

**DUKE POWER COMPANY**

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November 1, 1982

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

Attention: Ms. Elinor G. Adensam, Chief  
Licensing Branch No. 4

Re: McGuire Nuclear Station  
Docket Nos. 50-369, 50-370

Dear Mr. Denton:

Attached are responses to concerns related to NUREG-0612, Control of Heavy Loads at Nuclear Power Plants. Attachment 1 contains responses to the draft technical evaluation report which was transmitted by Elinor G. Adensam's letter of September 9, 1982. Attachment 2 contains the results of an evaluation of load handling operations in the spent fuel pool areas as requested in Section 2.2 of Enclosure 3 to the generic letter of December 22, 1980. Attachment 3 contains the results of an evaluation of load handling operations in the Auxiliary Building as requested in Section 2.4 of Enclosure 3 to the generic letter referenced above.

Note that in a conference call with NRC on October 15, 1982 concerning the draft technical evaluation report, it was agreed that this submittal would be delayed until November 1, 1982 in order to include responses to this draft report.

Please contact R. E. Harris (704-373-8771) if there are additional questions or concerns.

Very truly yours,

*H.B. Tucker*

Hal B. Tucker

REH:jfw  
Attachments

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

Mr. P. R. Bemis  
Senior Resident Inspector  
McGuire Nuclear Station

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Attachment 1

The following are responses to concerns identified in the draft technical evaluation report attached with Ms. Elinor G. Adensam's letter of September 9, 1982:

1. Problem: Lack of load paths for the diesel generator cranes.

Response: The diesel generator cranes are sole-purpose systems for a single diesel generator; these cranes do not carry heavy loads over other safety-related equipment and are used to service equipment when the diesel generator has been placed out of service in accordance with plant technical specifications. For these reasons, we feel that load paths are not necessary.

2. Problem: Safe load paths not developed for jib cranes.

Response: Load drops from jib cranes will not affect safe shutdown equipment. (See Duke's response to Section 2.4 of Enclosure 3 to the December 22, 1980 generic letter.) Therefore, safe load paths are not necessary.

3. Problem: Safe load paths are not developed for ice condenser bridge cranes.

Response: A general purpose or "preferred" load path will be developed. Movement of individual loads within the ice condenser will be by the most direct route to this general purpose path for subsequent movement to other areas in the ice condenser. These procedures will be developed by May 1, 1983.

4. Problem: Safe load paths are not developed for the reactor building polar cranes.

Response: Safe load paths will be developed for the major equipment handled by the reactor building polar cranes by May 1, 1983. This will include the reactor head, missile shields, reactor coolant pumps and motors, reactor coolant pump hatch plugs, reactor internals, reactor internals lifting rig, and the reactor head lifting rig.

5. Problem: No information has been provided to verify that deviations from established load paths will require written alternatives which must be approved by the plant safety review committee.

Response: Deviations from established load paths will be reviewed and approved by a qualified reviewer as with station procedures

6. Problem: No information has been provided to determine compliance with Guideline 2, NUREG-0612, Section 5.1.1.(2) for cranes in the Reactor Building.

Response: Duke Power will implement procedures by May 1, 1983 which comply with Guideline 2, NUREG-0612, Section 5.1.1.(2) for cranes in the Reactor Building.

7. Problem: Insufficient information has been provided to evaluate compliance with Guideline 4, NUREG-0612, Section 5.1.1.(4) concerning special lifting devices.

Response: Duke has requested manufacturers of special lifting devices to provide information for an evaluation of compliance with Guideline 4, NUREG-0612, Section 5.1.1.(4). When this information is received, Duke will perform the evaluation and notify NRC of the results.

8. Problem: (1) Sling selection is not based upon the sum of the static and maximum dynamic loads.

(2) Slings are not marked with the equivalent static load that produces the maximum static and dynamic loads.

(3) Slings restricted in use to only certain cranes have not been clearly marked to so indicate.

Response: No hoists at McGuire are capable of speeds greater than 30 fpm. In addition, lifts over the reactor vessel and spent fuel normally are performed at much slower speeds. Therefore, dynamic loads are small relative to the static loads. Since all slings are manufactured per ANSIB 30.9 with a safety factor of 5, the dynamic loads are of insignificant concern relative to sling integrity. No slings have been restricted in use to only certain cranes.

9. Problem: Ice Condenser bridge cranes were designed according to the specifications of EOCI-61 instead of CMAA-70. Differences between these standards should be addressed to verify that CMAA-70 requirements are satisfied or provide suitable justification for concluding that the requirements have been satisfied by equivalent means.

Response: Duke's earlier submittal identified the ice condenser bridge crane as a top running bridge, multiple girder, electric overhead traveling crane. The crane has been replaced with four separate underhung, single girder bridge cranes. Specification CMAA-70 applies to top running bridge, multiple girder, electric overhead traveling cranes. Since the ice condenser bridge cranes are underhung, CMAA-70 does not apply to the design of these cranes.

10. Problem: The Licensee has made no statements or conclusions regarding compliance with Interim Protection Measure 1.

Response: McGuire Unit 1 Technical Specification 3.9.7 is comparable to STS 3.9.7 and meets the requirements of Interim Protection Measure 1.

11. Problem: The Licensee has made no statements or conclusions regarding Interim Protection Measure 6.

Response: The special review required by Interim Protection Measure 6 has been completed and appropriate changes to procedures, training, etc. have been made.

Attachment 2

DUKE POWER COMPANY  
MCGUIRE NUCLEAR STATION  
SPENT FUEL POOLS  
NUREG 0612



## Introduction

The information presented in this report is the result of a detailed evaluation of load handling operations in the Spent Fuel Pools at McGuire 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 addresses the requirements set forth in Section 2.2 of Enclosure 3 to the NRC's letter as they pertain to the Spent Fuel Pools at the McGuire Nuclear Station.

## Cranes Considered

The cranes considered in this review are listed below:

A107a, A107b, A107c  
A108a, A108b  
A110a, A110b, A110c  
A111a, A111b

Information on these cranes can be found in Table II of the previous report sent to the NRC titled, "McGuire Nuclear Station, Auxiliary Building, Spent Fuel Pool Area, Control of Heavy Loads, (NUREG 0612)."

## Load Drops

There will be two "Load Drops" considered for this evaluation which will encompass all other possible load drop accidents. These two "Load Drops" are, 1) Cask Drop Evaluation and 2) Weir Gate Drop Analysis.

### 1) Cask Drop Evaluation

An evaluation has been performed to assess the possibility of a spent fuel transfer cask entering the spent fuel pool. This evaluation included analysis of the following three truck casks which are currently regarded as potential candidates for spent fuel transfer intrastation or between McGuire Nuclear Station and Oconee Nuclear Station:

- a. Model No. NFS-4, Nuclear Fuel Services, Inc.
- b. Model No. NLI-1/2, National Lead Company
- c. Model No. TN-8, Transnuclear, Inc.

No special equipment is required to handle the Oconee spent fuel cask since cask hoisting equipment at McGuire is similar to Oconee.

The area in which the cask is handled is designed for a 30 foot drop of a proposed 100 ton rail cask and the structure is reinforced concrete with a rock foundation. The cask handling crane stops are located in a position to prevent the cask from being moved into the fuel pool area. The cask area is separated from the spent fuel pool by a three foot reinforced concrete wall. Local damage to the concrete will be negligible and no safety related equipment is located in the cask travel path.

A description of the analysis and the results of the analysis for the NFS-4 truck cask is given below and in Figure 9.1.2-1A. The analyses of the NL1- 1/2 and TN-8 truck casks are similar to that of the NFS-4 cask and all show that the respective casks will not enter the spent fuel pool. In order to provide additional assurance that the cask will not fall into the spent fuel pool, the path of the cask will be controlled by application of administrative control as shown in Figure 9.1.2-1B. By requiring the cask to follow either of these paths, the circumstances of Case #3 cannot occur and any potential for the cask falling into the spent fuel pool is negated.

Case #1 - The cask handling crane is assumed to be traveling at its maximum speed of 50 fpm and hits the crane stops nearest the spent fuel pool. The crane stops, and the cask is assumed to continue traveling toward the spent fuel pool rotating about a line through the centerline of the crane drum. The cask continues to swing until the kinetic energy is completely converted to potential energy (i.e. the cask raises up as it rotates about the crane drum). At the instant the cask swings as close to the spent fuel pool as possible, the cable breaks and the cask falls. The conclusion is that the cask falls on the edge of the spent fuel pool wall and falls away from the spent fuel pool due to its center of gravity being behind the wall. See Figure 9.1.2-1A (1 of 3) for an illustration of this case.

Case #2 - The cask handling crane is assumed to be traveling at its maximum speed of 50 fpm and hits the crane stops nearest the spent fuel pool. The crane stops and the cable breaks at the same instant, therefore the cask does not swing but is moving at 50 fpm. The cask is assumed to be at its highest position, which is approximately 4 feet off the floor. The distance the cask travels at 50 fpm in the time it takes for the cask to fall 4 feet is determined and it is concluded that the cask will not hit the spent fuel pool wall but will fall directly into the cask pit. See Figure 9.1.2-1A (2 of 3) for an illustration of this case.

Case #3 - The cask is assumed to be over the edge of the cask pit wall and the cable breaks. The cask either drops on the edge of the wall or the cask is lowered on to the edge of the wall. Either case gives the same initial conditions because in the event of a drop the kinetic energy is assumed to be absorbed by the cask's bottom energy absorber, as stated in the Safety Analysis Report for the cask. Therefore, the cask's potential energy will cause the cask to tip toward the spent fuel pool wall. Energy losses at impact with the spent fuel pool wall are conservatively considered and the results of the analysis show that the remaining energy is not sufficient to cause the cask to fall into the spent fuel pool. See Figure 9.1.2-1A (3 of 3) for an illustration of this case.

## 2) Weir Gate Drop Analysis

The heaviest objects moved over the Spent Fuel Pool are the two spent fuel pool weir gates. Analysis of the dropping of either one of the two weir gates in the McGuire Spent Fuel Pool shows that some fuel assembly damage could occur. However, the site boundary dose rates for the most severe cases are well within the limits set forth in 10CFR100. These dose rates are presented in Table 15.5-5.

Movement of the weir gate located at the transfer canal (3700 lbs) is not possible without suspending it momentarily above from two to eight spent fuel storage locations. The weir gate at the fuel cask decontamination pit (4200 lbs) is not suspended over the spent fuel pool but does move in very close proximity to it. However, each of these gates is supported by two separate cables, either of which is capable of supporting the entire load should the other break. The gates are seldom moved near the spent fuel locations and then only for brief periods of time.

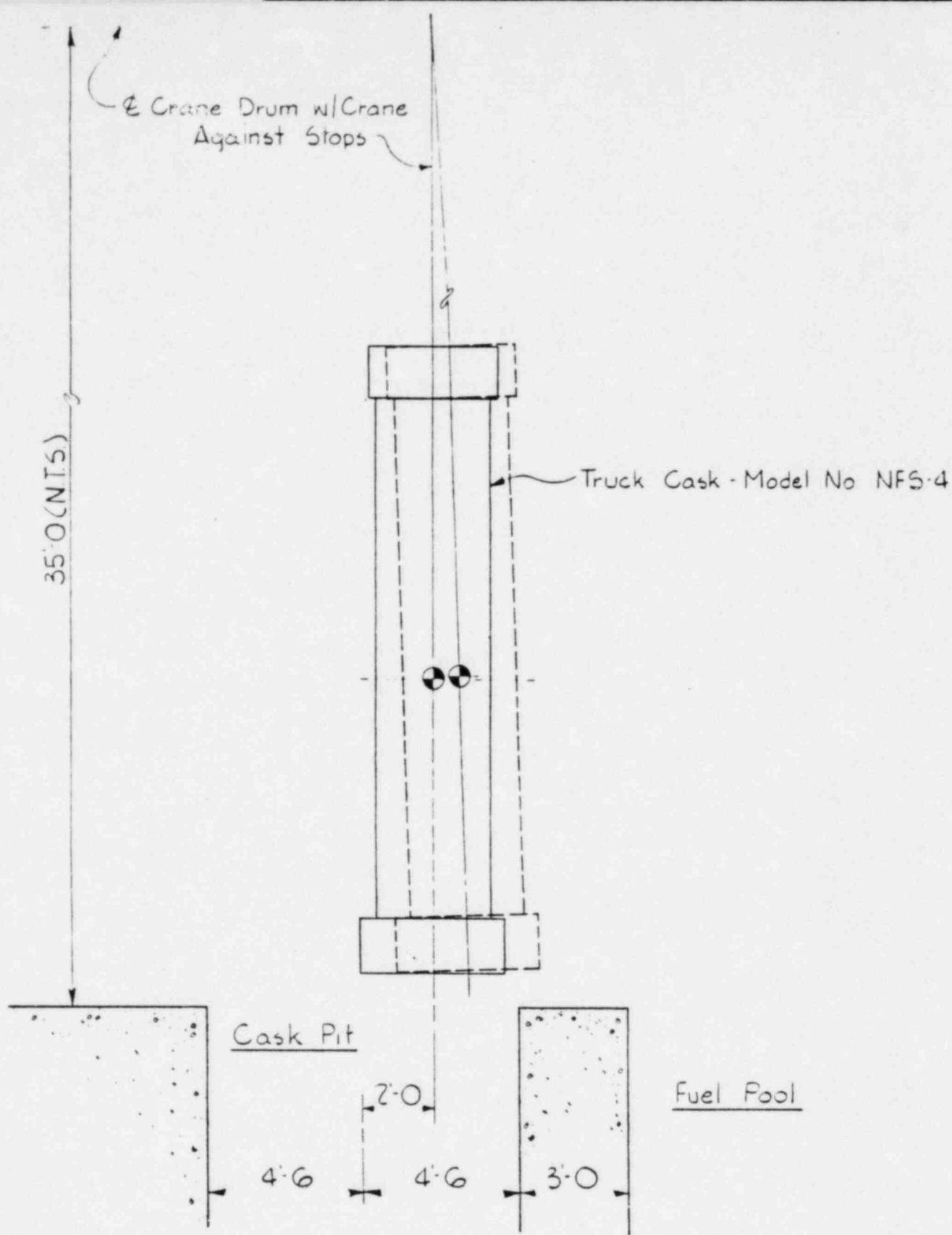
Dose calculations were performed using the methods and requirements of Regulatory Guides 1.25 and 1.109. The release assumptions for these dose calculations are identical to those in Table 15.5-11 except in the weir gate drop analysis the spent fuel pool building filters are available. (See Table 15.5-1, E.9)

The Weir gate drop analysis considers two limiting cases. The first case assumes that freshly discharged McGuire fuel assemblies are stored in the pool areas over which the weir gates would be handled. These fuel assemblies will have decayed for 7 days prior to their placement in the pool. A structural analysis of the drop incident indicates that a maximum of 7 McGuire assemblies would be damaged due to storage rack deformation. All fuel rods in each damaged assembly are assumed to be breached and to release all of the gap activity. This incident results in a two-hour exclusion area boundary dose of 7.8 rem whole body and 200 rem to the thyroid.

