCLOSURE # 5.8

Crane Name Polar Crane (Cold Shutdown) Crane # C-3



Restrictions: The reactor head shall not be carried over the reactor vessel at a height in excess of 5'-0".

Heavy Lift: Instruction & Equipment
- Reactor Vessel Head
- Internals
- Reactor Coolant Pumps
- Missile Shield Blocks

Inspection Instructions and Comments:
MP/0/A/3000/10B

NOTICE

THE ATTACHED DOCUMENT MAY CONTAIN "PROPRIETARY INFORMATION" OR MATERIAL OF A PRIVACY NATURE, AND SHOULD BE HANDLED AS NRC "OFFICIAL USE ONLY" INFORMATION. IT SHOULD NOT BE DISCUSSED OR MADE AVAILABLE TO ANY PERSON NOT REQUIRING SUCH INFORMATION IN THE CONDUCT OF OFFICAL BUSINESS AND SHOULD BE STORED IN A MANNER WHICH WILL ASSURE THAT ITS CONTENTS ARE NOT MADE AVAILABLE TO UNAUTHORIZED PERSONS.