For the second case it is assumed that only Ocone fuel assemblies are stored in the affected areas of the spent fuel pool. The number of assemblies damaged for this case is expected to be much greater because the Ocone assemblies protrude above the tops of the pool storage racks. Therefore, all assemblies which could be contacted upon a weir gate drop are assumed to be severely damaged. Analysis shows that 78 Ocone assemblies would be contacted by the dropped gate. Using the same methods and assumptions stated above, the whole body dose is 4.1 rem. The thyroid dose is negligible. Although the number of assemblies damaged in the second case is much greater the consequences are much less severe because of the 270 day decay time for the Ocone fuel.

#### CONCLUSION

McGuire Nuclear Station is in full compliance to Section 2.2 of Enclosure 3. All information requested under Section 2.2 for the Spent Fuel Pools is included in this report.



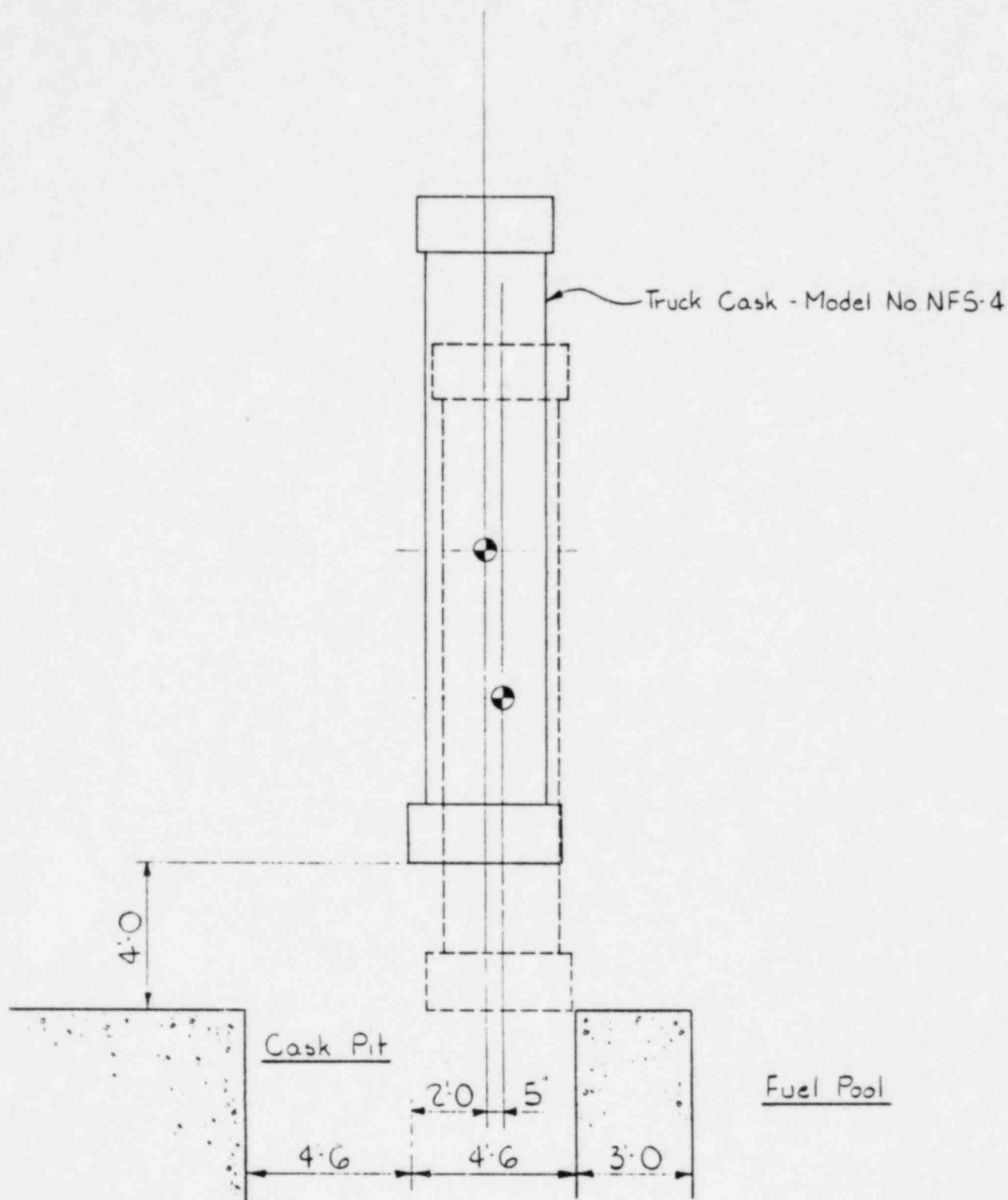
CASK DROP EVALUATION



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Figure 9.1.2-1A (1 of 3)

Revision 38

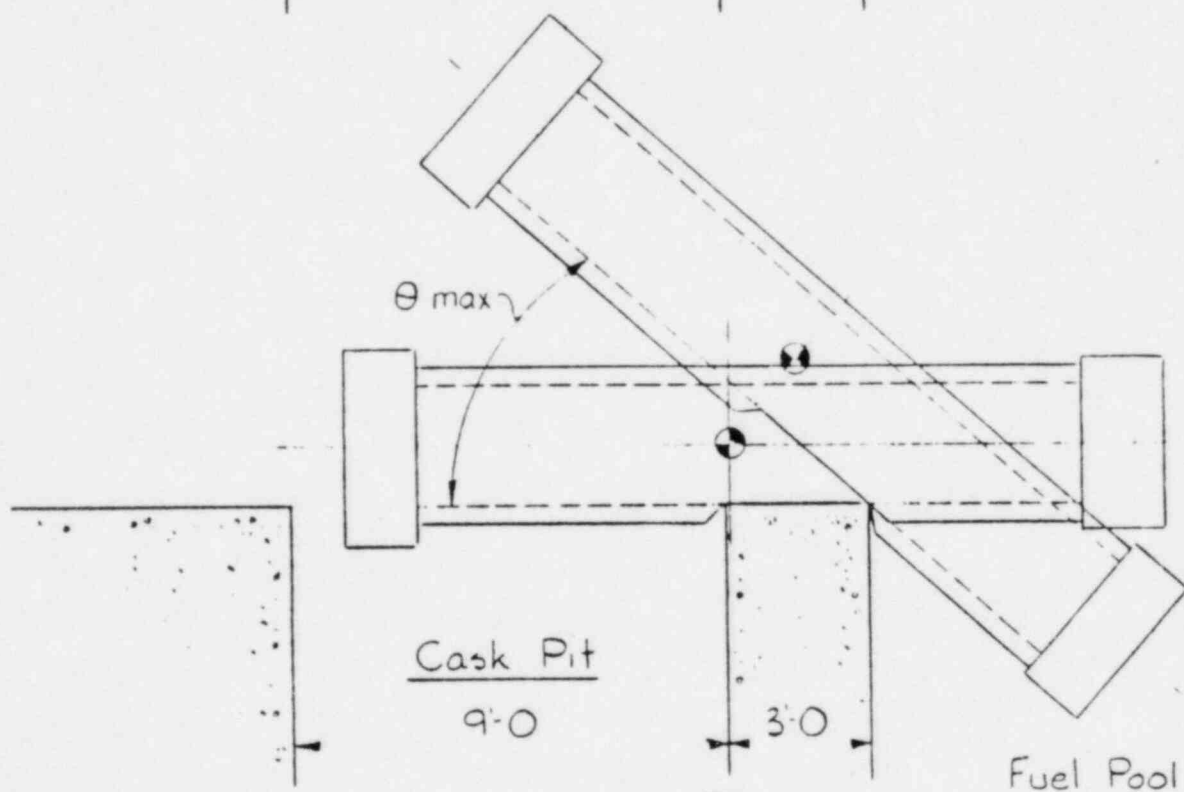
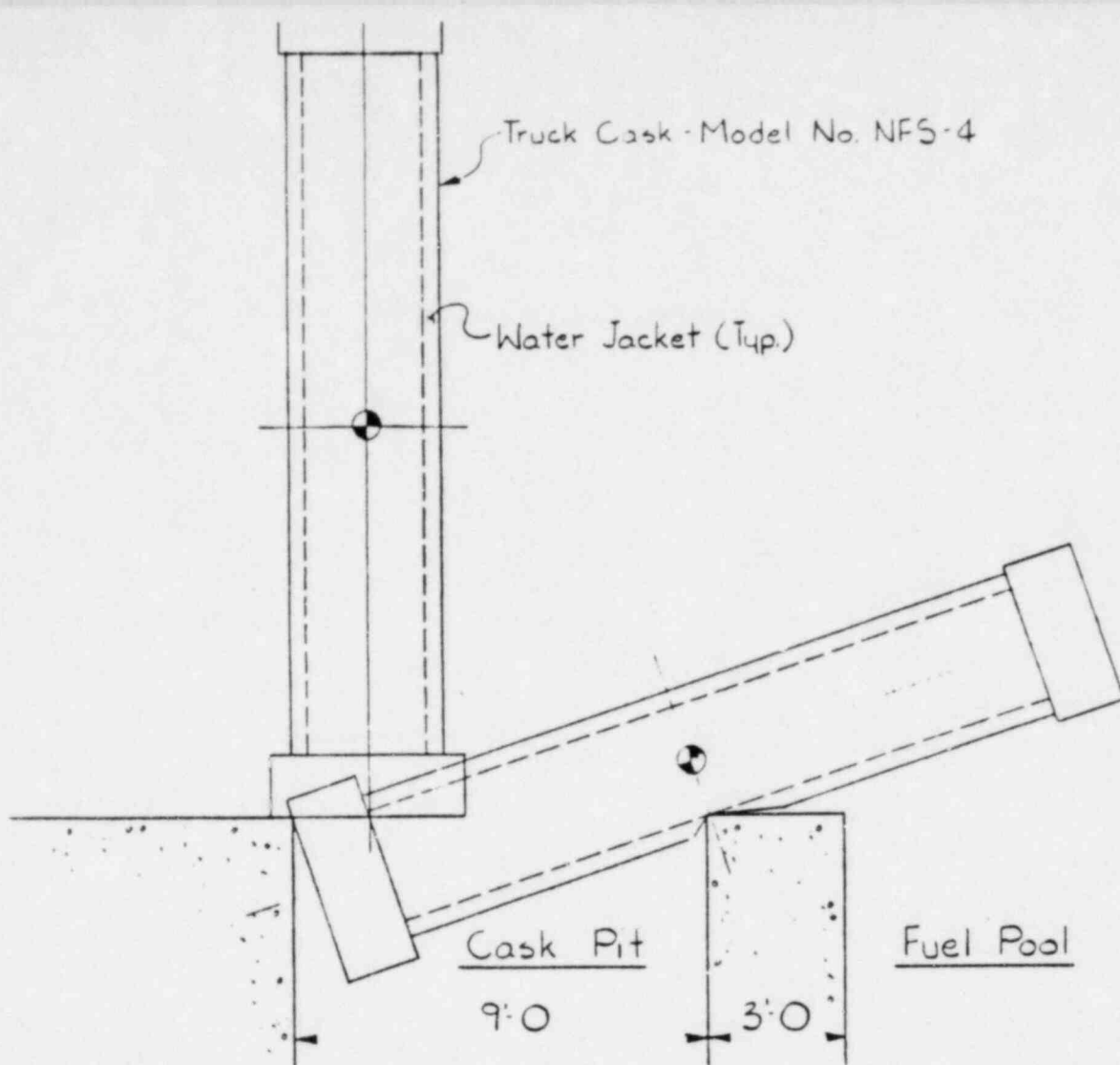


CASK DROP EVALUATION



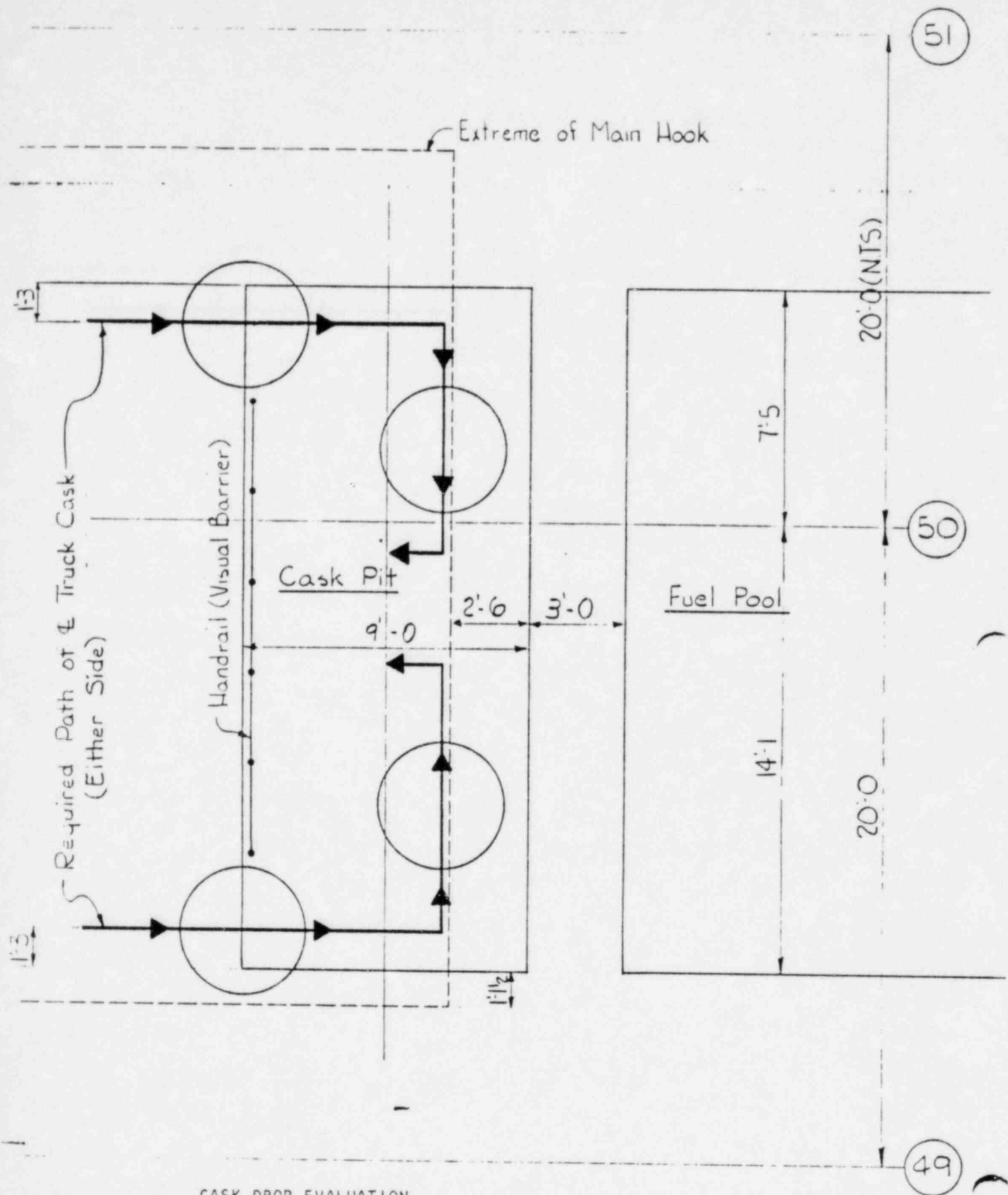
McGUIRE NUCLEAR STATION

Figure 9.1.2-1A (2 of 3)  
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CASK DROP EVALUATION  
McGUIRE NUCLEAR STATION

Figure 9.1.2-1A (3 of 3)  
Revision 38



CASK DROP EVALUATION  
McGUIRE NUCLEAR STATION

Figure 9.1.2-1B  
Revision 38



Table 15.5-5

Calculated Offsite Doses for Design Basis Accidents

## Conservative Estimates

Accident	2-hr Dose at 2500 ft. Exclusion Radius (REM)		30 day Dose at 29000 ft. Low Population Zone (REM)		
	Whole Body	Thyroid	Whole Body	Thyroid	
Steam Generator Tube Rupture	$2.8 \times 10^{-1}$	4.1	$2.5 \times 10^{-2}$	$4.2 \times 10^{-1}$	
Full Load Rejection Main Steam Release	$2.4 \times 10^{-3}$	$1.4 \times 10^{-1}$	$8.5 \times 10^{-4}$	$8.0 \times 10^{-2}$	
Waste Gas Decay Tank Rupture	0.5	---	$4.4 \times 10^{-2}$	---	
Liquid Storage Tank Rupture	2.0	4.9	$1.8 \times 10^{-1}$	$4.4 \times 10^{-1}$	
Rupture of Major Steam Line	$2.5 \times 10^{-3}$	$3.2 \times 10^{-1}$	$8.7 \times 10^{-4}$	$9.2 \times 10^{-2}$	
Design Basis Loss of Coolant					
No ECCS Leakage	2.9	$1.5 \times 10^{+2}$	$6.1 \times 10^{-1}$	$5.7 \times 10^{+1}$	Q 310.18
With ECCS Leakage	3.0	$2.0 \times 10^{+2}$	$6.2 \times 10^{-1}$	$6.5 \times 10^{+1}$	
Fuel Handling Accident In The Fuel Building - Fuel Assembly Drop	1.1	$5.1 \times 10^{+1}$	$9.6 \times 10^{-2}$	4.6	
Rod Ejection Accident	$5.1 \times 10^{-2}$	7.3	$1.0 \times 10^{-2}$	2.4	

Calculated Offsite Doses for Design Basis Accidents

## Conservative Estimates

Accident	2-Hr Dose at 2500 ft. Exclusion Radius (REM)		30 day Dose at 29000 ft. Low Population Zone (REM)	
	Whole Body	Thyroid	Whole Body	Thyroid
Tornado Missile Impact on Spent Fuel Pool	$7.5 \times 10^{-1}$	$2.7 \times 10^{+2}$	----	----- Q20.19
Lower Containment Pressure Relief LOCA-Dose Additions	$2.3 \times 10^{-3}$	2.9	$2.1 \times 10^{-4}$	$2.6 \times 10^{-1}$
Fuel Handling Accident Inside Containment	1.1	$5.1 \times 10^{+1}$	$9.6 \times 10^{-2}$	4.6
Fuel Handling Accident in the Fuel Building - Weir Gate Drop				
Case 1	3.5	$2.0 \times 10^{+2}$	----	-----
Case 2	$5.5 \times 10^{-2}$	----	----	-----

Parameters Used to Evaluate Tornado Missile Impact On Spent Fuel

13	METEOROLOGY	See Table 2.3.4-2
	Atmospheric dilution for tornado conditions.	
40	SPENT FUEL RADIOACTIVITY INVENTORY BASES	
	•Fuel Assembly Inventory:	
	Conservative case maximum assembly inventory	See Table 15.5-3
	Peaking factor applied to 1 assembly	1.65 (a)
	Peaking factor applied to the remainder of the spent fuel assemblies in the fuel pool	1.30
	•Decay Period	7 days
	•Gas Gap Fractions:	
	for Kr 85	0.3 (b)
	for other Noble Gases and Iodines	0.1
13	RADIOACTIVITY RELEASE BASES	
	•Number of Fuel Assemblies Damaged	See Subdivision 9.1.2
	•Release Quantity	
	The entire gap radioactivity inventory contained in each of the damaged assemblies	
	•Spent Fuel Pool Water Iodine Removal	
	The pool iodine decontamination factor is	100 (b)
	•Ventilation System Charcoal Filter Iodine Removal	None
	DOSE BASES	
	•Receptor Breathing Rate	$3.47 \times 10^{-4} \text{ m}^3/\text{sec}$ (b)

Parameters Used to Evaluate Tornado Missile Impact on Spent Fuel

NOTES

(a) Peaking Factors

1.65 Is from Regulatory Guide 1.25

1.30 is an assumed value which is higher than that anticipated from normal operation power densities (see Figures 4.3.2-6 through 4.3.2-11).

(b) Gas Gap Fractions, Spent Fuel Pool Iodine DF and Dose Receptor Breathing Rate are taken from Regulatory Guide 1.25.

Table 15.5-1

(Page 3 of 7)

Assumptions for Accident Release CalculationsCONSERVATIVEREALISTIC

- 4) Iodine partition factors is 0.1.      4) Same

## E. FUEL HANDLING ACCIDENT

- |   |  |
|---|--|
| 1) 72 hours decay prior to handling is assumed.   | 1) 168 hours decay prior to handling is assumed.   |
| 2) Maximum fuel rod pressurization is 1200 psig.  | 2) Same  |
| 3) Maximum water depth between fuel rod and fuel pool surface is 23 feet.   | 3) Same  |
| 4) All gap activity in the damaged rods is released and consists of:<br>a) 10 percent of all noble gases and iodines except Kr85<br>b) 30 percent of Kr85<br><br>Assembly activity appears in Table 15.5-3. | 4) All gap activity in an outside row of fuel pins is released. Assembly activities are listed in Table 15.5-3. Gas gap fractions appear in ER Table 7.1.1-3.<br><br>5) Same |
| 5) Full power operation is assumed prior to shutdown.   | 6) Same  |
| 6) Iodine gap inventory is 99.75 percent inorganic and 0.25 organic.  |  |

Assumptions for Accident Release Calculations

		<u>CONSERVATIVE</u>	<u>REALISTIC</u>
4		7) Pool decontamination factor is 133 for inorganic iodine and 1 for organic iodine. All noble gases released from the fuel escape from the pool.	7) Pool decontamination factor of 500 is assumed for iodine.
		8) All radioactive material that escapes from the pool is released from the building over a two hour period.	8) Same
		9) Charcoal filter removal efficiency is 90 percent for inorganic iodines and 70 percent for organic iodines.	9) Charcoal filter removal efficiency is 99 percent for all iodines.
1	F. MAJOR REACTOR COOLANT SYSTEM PIPE RUPTURE	1) Twenty five percent of the full power equilibrium iodine in the core is immediately available for leakage to the Containment. Four percent of this is organic.	1) Two percent of the full power equilibrium iodine in the core is available for leakage to the Containment.
1		2) One hundred percent of the full power equilibrium noble gas in the core is immediately available for leakage to the Containment.	2) Two percent of the full power equilibrium noble gases in the core is available for leakage to the Containment.
1		3) The leak rate from Containment to annulus is 0.2 percent per day for the first day and 0.1 percent per day thereafter.	3) The leak rate from Containment to the annulus is 0.05 percent per day for the first day and 0.025 percent per day thereafter.

Attachment 3

DUKE POWER COMPANY  
MCGUIRE NUCLEAR STATION  
AUXILIARY BUILDINGS  
NUREG 0612



## Introduction

The information presented in this report is the result of a detailed evaluation of load handling systems as 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 addresses specific requirements set forth in Section 2.4 of Enclosure 3 to the NRC's letter as they pertain to the Auxiliary Buildings at McGuire Nuclear Station.

## Crane/Load Combinations Considered

The crane/load combinations considered in this review are listed in Table 11 of our previous report to the NRC titled "McGuire Nuclear Station, Auxiliary Building, Spent Fuel Pool Area, 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. The results of this evaluation are found in the "Load/Impact Area Matrix, Auxiliary Building" table and its attachment which is included in this report.

## Impact Areas & Zones

The "Approximate Uppermost Impact Area" given in the tables represent the load drop areas for the various cranes and hoists as shown on marked prints attached to Duke Power's previous submittals to the NRC. The range of elevations given in the tables under "Elevation of Equipment", depict load drop zones defined as a range of elevations in the load drop areas which a load drop from a crane would affect. If no range of elevations are given, then the elevation given symbolizes a load drop zone between it and the maximum height a load is lifted or between it and the next highest elevation given.

## Results

All vital systems and components were reviewed to determine the effects of a load drop assumed to occur anywhere in the load drop areas and zones. The results of this review are noted in the Hazard Elimination Category column of the attached tables.

## Conclusion

After careful evaluation of all possible load/target combinations, it has been concluded that heavy load handling operations in the Auxiliary Buildings will have no effects on vital systems.

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Diesel Generator Access Bridge Crane - A102

Capacity: 2 Ton

General Arrangement Drawing No: MC 1203-2-A

Approximate Uppermost Impact Area: BBa, 43 - El. 754 + 0 (Bottom of Beam El. )

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Misc. Diesel Generator Parts - < 4000 lbs.	Diesel Generator	736 + 6	(1)

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Diesel Generator Access Bridge Crane - A103

Capacity: 2 Ton

General Arrangement Drawing No: MC 1203-2-A

Approximate Uppermost Impact Area: BBa, 43 - El. 754 + 0 (Bottom of Beam El. )

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Misc. Diesel Generator Parts - < 4000 lbs.	Diesel Generator	736 + 6	(1)

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Diesel Generator Access Bridge Crane - A104

Capacity: 2 Ton

General Arrangement Drawing No: MC 1203-4-A

Approximate Uppermost Impact Area: BBa, 70 - El. 754 + 0 (Bottom of Beam El. )

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Misc. Diesel Generator Parts - < 4000 lbs.	Diesel Generator	736 + 6	(1)

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Diesel Generator Access Bridge Crane - A105

Capacity: 2 Ton

General Arrangement Drawing No: MC 1203-4-A

Approximate Uppermost Impact Area: BBa, 70 - El. 754 + 0 (Bottom of Beam El. )

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Misc. Diesel Generator Parts - < 4000 lbs.	Diesel Generator	736 + 6	(i)

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Dog House Misc. Valves & Piping Monorail - A124

Capacity: 2 Ton

General Arrangement Drawing No: MC 1041-18

Approximate Uppermost Impact Area: FF, 60 - El. 803' + 2½" (Bottom of Beam El. )

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Misc. Valves & Piping - < 4000 lbs.	Mech./Nuclear Equip.	803 + 2½ to 750 + 0	
	1) SM System to Steam Generator 2B & 2C		(3) & (4)
	2) CA System to Steam Generator 2B		(3) & (4)
	Elec. Equip.	803 + 2½ to 750 + 0	(4)c
	Mech./Nuclear & Elec. Equip.	< 750 + 0	(4)b

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Dog House Misc. Valves & Piping Monorail - A122

Capacity: 2 Ton

General Arrangement Drawing No: MC 1041-18

Approximate Uppermost Impact Area: FF, 69 - El. 803' + 4" (Bottom of Beam El. )

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Misc. Valves & Piping - <4000 lbs.	Mech./Nuclear Equip.	803 + 4 to 750 + 0	
	1) CA System to 2A Auxiliary Feedwater		(3) & (4)
	2) SM System to Steam Generator 2A & 2D		(3) & (4)
	Elec. Equip.	803 + 4 to 750 + 0	(4)c
	Mech./Nuclear & Elec. Equip.	<750 + 0	(4)b

\* Equipment required for plant safe-shutdown and/or decay heat removal



LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Dog House Misc. Valves & Piping Monorail - A113

Capacity: 2 Ton

General Arrangement Drawing No: MC 1041-6 & MC 1041-11.4

Approximate Uppermost Impact Area: FF, 44 - El. 803' + 4' (Bottom of Beam El. )

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Misc. Valves & Piping - <4000 lbs.	Mech./Nuclear Equip 1) SM System to Steam Generator ID	803 + 4 to 750 + 0	(3) & (4)
	Elec. Equip.	803 + 4 to 750 + 0	(4)c
	Mech./Nuclear & Elec. Equip.	< 750 + 0	(4)b

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Dog House Misc. Valves & Piping Monorail - A115

Capacity: 2 Ton

General Arrangement Drawing No: MC 1041-6

Approximate Uppermost Impact Area: FF, 52 - El. 803' + 2 $\frac{1}{2}$ " (Bottom of Beam El. )

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Misc. Valves & Piping - < 4000 lbs.	Mech./Nuclear Equip.	803 + 4 to 750 + 0	(3) & (4)
	1) SM System to Steam Generator ID		
	Elec. Equip.	803 + 4 to 750 + 0	(4)c
	Mech./Nuclear & Elec. Equip.	< 750 + 0	(4)b

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Main Steam Isolation Valve Monorail - A127

Capacity:  $7\frac{1}{2}$  Ton

General Arrangement Drawing No: MC 1041-18

Approximate Uppermost Impact Area: DD, 59 - El. 817' + 0" (Bottom of Beam El. )

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Main Steam Isolation Valve Operating Mechanism - 6220 lbs.	Hech./Nuclear Equip.	817 + 0 to 750 + 0	(4)d
	1) SM System to Steam Generator 2B		
	2) CA System to Steam Generator 2C		(4)d
	Elec. Equip	817 + 0 to 750 + 0	(4)c
	Mech/Nuclear & Elec. Equip.	< 750 + 0	(4)b

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Dog House Misc. Valves & Piping Monorail - A123

Capacity: 2 Ton

General Arrangement Drawing No: MC 1041-18

Approximate Uppermost Impact Area: FF, 59 - El. 814' + 0" (Bottom of Beam El. )

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Misc. Valves & Piping - < 4000 lbs.	Mech./Nuclear Equip.	817 + 0 to 750 + 0	(4)d
	1) SM System to Steam Generator 2B		
	2) CA System to Steam Generator 2C		(4)d
	Elec. Equip.	817 + 0 to 750 + 0	(4)c
	Mech/Nuclear & Elec. Equip.	< 750 + 0	(4)b

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Main Steam Isolation Valve Monorail - A116

Capacity:  $7\frac{1}{2}$  Ton

General Arrangement Drawing No: MC 1041-6 & MC 1041-11.4

Approximate Uppermost Impact Area: DD,44-El. 817' + 0" (Bottom of Beam El. )

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Main Steam Isolation Valve Operating Mechanism - 6220 lbs.	Mech./Nuclear Equip: 1) CA & SM Systems to Steam Generator 1D	817 + 0 to 750 + 0	(4)d
	Elec. Equip.	817 + 0 to 750 + 0	(4)c
	Mech./Nuclear & Elec. Equip.	<750 + 0	(4)b

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Main Steam Isolation Valve Monorail - A119

Capacity:  $7\frac{1}{2}$  Ton

General Arrangement Drawing No: MC 1041-6

Approximate Uppermost Impact Area: EE, 52- EI. 817' + 0" (Bottom of Beam EI.)

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Main Steam Isolation Valve Operating Mechanism - 6220 lbs.	Mech./Nuclear Equip. 1) CA & SM Systems to Steam Generator ID	817 + 0 to 750 + 0	(4)d
	Elec. Equip.	817 + 0 to 750 + 0	(4)c
	Mech./Nuclear & Elec. Equip.	< 750 + 0	(4)b

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Misc. Dog House Equip. Mono-rail - A131

Capacity:  $7\frac{1}{2}$  Ton

General Arrangement Drawing No: MC 1041-11.4 & MC 1040-7

Approximate Uppermost Impact Area: DD, 43-El. 804 + 2 (Bottom of Beam El. )

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Misc. Dog House Equip. - <15,000 lbs.	Mech./Nuclear: 1) Main Steam Line- downstream of isolation valve.	804 + 2 to 784 + 0	(4) d
	Elect. Equip.	804 + 2 to 784 + 0	(4) a
	Mech./Nuclear & Elect. Equip.	< 784 + 0	(4) b

\* Equipment required for plant safe-shutdown and/or decay heat removal



LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Misc. Dog House Equip. Monorail - A120

Capacity: 7½ Ton

General Arrangement Drawing No: MC 1040-7

Approximate Uppermost Impact Area: DD, 53 - El. 804' + 2" (Bottom of Beam El.)

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Misc. Dog House Equip. - < 15,000 lbs.	Mech./Nuclear: 1) Main Steam Line- downstream of Isolation valve.	804 + 2 to 784 + 0	(4) d
	Elec. Equip.	804 + 2 to 784 + 0	(4) a
	Mech./Nuclear & Elec. Equip.	< 784 + 0	(4) b

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Misc. Dog House Equip. Monorail - A129

Capacity:  $7\frac{1}{2}$  Ton

General Arrangement Drawing No: MC 1040-7

Approximate Uppermost Impact Area: DD, 59 - El. 804' + 2" (Bottom of Beam El. )

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Misc. Dog House Equip. - < 15,000 lbs.	Mech./Nuclear: 1) Main Steam Line- downstream of isolation valve.	804 + 2 to 784 + 0	(4)d
	Elec. Equip.	804 + 2 to 784 + 0	(4)a
	Mech./Nuclear & Elec. Equip.	< 784 + 0	(4)b

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Misc. Dog House Equip. Monorail - A132

Capacity:  $7\frac{1}{2}$  Ton

General Arrangement Drawing No: MC 1040-7

Approximate Uppermost Impact Area: DD, 69 - El. 804' + 2" (Bottom of Beam El. )

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Misc. Dog House Equip. <15,000 lbs.	Mech./Nuclear: 1) Main Steam Line downstream of isolation valve.	804 + 2 to 784 + 0	(4)d
	Elec. Equip.	804 + 2 to 784 + 0	(4)a
	Mech./Nuclear & Elec. Equip.	< 784 + 0	(4)b

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Dog House Misc. Valves & Piping Monorail - A112

Capacity: 2 Ton

General Arrangement Drawing No: MC 1041-6 & MC 1041-11.4

Approximate Uppermost Impact Area: FF, 43 - El. 803' + 4" ( Bottom of Beam El. )

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Misc. Valves & Piping - < 4000 lbs.	Mech./Nuclear Equip 1) CA, SM, and SV Systems	803 + 4 to 750 + 0	(4) d
	Elec. Equip.	803 + 4 to 750 + 0	(4) c
	Mech./Nuclear & Elec. Equip.	< 750 + 0	(4) b

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Main Steam Isolation Valve Monorail -A117

Capacity:  $7\frac{1}{2}$  Ton

General Arrangement Drawing No: MC 1041-6 & MC 1041-11.4

Approximate Uppermost Impact Area: DD, 43-El. 817' + 0" (Bottom of Beam El. )

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Main Steam Isolation Valve Operating Mechanism - 6220 lbs.	Mech./Nuclear Equip. 1) CA, SM and SV Systems	803 + 4 to 750 + 0	(4)d
	Elec. Equip.	803 + 4 to 750 + 0	(4)c
	Mech./Nuclear & Elec. Equip.	< 750 + 0	(4)b

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Dog House Equip. Jib Crane - A136

Capacity: 2 Ton

General Arrangement Drawing No: MC 1040-7

Approximate Uppermost Impact Area: GG,43-El. 831 + 0 (Bottom of Beam El. )

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Misc. Dog House Equip.- <4000 lbs. Main Steam Oper. Rel. Valve - 2600 lbs.	1) <u>Auxiliary Bldg.</u>		
	Mech./Nuclear Equip.	831 + 0 to 784 + 0	(4)a
	Elec. Equip.	831 + 0 to 784 + 0	(4)a
	Mech./Nuclear & Elec. Equip.	<784 + 0	(4)b
	2) <u>Dog House</u>		
	Mech./Nuclear & Elec. Equip.	831 + 0 to 821 + 0	(4)a
	Mech./Nuclear & Elec. Equip.	<821 + 0	(4)b

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Dog House Equip. Jib Crane - A137

Capacity: 2 Ton

General Arrangement Drawing No: MC 1040-7

Approximate Uppermost Impact Area: GG, 53 - El. 831 + 0 (Bottom of Beam El. )

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Misc. Dog House Equip. - <4000 lbs. Main Steam Oper. Rel. Valve - 2600 lbs.	1) <u>Auxiliary Bldg.</u> Mech./Nuclear equip.	831 + 0 to 784 + 0	(4)a
	Elec. Equip.	831 + 0 to 784 + 0	(4)a
	Mech./Nuclear & Elec. Equip.	< 784 + 0	(4)b
	2) <u>Dog House</u> Mech./Nuclear & Elec. Equip.	831 + 0 to 821 + 0	(4)a
	Mech./Nuclear & Elec. Equip.	< 821 + 0	(4)b

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Dog House Equip. Jib Crane - A138

Capacity: 2 Ton

General Arrangement Drawing No: MC 1040-7

Approximate Uppermost Impact Area: GG, 59 - El. 831' + 0" (Bottom of Beam El. )

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Misc. Dog House Equip. - <4000 lbs. Main Steam Oper. Rel. Valve - 2600 lbs.	1) <u>Auxiliary Bldg.</u> Mech./Nuclear Equip.	831 + 0 to 784 + 0	(4)a
	Elec. Equip.	831 + 0 to 784 + 0	(4)a
	Mech./Nuclear & Elec. Equip.	< 784 + 0	(4)b
	2) <u>Dog House</u> Mech./Nuclear & Elec. Equip.	831 + 0 to 821 + 0	(4)a
	Mech./Nuclear & Elec. Equip.	< 821 + 0	(4)b

\* Equipment required for plant safe-shutdown and/or decay heat removal



LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Dog House Equip. Monorail - A139

Capacity: 2 Ton

General Arrangement Drawing No: MC 1040-7

Approximate Uppermost Impact Area: GG, 69 - El. 831' + 0" (Bottom of Beam El. )

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Misc. Dog House Equip. - 4000 lbs. Main Steam Oper. Rel. Valve - 2600 lbs.	1) <u>Auxiliary Bldg.</u>		
	Mech./Nuclear Equip.	831 + 0 to 784 + 0	(4) a
	Elec. Equip.	831 + 0 to 784 + 0	(4) a
	Mech./Nuclear & Elec. Equip.	< 784 + 0	(4) b
	2) <u>Dog House</u>		
	Mech./Nuclear & Elec. Equip.	831 + 0 to 821 + 0	(4) a
	Mech./Nuclear & Elec. Equip.	< 821 + 0	(4) b

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Main Steam Isolation Valve Monorail - A126

Capacity:  $7\frac{1}{2}$  Ton

General Arrangement Drawing No: MC 1041-18

Approximate Uppermost Impact Area: EE, 69 - El. 817' + 0" (Bottom of Beam El. )

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Main Steam Isolation Valve Operating Mechanism - 6220 lbs.	Mech./Nuclear Equip	817 + 0 to 750 + 0	
	1) SM System to Steam Generator 2A		(4)d
	2) CA System to Steam Generator 2D		(4)d
	Elec. Equip.	817 + 0 to 750 + 0	(4)c
	Mech./Nuclear & Elec. Equip.	< 750 + 0	(4)b

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Dog House Misc. Valves & Piping Monorail - A121

Capacity: 2 Ton

General Arrangement Drawing No: MC 1041-18

Approximate Uppermost Impact Area: FF, 69 - El. 803' + 4" (Bottom of Beam El. )

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Misc. Valves & Piping - < 4000 lbs.	Mech./Nuclear Equip.	817 + 0 to 750 + 0	
	1) SM System to Steam Generator 2A		(4)d
	2) CA System to Steam Generator 2D		(4)d
	Elec. Equip.	817 + 0 to 750 + 0	(4)c
	Mech./Nuclear & Elec. Equip.	< 750 + 0	(4)b

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Main Steam Isolation Valve Monorail - A125

Capacity: 7½ Ton

General Arrangement Drawing No: MC 1041-18

Approximate Uppermost Impact Area: EE, 68 - El. 817' + 0" (Bottom of Beam El. )

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Main Steam Isolation Valve Operating Mechanism - 6220 lbs.	Mech./Nuclear Equip.	817 + 0 to 750 + 0	
	1) SM System to Steam Generator 2D.		(4) d
	2) CA System to Steam Generator 2A		(4) d
	Elec. Equip.	817 + 0 to 750 + 0	(4) c
	Mech./Nuclear & Elec. Equip.	< 750 + 0	(4) b

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Main Steam Isolation Valve Monorail - A128

Capacity: 7½ Ton

General Arrangement Drawing No: MC 1041-18

Approximate Uppermost Impact Area: DD, 60 - El. 817' + 0" (Bottom of Beam El. )

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Main Steam Isolation Valve Operating Mechanism - 6220 lbs.	Mech./Nuclear Equip.	817 + 0 to 750 + 0	
	1) SM System to Steam Generator 2C		(4)d
	2) CA System to Steam Generator 2B		(4)d
	Elec. Equip.	817 + 0 to 750 + 0	(4)c
	Mech./Nuclear & Elec. Equip.	<750 + 0	(4)b

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Main Steam Isolation Valve Monorail - A118

Capacity: 7½ Ton

General Arrangement Drawing No: MC 1041-6

Approximate Uppermost Impact Area: EE, 53 - El. 817' + 0" ( Bottom of Beam El. )

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Main Steam Isolation Valve Operating Mechanism - 6220 lbs.	Mech./Nuclear Equip.	817 + 0 to 750 + 0	
	1) SM System to Steam Generator 1B		(4)d
	2) CA System to Steam Generator 1C		(4)d
	Elec. Equip.	817 + 0 to 750 + 0	(4)c
	Mech./Nuclear & Elec. Equip.	< 750 + 0	(4)b

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Dog House Misc. Valves & Piping Monorail - A114

Capacity: 2 Ton

General Arrangement Drawing No: MC 1041-6

Approximate Uppermost Impact Area: FF, 53- El. 814' + 0" (Bottom of Beam El. )

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Misc. Valves & Piping - <4000 lbs.	Mech./Nuclear Equip	814 + 0 to 750 + 0	
	1) SM and SV Systems to Steam Generator IB.		(4) d
	2) CA System to Steam Generator IC		(4) d
	Elec. Equip.	814 + 0 to 750 + 0	(4) c
	Mech./Nuclear & Elec. Equip.	<750 + 0	(4) b

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Misc. Equip. Monorail - A095

Capacity: 5 Ton

General Arrangement Drawing No: MC 1202-5-A

Approximate Uppermost Impact Area: AA, 52 - El. 733 + 0

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Hatch Cover - 9100 lbs.	Mech./Nuclear Equip.	733 + 0	(4)a
Misc. Equip. - <10,000 lbs.	1) Steam supply to Auxiliary Feedwater Pump Turbine	716 + 0 at hatch opening on El. 733 + 0	(4)a
	Elec. Equip.	733 + 0	(4)a
		716 + 0 at hatch opening on El. 733 + 0	(4)a
	Mech./Nuclear & Elec. Equip.	<733 + 0 not at hatch opening.	(4)b

\* Equipment required for plant safe-shutdown and/or decay heat removal



LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Misc. Equipment Monorail - A096

Capacity: 5 Ton

General Arrangement Drawing No: MC 1202-5-A

Approximate Uppermost Impact Area: AA, 60 - El. 733 + 0

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Hatch Cover - 9100 lbs.	Mech./Nuclear Equip.	733 + 0	(4) a
Misc. Equip. - <10,000 lbs.	1) Steam supply to Auxiliary Feedwater Pump Turbine	716 + 0 at hatch opening on El. 733 + 0	(4) a
	Elec. Equip.	733 + 0	(4) a
		716 + 0 at hatch opening on El. 733 + 0	(4) a
	Mech./Nuclear & Elec. Equip.	< 733 + 0 not at hatch opening	(4) b

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Misc. Equip. Monorail - A077

Capacity: 2 Ton

General Arrangement Drawing No: MC 1205-2-A

Approximate Uppermost Impact Area: LL, 54 - El. 767 + 0

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Hatch Cover - 4300 lbs. Misc. Equip. - <4000 lbs.	Mech./Nuclear Equip	El. 767 + 0	(4) a
		El. 750 + 0 @ hatch from floor above	(4) a
	Elec. Equip.	El. 767 + 0	(4) a
		El. 750 + 0 @ hatch from floor above	(4) a
	Mech./Nuclear & Elec. Equip.	El. 750 + 0 not @ hatch from floor above	(4) b
		< 750 + 0	(4) b

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Misc. Equip. Monorail - A079  
Capacity: 3 Ton  
General Arrangement Drawing No: MC 1205-2-A  
Approximate Uppermost Impact Area: KK, 53 - El. 767 + 0

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Hatch Cover - 3800 lbs. Misc. Equip. - < 6000 lbs.	Mech./Nuclear Equip	767 + 0	(4) a
		750 + 0 @ hatch from floor above	(4) a
	Elec. Equip.	767 + 0	(4) a
		750 + 0 @ hatch from floor above	(4) a
	Mech./Nuclear & Elec. Equip.	750 + 0 not @ hatch from floor above	(4) b
		< 750 + 0	(4) b

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Misc. Equip. Monorail - A083

Capacity: 10 Ton

General Arrangement Drawing No: MC 1205-2-A

Approximate Uppermost Impact Area: PP, 52 - El. 767 + 0

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Hatch Cover - 4500 lbs. Misc. Equip. - <20,000 lbs.	Mech./Nuclear Equip.	767 + 0	(4)a
	KC and RN Systems	750 + 0 @ hatch from floor above	(4)a
	Elec. Equip.	767 + 0	(4)a
	Train A	750 + 0 @ hatch from floor above	(4)a
	Mech./Nuclear & Elec. Equip.	750 + 0 not @ hatch from from floor above	(4)b
		< 750 + 0	(4)b

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Misc. Equip. Monorail - A085

Capacity: 3 Ton

General Arrangement Drawing No: MC 1205-2-A

Approximate Uppermost Impact Area: GG, 54 - El. 767 + 0

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Hatch Cover - 3500 lbs.	Mech./Nuclear Equip		
Misc. Equip. - <6000 lbs.	A Train	57 + 0	(4)a
	A Train	50 + 0	(4)a
		733 + 0 @ hatch from floor above	(4)a
	Elec. Equip.	767 + 0	(4)a
		750 + 0	(4)a
	Heat Exchanger	733 + 0 @ hatch from floor above	(3)
	Mech./Nuclear & Elec. Equip.	733 + 0 not @ hatch from floor above	(4)b
		< 733 + 0	(4)b

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Duct Shaft Access Monorail - A086

Capacity: 2 Ton

General Arrangement Drawing No: MC 1205-2-A

Approximate Uppermost Impact Area: JJ, 53 - El. 767 + 0

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Equip. for Duct Shaft - < 4000 lbs. Mech./Nuclear Equip.		767 + 0	(4) a
		750 + 0	(4) a
	Elec. Equip.		
	A Train	767 + 0	(1)
	A Train	750 + 0	(1)
	Mech./Nuclear & Elec. Equip.	< 750 + 0	(4) b

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Misc. Equip. Monorail - A081

Capacity: 10 Ton

General Arrangement Drawing No: HC 1205-2-A

Approximate Uppermost Impact Area: JJ, 53 - El. 767 + 0

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Hatch Cover - 4000 lbs. Misc. Equip. - < 20,000 lbs.	Mech./Nuclear Equip.	767 + 0	(4) a
		750 + 0	(4) a
		733 + 0 @ hatch from floor above	(4) a
		716 + 0 @ hatch from floor above	(4) a
	Elec. Equip. A Train-NI System not present	767 + 0	(1)
		750 + 0	(4) a
		733 + 0 @ hatch from floor above	(4) a
		716 + 0 @ hatch from floor above	(1)
	Terminal Box 150 and cables to valves INI 115B, INI 334B, and INI 333B.		
	Mech./Nuclear & Elec. Equip.	< 750 + 0 not @ hatch from floor above	(4) b

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Misc. Equip. Jib Crane - A149

Capacity: 2 Ton

General Arrangement Drawing No: MC 1204-2-A

Approximate Uppermost Impact Area: N/A

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LOADS

SAFETY-RELATED\* EQUIPMENT

ELEVATION OF EQUIPMENT

HAZARD ELIMINATION CATEGORY

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NON-EXISTENT (Crane has been deleted)

\* Equipment required for plant safe-shutdown and/or decay heat removal



LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Misc. Equip. Monorail - A037

Capacity: 2 Ton

General Arrangement Drawing No: MC 1204-2-A

Approximate Uppermost Impact Area: HH, 52 - El. 750 + 0

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Hatch Cover - 4100 lbs.	Mech./Nuclear Equip.		
B B Filter & Seal Injection		750 + 0	(4)a
Filter Equip. - < 4000 lbs.	Seal Water Filter, Seal Inj. Filter A & B, and Steam Generator Filter A & B	733 + 0	(1)
	Elec. Equip.		
		750 + 0	(4)a
		733 + 0	(4)a
	Mech./Nuclear & Elec. Equip.	< 733 + 0	(4)b

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Misc. Equip. Jib Crane - A071

Capacity: 2 Ton

General Arrangement Drawing No: MC 1204-2-A

Approximate Uppermost Impact Area: KK, 55- El. 750 + 0

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Misc. Equip. - 4000 lbs.	Mech./Nuclear Equip.	750 + 0	(4)a
	BB Piping	733 + 0 @ hatch from floor above	(4)a
	Elec. Equip. A & B Train*	750 + 0 733 + 0 @ hatch from floor above	(1) (4)a
	Mech./Nuclear & Elec. Equip.	733 + 0 not @ hatch from floor above < 733 + 0	(4)b (4)b

\*Cable to the following  
valves:

INI 255B

INI 258A

IFW 49B

IFW 33A

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Misc. Equip. Monoaril - A034

Capacity: 5 Ton

General Arrangement Drawing No: MC 1204-2-A

Approximate Uppermost Impact Area: JJ, 54 - El. 750 + 0

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Hatch Cover - 9100 lbs.	Mech./Nuclear Equip.	750 + 0	(4)a
Misc. Equip. - <10,000 lbs.	KC Heat Exchanger 1A	733 + 0	(1)
	Electrical Equip.	750 + 0	(4)a
		733 + 0	(4)a
	Mech./Nuclear & Elec. Equip.	< 733 + 0	(4)b

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Filter Storage Access Monorail - A035

Capacity: 5 Ton

General Arrangement Drawing No: MC 1204-2-A

Approximate Uppermost Impact Area: MM, 53 - El. 750 + 0

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Filter Storage - <10,000 lbs.	Mech./Nuclear Equip.	750 + 0	(4)a
	KC Piping	733 + 0 @ hatch from floor above	(4)a
	Elec. Equip.	750 + 0	(4)a
		733 + 0 @ hatch from floor above	(4)a
	Mech./Nuclear & Elec. Equip.	733 + 0 not @ hatch from floor above	(4)b
		< 733 + 0	(4)b

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Misc. Equip. Monorail - A036

Capacity: 2 Ton

General Arrangement Drawing No: MC 1204-2-A

Approximate Uppermost Impact Area: KK, 52 - El. 750 + 0

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Hatch Cover - 4000 lbs. Misc. Equip. - < 4000 lbs.	Mech./Nuclear Equip.	750 + 0	(4)a
	NV Reactor Coolant Filter	733 + 0 @ hatch from floor above	(4)a
	Elec. Equip.	750 + 0	(4)a
		733 + 0 @ hatch from floor above	(4)a
	Mech./Nuclear & Elec. Equip.	733 + 0 not @ hatch from floor above	(4)b
		< 733 + 0	(4)b

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Misc. Equip. Monorail - A039

Capacity: 2 Ton

General Arrangement Drawing No: MC 1204-2-A

Approximate Uppermost Impact Area: NN, 56 - El. 750 + 0

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Hatch Cover - 3200 lbs. N C Evap. Filter Equip. - <4000 lbs.	Mech./Nuclear Equip.	750 + 0	(4)a
	Elec. Equip.	750 + 0	(4)a
	Mech./Nuclear & Elec. Equip.	< 750 + 0	(4)b

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane:       Demin. Access Monorail - A042

Capacity:   4 Ton

General Arrangement Drawing No:   MC 1204-2-A

Approximate Uppermost Impact Area:   MM, 54 - El. 750 + 0

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Hatch Cover - 6900 lbs.			
Misc. Demin. Equip. - <8000 lbs.	Mech./Nuclear Equip.	750 + 0	(4)a
		733 + 0 @ hatch from floor above	(4)a
	Elec. Equip.	750 + 0	(4)a
		733 + 0 @ hatch from floor above	(4)a
	Mech./Nuclear & Elec. Equip.	733 + 0 not @ hatch from floor above	(4)b
		< 733 + 0	(4)b

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Misc. Filter Access Monorail - A043

Capacity: 3 Ton

General Arrangement Drawing No: MC 1204-2-A

Approximate Uppermost Impact Area: MM, 55 - El. 750 + 0

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Hatch Cover - 4600 lbs. LHST Primary & Secondary Filter Equip. - < 6000 lbs.	Mech./Nuclear Equip.	750 + 0	(4)a
	WM Piping	733 + 0 @ hatch from floor above	(4)a
	Elec. Equip.	750 + 0	(4)a
		733 + 0 @ hatch from floor above	(4)a
	Mech./Nuclear & Elec. Equip.	733 + 0 not @ hatch from floor above	(4)b
		< 733 + 0	(4)b

\* Equipment required for plant safe-shutdown and/or decay heat removal



LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane:     Demin. Access Monorail - A044

Capacity: 4 Ton

General Arrangement Drawing No:   MC 1204-2-A

Approximate Uppermost Impact Area:   MM, 55 - El. 750 + 0

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Hatch Cover - 6900 lbs. Misc. Demin. Equip. - <8000 lbs.	Mech./Nuclear Equip.	750 + 0	(4) a
	NR Piping	733 + 0 @ hatch from floor above	(4) a
	Elec. Equip.	750 + 0	(4) a
		733 + 0 @ hatch from floor above	(4) a
	Mech./Nuclear & Elec. Equip.	733 + 0 not @ hatch from floor above	(4) b
		< 733 + 0	(4) b

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Access Hatch Monorail - A050

Capacity: 3 Ton

General Arrangement Drawing No: MC 1204-2-A

Approximate Uppermost Impact Area: MM, 52 - El. 750 + 0

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Hatch Cover - 4100 lbs. Resin Sluice Filter Equip. - <6000 lbs.	Mech./Nuclear Equip.	750 + 0	(4)a
	WS Piping	733 + 0 @ hatch from floor above	(4)a
	Elec. Equip.	750 + 0	(4)a
		733 + 0 @ hatch from floor above	(4)a
	Mech./Nuclear & Elec. Equip.	733 + 0 not @ hatch from floor above	(4)b
		< 733 + 0	(4)b

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Access Hatch Monorail - A053

Capacity: 3 Ton

General Arrangement Drawing No: MC 1204-2-A

Approximate Uppermost Impact Area: KK, 53 - El. 750 + 0

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Hatch Cover - 5700 lbs.	Mech./Nuclear Equip.	750 + 0	(4)a
	NS Mixed Bed Demineralizer	733 + 0 @ hatch from floor above	(4)a
	Elec. Equip.	750 + 0	(4)a
		733 + 0 @ hatch from floor above	(4)a
	Mech./Nuclear & Elec. Equip.	733 + 0 not @ hatch from floor above	(4)b
		< 733 + 0	(4)b

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Misc. Equip. Jib Crane - A072

Capacity: 3 Ton

General Arrangement Drawing No: MC 1204-2-A

Approximate Uppermost Impact Area: LL, 55 - El. 750 + 0

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Hatch Cover - 5300 lbs. Misc. Equip. - <6000 lbs.	Mech./Nuclear Equip.	750 + 0	(4) a
	WM Piping	733 + 0 @ hatch from floor above	(4) a
	Elec. Equip.	750 + 0 733 + 0 @ hatch from floor above	(4) a (4) a
	Mech./Nuclear & Elec. Equip.	733 + 0 not @ hatch from floor above	(4) b
		< 733 + 0	(4) b

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Misc. Equip. Monorail - A068

Capacity: 2 Ton

General Arrangement Drawing No: MC 1204-2-A

Approximate Uppermost Impact Area: NN, 51- El. 750 + 0

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Hatch Cover - 4000 lbs.	Mech./Nuclear Equip.	750 + 0	(4) a
Misc. Equip. - < 4000 lbs.	MV Piping	733 + 0 @ hatch from floor above	(4) a
	Elec. Equip. Train B	750 + 0 733 + 0 @ hatch from floor above	(1) (4) a
	Mech./Nuclear & Elec. Equip.	733 + 0 not @ hatch from floor above	(4) b
		< 733 + 0	(4) b

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Misc. Equip. Jib Crane - A070

Capacity: 3 Ton

General Arrangement Drawing No: MC 1204-2-A

Approximate Uppermost Impact Area: LL, 53 - El. 750 + 0

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Hatch Cover - 5100 lbs.	Mech./Nuclear Equip.	750 + 0	(4)a
Misc. Equip. - <6000 lbs.	NS Mixed Bed Demineralizer	733 + 0 @ hatch from floor above	(4)a
	Elec. Equip. A & B Train	750 + 0 733 + 0 @ hatch from floor above	(4)a (4)a
	Mech./Nuclear & Elec. Equip.	733 + 0 not @ hatch from floor above	(4)b
		<733 + 0	(4)b

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Access Hatch Monorail - A052

Capacity: 3 Ton

General Arrangement Drawing No: MC 1204-2-A

Approximate Uppermost Impact Area: LL, 53 - El. 750 + 0

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Hatch Cover - 4500 lbs. Cat. Bed Demin. Equip - < 6000 lbs.	Mech./Nuclear Equip.	750 + 0	(4) a
	NS Mixed Bed Demineralizer	733 + 0 @ hatch from floor above	(4) a
	Elec. Equip. A & B Train	750 + 0	(4) a
		733 + 0 @ hatch from floor above	(4) a
	Mech./Nuclear & Elec. Equip.	733 + 0 not @ hatch from floor above	(4) b
		< 733 + 0	(4) b

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Cen. Chg. Pump & Pump Motor Access Monorail - A019

Capacity: 4 Ton

General Arrangement Drawing No: MC 1202-2-A

Approximate Uppermost Impact Area: HH, 55 - El. 733 + 0

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Hatch Cover - 6300 lbs.	Mech./Nuclear Equip.	733 + 0	(4)
Cen. Chg. Pump - 7500 lbs.			
Cen. Chg. Pump Motor - 4710 lbs.	NV & RN Systems	716 + 0 @ hatch from floor above	(1) & (2)*
	Elec. Equip.		
	B Train	733 + 0	(1)**
	A Train	716 + 0 @ hatch from floor above	(1)**
	Mech./Nuclear & Elec. Equip.		
* Method for Shutdown: SSF for Seal Inj., NI Pumps for charging.		716 + 0 not @ hatch from floor above	(4)b
		< 716 + 0	(4)b
** SSF & Train B cables have adequate separation.			

\* Equipment required for plant safe-shutdown and/or decay heat removal



LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Safety Inj. Pump & Pump Motor Access Monorail - A027

Capacity: 2½ Ton

General Arrangement Drawing No: MC 1202-2-A

Approximate Uppermost Impact Area: HH, 53 - El. 733 + 0

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Hatch Cover - 2300 lbs.	Mech./Nuclear Equip.	733 + 0	(4)a
Safety Inj. Pump - 5260 lbs.		716 + 0 @ hatch from	(4)e
Safety Inj. Pump Motor - 3900 lbs.	NI System	floor above	
	Elec. Equip.	733 + 0	(4)a
	Train A Pump Motor	716 + 0 @ hatch from	(1)
		floor above	
	Mech./Nuclear & Elec. Equip.	716 + 0 not @ hatch from	(4)b
		floor above	
		< 716 + 0	(4)b

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Recp. Chg. Pump, Pump Motor, and Fluid Drive Access Monorail - A017

Capacity: 6 Ton

General Arrangement Drawing No: MC 1202-2-A

Approximate Uppermost Impact Area: JJ, 54 - El. 733 + 0

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Recp. Chg. Pump - 11,200 lbs. Recp. Chg. Pump Motor - 1250 lbs. Fluid Drive - 2090 lbs.	Mech./Nuclear Equip.	733 + 0	(4)a
	NV & FW Piping	716 + 0 @ hatch from floor above	(1) & (2)*
	Elec. Equip.	733 + 0	(4)a
		716 + 0 @ hatch from floor above	(4)a
	Mech./Nuclear & Elec. Equip.	716 + 0 not @ hatch from floor above	(4)b
		< 716 + 0	(4)b

\* Method for Shutdown:  
SSF for Seal Inj. and  
NI Pumps for charging.

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Misc. Equip. Monorail - A031

Capacity: 5 Ton

General Arrangement Drawing No: MC 1202-2-A

Approximate Uppermost Impact Area: JJ, 54 - El. 733 + 0

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Hatch Cover - 8400 lbs.	Mech./Nuclear Equip.	733 + 0	(4)a
Misc. Equip. - < 10,000 lbs.	NV & FW Piping	716 + 0 @ hatch from floor above	(1) & (2)*
	Elec. Equip.	733 + 0	(4)a
		716 + 0 @ hatch from floor above	(4)a
	Mech./Nuclear & Elec. Equip.	716 + 0 not @ hatch from floor above	(4)b
		< 716 + 0	(4)b

\* Method for Shutdown:  
SSF for Seal Inj. and  
NI Pumps for charging.

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Safety Inj. Pump & Pump Motor Access Monorail - A024

Capacity: 2½ Ton

General Arrangement Drawing No: MC 1202-2-A

Approximate Uppermost Impact Area: GG, 53 - El. 733 + 0

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Hatch Cover - 2300 lbs.	Mech./Nuclear Equip.	733 + 0	(4)a
Safety Inj. Pump - 5260 lbs.			
Safety Inj. Pump Motor - 3900 lbs.	NI Pump 1B and RN Piping to Motor Cooler	716 + 0 @ hatch from floor above	(3)
	Elec. Equip.		
	NI Pump Motor 1B	733 + 0 716 + 0 @ hatch from floor above	(4)a (3)
	Mech./Nuclear and Elec. Equip.	716 + 0 not @ hatch from floor above	(4)b
		< 716 + 0	(4)b

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane:        Cen. Chg. Pump & Pump Motor Access Monorail - A020

Capacity:   4 Ton

General Arrangement Drawing No:    MC 1202-2-A

Approximate Uppermost Impact Area:    HH, 55 - El. 733 + 0

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Hatch Cover - 6300 lbs.	Mech./Nuclear Equip.	733 + 0	(4) a
Cen. Chg. Pump - 7500 lbs.			
Cen. Chg. Pump Motor - 4710 lbs.	NV Charging Pump	716 + 0 @ hatch from floor above	(1)
	Elec. Equip.	733 + 0	(4) a
	B Train	716 + 0 @ hatch from floor	(1)
	Mech./Nuclear & Elec. Equip.	716 + 0 not @ hatch from floor above	(4) b
		< 716 + 0	(4) b

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: N D Pump Access Monorail - A005A, A005B, A005C

Capacity: 5 Ton

General Arrangement Drawing No: MC 1201-2-A

Approximate Uppermost Impact Area: GG, 54 - El. 716 + 0

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Hatch Cover - 9100 lbs. N D Pump - 9500 lbs.	Mech./Nuclear Equip.	716 + 0	(4) a
	KC, ND, RN Systems Train A & B and non- essential headers	695 + 0 @ hatch from floor above	(1) & (3) *
	Elec. Equip. A & B Train A & B Train	716 + 0 695 + 0 @ hatch from floor above	(1) & (3)* (1) & (3)*
	Mech./Nuclear & Elec. Equip.	695 + 0 not @ hatch from floor above	(4)b

\*Due to site specific considerations,  
system separation is maintained.

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Misc. Equip. Monorail - A010

Capacity: 4 Ton

General Arrangement Drawing No: MC 1201-2-A

Approximate Uppermost Impact Area: GG, 55 - El. 716 + 0

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Hatch Cover - 7200 lbs. Misc. Equip. - <8000 lbs.	Mech./Nuclear	716 + 0	(4) a
	RN Train 1A Air Handling Unit	695 + 0 @ hatch from floor above	(3)
	Elec. Equip A Train Air Handling Unit Motors	716 + 0 695 + 0 @ hatch from floor above	(1) (3)
	Mech./Nuclear & Elec. Equip	695 + 0 not @ hatch from floor above	(4) b

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: RHR & Sump Pump Access Monorail - A002A & A002B

Capacity: 5 Ton

General Arrangement Drawing No: MC 1201-2-A

Approximate Uppermost Impact Area: GG, 55 - El. 716 + 0

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Hatch Cover - 7200 lbs.	Mech./Nuclear	716 + 0	(4)a
N D Pump - 2050 lbs.		695 + 0 @ hatch from	(3)
N D Pump Motor - 8350 lbs.	RN Train IA Air Handling Unit	floor above	
	Elec. Equip.	716 + 0	(1)
	A Train	695 + 0 @ hatch from	(3)
	Air Handling Unit	floor above	
	Motors		
	Mech./Nuclear & Elec. Equip	695 + 0 not @ hatch from	(4)b
		floor above	

\* Equipment required for plant safe-shutdown and/or decay heat removal



LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: N S Pump Access Monorail - A006A, A006B

Capacity: 5 Ton

General Arrangement Drawing No: MC 1201-2-A

Approximate Uppermost Impact Area: GG, 55 - El. 716 + 0

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Hatch Cover - 7200 lbs.	Mech./Nuclear Equip.	716 + 0	(4) a
N S Pump - 2470 lbs.			
N S Pump Motor - 7500 lbs.	Containment Spray Pump 1B and RN supply to Air Handling Unit	695 + 0 @ hatch from floor above	(3)
	Elec. Equip.		
	Containment Spray Pump 1 B Motor	716 + 0 695 + 0 @ hatch from floor above	(4) a (3)
	Mech./Nuclear & Electrical Equip.	695 + 0 not @ hatch from floor above	(4) b

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Misc. Equip. Monorail - A076

Capacity: 2 Ton

General Arrangement Drawing No: MC 1205-3-A

Approximate Uppermost Impact Area: LL, 58 - El. 767 + 0

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Hatch Cover - 4300 lbs. Misc. Equip. - <4000 lbs.	Mech./Nuclear Equip.	767 + 0	(4)a
	NR System	750 + 0 @ hatch from floor above	(4)a
	Elec. Equip.	767 + 0	(4)a
		750 + 0 @ hatch from floor above	(4)a
	Mech./Nuclear & Elec. Equip.	750 + 0 not @ hatch from floor above	(4)b
		< 750 + 0	(4)b

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Misc. Equip. Monorail - A078

Capacity: 3 Ton

General Arrangement Drawing No: MC 1205-3-A

Approximate Uppermost Impact Area: KK, 59 - El. 767 + 0

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Hatch Cover - 3800 lbs. Misc. Equip. - <6000 lbs.	Mech/Nuclear Equip.	767 + 0	(4)a
	Letdown Heat Exchanger, KC & MV Piping	750 + 0 @ hatch from floor above	(4)a
	Elec. Equip.	767 + 0	(4)a
		750 + 0 @ hatch from floor above	(4)a
	Mech./Nuclear & Elec. Equip.	750 + 0 not @ hatch from floor above	(4)b
		< 750 + 0	(4)b

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Misc. Equip. Monorail - A080

Capacity: 10 Ton

General Arrangement Drawing No: MC 1205-3-A

Approximate Uppermost Impact Area: PP, 60 - El. 767 + 0

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Hatch Cover - 4500 lbs. Misc. Equip. - < 20,000 lbs.	Mech./Nuclear Equip.	767 + 0	(4) a
	KF Heat Exchanger, Kf and KC Piping	750 + 0 @ hatch from floor above	(4) a
	Elec. Equip.	767 + 0	(4) a
		750 + 0 @ hatch from floor above	(4) a
	Mech./Nuclear & Elec. Equip.	750 + 0 not @ hatch from floor above	(4) b
		< 750 + 0	(4) b

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Equip. Access Monorail - A082

Capacity: 10 Ton

General Arrangement Drawing No: MC 1205-2-A & MC 1205-3-A

Approximate Uppermost Impact Area: LL, 56 - El. 767 + 0

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Misc. Equip. - < 20,000 lbs.	Mech./Nuclear Equip.	767 + 0	(4)a
	Cooling Water Supply to RHR Heat Exchanger 2A,ND System	750 + 0 @ hatch from floor above	(1)
	Elec. Equip.	767 + 0	(4)a
	KC,FW,NI Systems, Train B	750 + 0 @ hatch from floor above	(1)
	Mech./Nuclear & Elec. Equip.	750 + 0 not @ hatch from floor above	(4)b
		< 750 + 0	(4)b

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Misc. Equip. Monorail - A084

Capacity: 10 Ton

General Arrangement Drawing No: MC 1205-3-A

Approximate Uppermost Impact Area: JJ, 58 - El. 767 + 0

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Hatch Cover - 4500 lbs. Misc. Equip. - < 20,000 lbs.	Mech./Nuclear Equip.		
		767 + 0	(4) a
	RN to KC Heat Exchanger 2B	750 + 0	(1)
	Seal Water Inj. Filter Lines	733 + 0 @ hatch from floor above	(4) a
	NI Piping	716 + 0	(4) a
	Elec. Equip. Train A	767 + 0	(1)
		750 + 0	(4)
		733 + 0 @ hatch from floor above	(4)
	Train B	716 + 0 @ hatch from floor above	(1)
	Mech./Nuclear & Elec. Equip.		
		< 750 + 0 not @ hatch from floor above	(4) b

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Duct Shaft Access Monorail - A087

Capacity: 2 Ton

General Arrangement Drawing No: MC 1205-3-A

Approximate Uppermost Impact Area: JJ, 59 - El. 767 + 0

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Equip. for Duct Shaft - <4000 lbs.	Mech./Nuclear Equip.	767 + 0	(4) a
		750 + 0 @ hatch from floor above	(4) a
	Elec. Equip.	767 + 0	(4) a
		750 + 0 @ hatch from floor above	(4) a
	Mech./Nuclear & Elec. Equip.	750 + 0 not @ hatch from floor above	(4) b
		< 750 + 0	(4) b

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Misc. Equip. Monorail - A088A & A088B

Capacity: 5 Ton

General Arrangement Drawing No: MC 1205-3-A

Approximate Uppermost Impact Area: MM, 56 - El. 767 + 0

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Hatch Cover - 8400 lbs.	Mech./Nuclear Equip.	767 + 0	(4) a
Misc. Equip. - <10,000 lbs.		750 + 0	(4) a
	Elec. Equip.	767 + 0	(4) a
	B Train	750 + 0	(1)
	Mech./Nuclear & Elec. Equip.		
		< 750 + 0	(4) b

\* Equipment required for plant safe-shutdown and/or decay heat removal



LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Misc. Equip. Monorail - A090

Capacity: 3 Ton

General Arrangement Drawing No: MC 1205-3-A

Approximate Uppermost Impact Area: GG, 58 - El. 767 + 0

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Hatch Cover - 3500 lbs.	Mech./Nuclear Equip.	767 + 0	(4)a
Misc. Equip. - <6000 lbs.		750 + 0	(4)a
	Seal Water Heat Exchanger,	733 + 0	(4)a
	KC, RN Systems		
	RN, A & B Train	716 + 0 @ hatch from floor above	(1) & (3)*
	Elec. Equip.		
	A Train	767 + 0	(1)
		750 + 0	(4)
		733 + 0	(4)
	A & B Train	716 + 0 @ hatch from floor above	(1) & (3)*
* Due to site specific considerations, sytem separation is maintained.	Mech./Nuclear & Elec. Equip.	< 716 + 0 @ hatch from floor above	(4)b
		< 733 + 0 not @ hatch from floor above	(4)b

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Misc. Equip. Monorail - A033

Capacity: 5 Ton

General Arrangement Drawing No: MC 1204-3-A

Approximate Uppermost Impact Area: JJ, 58 - El. 750 + 0

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Hatch Cover - 9100 lbs. Misc. Equip. - <10,000 lbs.	Mech./Nuclear Equip.	750 + 0	(4)a
		733 + 0 @ hatch from floor above	(4)a
		716 + 0 @ hatch from floor above	(4)a
	Elec. Equip.	750 + 0	(4)a
		733 + 0 @ hatch from floor above	(4)a
		716 + 0 @ hatch from floor above	(4)a
	Mech./Nuclear & Elec. Equip.	< 750 + 0 not @ hatch from floor above	(4)b
		< 716 + 0 @ hatch from floor above	(4)b

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Misc. Filter Access Monorail - A046

Capacity: 3 Ton

General Arrangement Drawing No: MC 1204-3-A

Approximate Uppermost Impact Area: NN, 56 - El. 750 + 0

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Hatch Cover - 46000 lbs. N B Evap. Cond. Filter Equip. - <6000 lbs.	Mech./Nuclear Equip.	750 + 0	(4)a
		733 + 0 @ hatch from floor above	(4)a
	Elec. Equip.	750 + 0	(4)a
		733 + 0 @ hatch from floor above	(4)a
	Mech./Nuclear & Elec. Equip.	733 + 0 not @ hatch from floor above	(4)b
		< 733 + 0	(4)b

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Access Hatch Monorail - A049

Capacity: 2 Ton

General Arrangement Drawing No: MC 1204-3-A

Approximate Uppermost Impact Area: MM, 59 - E1.750 + 0

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Hatch Cover - 4000 lbs.	Mech./Nuclear Equip.	750 + 0	(4)a
		733 + 0 @ hatch from floor above	(4)a
	Elec. Equip.	750 + 0	(4)a
		733 + 0 @ hatch from floor above	(4)a
	Mech./Nuclear & Elec. Equip.	733 + 0 not @ hatch from floor above	(4)b
		< 733 + 0	(4)b

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Access Hatch Monorail - A054

Capacity: 3 Ton

General Arrangement Drawing No: MC 1204-3-A

Approximate Uppermost Impact Area: KK, 57 - El. 750 + 0

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Hatch Cover - 5400 lbs.	Mech./Nuclear Equip.	750 + 0	(4) a
		733 + 0 @ hatch from floor above	(4) a
	Elec. Equip.	750 + 0	(4) a
		733 + 0 @ hatch from floor above	(4) a
	Mech./Nuclear & Elec. Equip.	733 + 0 not @ hatch from floor above	(4) b
		< 733 + 0	(4) b

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Access Hatch Monorail - A056

Capacity: 5 Ton

General Arrangement Drawing No: MC 1204-3-A

Approximate Uppermost Impact Area: KK, 58 - El. 750 + 0

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Hatch Cover - 8600 lbs.	Mech./Nuclear Equip.	750 + 0	(4) a
		733 + 0 @ hatch from floor above	(4) a
	Elec. Equip.	750 + 0	(4) a
		733 + 0 @ hatch from floor above	(4) a
	Mech./Nuclear & Elec. Equip.	733 + 0 not @ hatch from floor above	(4) b
		< 733 + 0	(4) b

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Access Hatch Monorail - A057

Capacity: 2 Ton

General Arrangement Drawing No: MC 1204-3-A

Approximate Uppermost Impact Area: MM, 60 - El. 750 + 0

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Hatch Cover - 4100 lbs.	Mech./Nuclear Equip.	750 + 0	(4)a
		733 + 0 @ hatch from floor above	(4)a
	Elec. Equip.	750 + 0	(4)a
		733 + 0 @ hatch from floor above	(4)a
	Mech./Nuclear & Elec. Equip.	733 + 0 not @ hatch from floor above	(4)b
		< 733 + 0	(4)b

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Access Hatch Monorail - A059

Capacity: 4 Ton

General Arrangement Drawing No: MC 1204-3-A

Approximate Uppermost Impact Area: MM, 58 - El. 750 + 0

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Hatch Cover - 6900 lbs.	Mech./Nuclear Equip.	750 + 0	(4)a
		733 + 0 @ hatch from floor above	(4)a
	Elec. Equip.	750 + 0	(4)a
		733 + 0 @ hatch from floor above	(4)a
	Mech./Nuclear & Elec. Equip.	733 + 0 not @ hatch from floor above	(4)b
		< 733 + 0	(4)b

\* Equipment required for plant safe-shutdown and/or decay heat removal



LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Access Hatch Monorail - A060

Capacity: 4 Ton

General Arrangement Drawing No: MC 1204-3-A

Approximate Uppermost Impact Area: MM, 57 - El. 750 + 0

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Hatch Cover - 6900 lbs.	Mech./Nuclear Equip.	750 + 0	(4) a
		733 + 0 @ hatch from floor above	(4) a
	Elec. Equip.	750 + 0	(4) a
		733 + 0 @ hatch from floor above	(4) a
	Mech./Nuclear & Elec. Equip.	733 + 0 not @ hatch from floor above	(4) b
		< 733 + 0	(4) b

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Access Hatch Monorail - A061

Capacity: 3 Ton

General Arrangement Drawing No: MC 1204-3-A

Approximate Uppermost Impact Area: MM, 59 - El. 750 + 0

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Hatch Cover - 4500 lbs.	Mech./Nuclear Equip.	750 + 0	(4)a
		733 + 0 @ hatch from floor above	(4)a
	Elec. Equip.	750 + 0	(4)a
		733 + 0 @ hatch from floor above	(4)a
	Mech./Nuclear & Elec. Equip.	733 + 0 not @ hatch from floor above	(4)b
		< 733 + 0	(4)b

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Access Hatch Monorail - A062

Capacity: 3 Ton

General Arrangement Drawing No: MC 1204-3-A

Approximate Uppermost Impact Area: KK, 60 - El. 750 + 0

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Hatch Cover - 5600 lbs.	Mech./Nuclear Equip.	750 + 0	(4)a
		733 + 0 @ hatch from floor above	(4)a
	Elec. Equip.	750 + 0	(4)a
		733 + 0 @ hatch from floor above	(4)a
	Mech./Nuclear & Elec. Equip.	733 + 0 not @ hatch from floor above	(4)b
		< 733 + 0	(4)b

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Access Hatch Monorail - A064

Capacity: 2 Ton

General Arrangement Drawing No: MC 1204-3-A

Approximate Uppermost Impact Area: KK, 60 - El. 750 + 0

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Hatch Cover - 4000 lbs.	Mech./Nuclear Equip.	750 + 0	(4) a
		733 + 0 @ hatch from floor above	(4) a
	Elec. Equip.	750 + 0	(4) a
		733 + 0 @ hatch from floor above	(4) a
	Mech./Nuclear & Elec. Equip.	733 + 0 not @ hatch from floor above	(4) b
		< 733 + 0	(4) b

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Access Hatch Monorail - A063

Capacity: 3 Ton

General Arrangement Drawing No: MC 1204-3-A

Approximate Uppermost Impact Area: KK, 59 - El. 750 + 0

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Hatch Cover - 5700 lbs.	Mech./Nuclear Equip.	750 + 0	(4) a
		733 + 0 @ hatch from floor above	(4) a
	Elec. Equip.	750 + 0	(4) a
		733 + 0 @ hatch from floor above	(4) a
	Mech./Nuclear & Elec. Equip.	733 + 0 not @ hatch from floor above	(4) b
		< 733 + 0	(4) b

\* Equipment required for plant safe-shutdown and/or decay-heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Misc. Equip. Jib Crane - A073

Capacity: 3 Ton

General Arrangement Drawing No: MC 1204-3-A

Approximate Uppermost Impact Area: LL, 59 - El. 750 + 0

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Hatch Cover - 5100 lbs. Misc. Equip. - < 6000 lbs.	Mech./Nuclear Equip.	750 + 0	(4)a
		733 + 0 @ hatch from floor above	(4)a
	Elec. Equip.	750 + 0	(4)a
		733 + 0 @ hatch from floor above	(4)a
	Mech./Nuclear & Elec. Equip.	733 + 0 not @ hatch from floor above	(4)b
		< 733 + 0	(4)b

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Misc. Filter Access Monorail - A047

Capacity: 2 Ton

General Arrangement Drawing No: MC 1204-3A

Approximate Uppermost Impact Area: KK, 57 - El. 750 + 0

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Hatch Cover - 3200 lbs. Misc. Filter Room Equip. - <4000 lbs.	Mech./Nuclear Equip.	750 + 0	(4)a
		733 + 0 @ hatch from floor above	(4)a
	Elec. Equip. A Train	750 + 0	(1)
		733 + 0 @ hatch from floor above	(4)a
	Mech./Nuclear & Elec. Equip.	733 + 0 not @ hatch from floor above	(4)b
		< 733 + 0	(4)b

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Access Hatch Monorail - A058

Capacity: 2 Ton

General Arrangement Drawing No: MC 1204-3-

Approximate Uppermost Impact Area: JJ, 60 - El. 750 + 0

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Hatch Cover - 4100 lbs.	Mech./Nuclear Equip.	750 + 0	(4) a
	NV Inj. Filter, Seal	733 + 0 @ hatch from	(4) a
	Water Filter	floor above	
	Elec. Equip.	750 + 0	(4) a
		733 + 0 @ hatch from	(4) a
		floor above	
	Mech./Nuclear & Elec. Equip.	733 + 0 not @ hatch from	(4) b
		floor above	
		< 733 + 0	(4) b

\* Equipment required for plant safe-shutdown and/or decay heat removal



LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Safety Inj. Pump & Pump Motor Access Monorail - A025

Capacity: 2½ Ton

General Arrangement Drawing No: MC 1202-3-A

Approximate Uppermost Impact Area: GG, 58 - El. 733 + 0

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Hatch Cover - 2300 lbs.	Mech./Nuclear Equip.		
Safety Inj. Pump - 5260 lbs.		733 + 0	(4)a
Safety Inj. Pump Motor - 3900 lbs.	NI System	716 + 0 @ hatch from floor above	(4)e
	Elec. Equip.		
	Train B	733 + 0	(1)
	Train B	716 + 0 @ hatch from floor above	(1)
	Mech./Nuclear & Elec. Equip.		
		716 + 0 not @ hatch from floor above	(4)b
		< 716 + 0	(4)b

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Cen. Chg. Pump & Pump Motor Access Monorail - A021

Capacity: 4 Ton

General Arrangement Drawing No: MC 1202-3-A

Approximate Uppermost Impact Area: HH, 57 - El. 733 + 0

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Hatch Coer - 6300 lbs.	Mech./Nuclear Equip.	733 + 0	(4)
Cen. Chg. Pump - 7500 lbs.		716 + 0 @ hatch from	(1) & (2) *
Cen. Chg. Pump Motor - 4710 lbs.	NV & RN Systems	floor above	
	Elec. Equip.	733 + 0	(1)**
	A Train	716 + 0 @ hatch from	(1)**
	A Train	floor above	
	Mech./Nuclear & Elec. Equip.	716 + 0 not @ hatch from	(4)b
		floor above	
		< 716 + 0	(4)b

\* Method for Shutdown:  
SSF for Seal Inj., NI  
Pumps for charging.

\*\* SSF Train B cables  
have adequate separation.

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Cen. Chg. Pump & Pump Motor Access Monorail - A022

Capacity: 4 Ton

General Arrangement Drawing No: MC 1202-3-A

Approximate Uppermost Impact Area: HH, 59 - El. 733 + 0

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Hatch Cover - 6300 lbs.	Mech./Nuclear Equip.	733 + 0	(4)
Cen. Chg. Pump. - 7500 lbs.		716 + 0	(1) & (2)*
Cen. Chg. Pump Motor - 4710 lbs.	NV & RN Systems		
	Elec. Equip.		
	A Train	733 + 0	(1)**
	A Train	716 + 0	(1)**
	Mech./Nuclear & Elec. Equip.		
		< 716 + 0	(4)b

\*Method for Shutdown:  
SSF for Seal Inj., NI  
Pumps for charging.

\*\*SSF Train B cables  
have adequate separation.

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Safety Inj. Pump & Pump Motor Access Monorail - A028

Capacity: 2½ Ton

General Arrangement Drawing No: MC 1202-3-A

Approximate Uppermost Impact Area: HH, 58 - El. 733 + 0

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Hatch Cover - 2300 lbs.	Mech./Nuclear Equip.		
Safety Inj. Pump - 5260 lbs.		733 + 0	(4) a
Safety Inj. Pump Motor - 3900 lbs.		716 + 0	(3)
	Elec. Equip.		
	A Train	733 + 0	(1)
	A Train	716 + 0	(1)
	Mech./Nuclear & Elec. Equip.		
		< 716 + 0	(4) b

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Misc. Equip. Monorail - A023

Capacity: 5 Ton

General Arrangement Drawing No: MC 1202-3-A

Approximate Uppermost Impact Area: FF, 57 - El. 733 + 0

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Hatch Cover - 9000 lbs. Misc. Equip. - <10,000 lbs.	Mech./Nuclear Equip.	733 + 0	(4)a
		716 + 0 North of Column Line FF	(4)a
	NS Pump 1A	695 + 0 @ hatch from floor above	(1)
	Elec. Equip. Train B	733 + 0	(1)
		716 + 0 North of Column Line FF	(1)
	Train A & B	695 + 0 @ hatch from floor above	(1)
	Train A		
	Mech./Nuclear & Elec. Equip.	716 + 0 South of Column Line FF	(4)b
		695 + 0 not @ hatch from floor above	(4)b

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Misc. Equip. Monorail - A026

Capacity: 3 Ton

General Arrangement Drawing No: MC 1202-3-A

Approximate Uppermost Impact Area: MM, 56 - El. 733 + 0

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Hatch Cover - 4000 lbs.	Mech./Nuclear Equip.	733 + 0	(4)a
Misc. Equip. - < 6000 lbs.		716 + 0	(4)a
	Elec. Equip.	733 + 0	(4)a
	Train A	716 + 0	(1)

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Misc. Equip. Monorail - A032

Capacity: 5 Ton

General Arrangement Drawing No: MC 1202-3-A

Approximate Uppermost Impact Area: JJ, 58 - El. 733 + 0

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Hatch Cover - 8400 lbs. Misc. Equip. - < 10,000 lbs.	Mech./Nuclear Equip.	733 + 0	(4)a
	NV & FW Piping	716 + 0 @ hatch from floor above	(1) & (2)*
	Elec. Equip.	733 + 0	(1)
	A Train	716 + 0 @ hatch from floor above	(1)
	A Train	716 + 0 @ hatch from floor above	(1)
	Mech./Nuclear & Elec. Equip.	716 + 0 not @ hatch from floor above	(4)b

\* Method for Shutdown:  
SSF for Seal Inj. and  
NI pumps for charging.

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Recp. Chg. Pump, Pump Motor, and Fluid Drive Access Monorail - A018

Capacity: 6 Ton

General Arrangement Drawing No: MC 1202-3-A

Approximate Uppermost Impact Area: JJ, 58 - El. 733 + 0

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Recp. Chg. Pump -11,200 lbs.	Mech./Nuclear Equip.	733 + 0	(4) <sup>a</sup>
Recp. Chg. Pump Motor - 1250 lbs.		716 + 0 @ hatch from	(1) & (2)*
Fluid Drive - 2090 lbs.		floor above	
	Elec. Equip.		
	A Train	733 + 0	(1)
	A Train	716 + 0 @ hatch from	(1)
		floor above	

\* Method for Shutdown:  
SSF for seal inj. and  
NI pumps for charging.

\* Equipment required for plant safe-shutdown and/or decay heat removal



LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Misc. Equip. Monorail - A003

Capacity: 5 Ton

General Arrangement Drawing No: MC 1201-3-A

Approximate Uppermost Impact Area: GG, 57 - El. 716 + 0

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Hatch Cover - 7200 lbs.	Mech./Nuclear Equip.	716 + 0	(4) a
Misc. Equip. - <10,000 lbs.	NS Pump 1A	695 + 0	(3)
	Elec. Equip.	716 + 0	(3)
	Train A	695 + 0	(3)
	Pump Motor A		

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Misc. Equip. Jib Crane - A011

Capacity: 3 Ton

General Arrangement Drawing No: MC 1201-2-A & MC 1201-3-A

Approximate Uppermost Impact Area: HH, 56 - El. 716 + 0

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Hatch Cover - 5400 lbs. Misc. Equip. - <6000 lbs.	Mech./Nuclear Equip.	716 + 0	(4) a
		695 + 0 @ hatch from floor above	(4) a
	Elec. Equip. A Train	716 + 0	(1)
		695 + 0 @ hatch from floor above	(4) a
	Mech./Nuclear & Elec. Equip.	695 + 0 not @ hatch from floor above	(4) b

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: RHR & Sump Pump Access Monorail - A001

Capacity: 5 Ton

General Arrangement Drawing No: MC 1201-3-A

Approximate Uppermost Impact Area: GG, 56 - El. 716 + 0

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Hatch Cover - 7200 lbs.	Mech./Nuclear Equip.	716 + 0	(4)a
	RN Train 1A Air Handling Unit	695 + 0 @ hatch from floor above	(1)
	Elec. Equip. A Train	716 + 0	(1)
	Air Handling Unit Motors	695 + 0 @ hatch from floor above	(3)
	Mech./Nuclear & Elec. Equip.	695 + 0 not @ hatch from floor above	(4)b

\* Equipment required for plant safe-shutdown and/or decay heat removal

LOAD/IMPACT AREA MATRIX  
AUXILIARY BUILDING

Crane: Misc. Equip. Monorail - A004

Capacity: 5 Ton

General Arrangement Drawing No: MC 1201-3-A

Approximate Uppermost Impact Area: GG, 58 - E1. 716 + 0

LOADS	SAFETY-RELATED* EQUIPMENT	ELEVATION OF EQUIPMENT	HAZARD ELIMINATION CATEGORY
Hatch Cover - 9100 lbs. Misc. Equip. - < 10,000 lbs.	Mech./Nuclear Equip.	716 + 0	(4)
	KC, ND, RN Systems Train A & B and non-essential headers	695 + 0 @ hatch from floor above	(1) & (3)*
	Elec. Equip. A & B Train A & B Train	716 + 0 695 + 0 @ hatch from floor above	(1) & (3)* (1) & (3)*
	Mech./Nuclear & Elec. Equip.	695 + 0 not @ hatch from floor above	(4)b

\* Due to site specific consideration, system separation is maintained.

\* Equipment required for plant safe-shutdown and/or decay heat removal

### HAZARD ELIMINATION CATEGORIES

1. This system has sufficient separation and redundancy with cross connections and/or isolations to allow it to perform its safety function in the event of a load drop in this area.
2. The location and function of this system is separable and redundant to that of the Standby Shutdown Facility, allowing the units to be shutdown in the event of a load drop in this area.
3. Site-specific considerations preclude the need to consider load/target combination. These site-specific considerations are placed into two categories. The first category is crane restrictions. Certain hoists will be identified and locked to prevent their use during plant operation thus eliminating the need for safe-shutdown equipment identified beneath them. The appropriate changes have been made to the station's crane and hoist program to ensure the continued validity of this category.

The second category of site specific considerations is maintenance sequencing. Certain cranes usage will be limited due to the McGuire Nuclear Station Technical Specifications. These specifications in part speak to restrictions on maintenance, maintenance sequencing, and maintained system redundancy.

4. Analysis demonstrates that crane failure and subsequent load drop will not damage equipment required for plant safe-shutdown and/or decay heat removal.
  - a. Equipment identified not required.
  - b. Floor slab thickness of sufficient thickness and strength to prevent load from penetrating slab and striking equipment.
  - c. All valves fail to safe position.
  - d. Previously analyzed main steam line break. The auxiliary feedwater system, although damaged, can still supply adequate flow.
  - e. The load drop can potentially affect suction isolation of one safety injection pump which could result in partial or total loss of RWST volume. However, alternate isolation exists which can be controlled from the main control room.
5. Likelihood of handling system failure for this load is extremely small.