

3E Design Details and Critical Sections for Safety-Related Category I Structures

This appendix provides details of structural design and analysis for the critical sections relevant to Seismic Category I structures.

Critical Section Selection Criteria

Critical sections are those portions of individual Seismic Category I structures (i.e., shear walls, floor slabs and roofs, structure-to-structure connections), which are particularly important for prevention or mitigation of consequences of postulated design basis accidents, are expected to experience the largest structural demands during design basis conditions, or are needed for safety evaluation of an essentially complete design.

Some selected critical sections may also be typical of other portions of the structure, where the portions they typify are not identified as critical sections due to their strong similarities with the selected critical sections. Critical sections are analytically representative of an essentially complete U.S. EPR design, and their structural design adequacy provides reasonable assurance of overall U.S. EPR structural design adequacy.

U.S. EPR critical section selection is characterized by a three-tier process that includes qualitative, quantitative, and supplementary methodologies to reasonably assure completeness and consistency across each structure.

Qualitative Methodology

The qualitative methodology is applied to portions of the U.S. EPR nuclear island (NI) Common Basemat Structures that are credited in the risk mitigation of the nuclear power plant under design basis loading conditions to provide protection of public safety through the physical plant boundaries. Due to a safety-critical role, some of the U.S. EPR NI Common Basemat Structures are required to achieve major performance requirements for functions whose failures could degrade system or equipment performance of the U.S. EPR design or pose a safety hazard to plant personnel or to the general public. In this regard, they are considered critical structures or critical sections. Unique engineered features in each of the structures can be further broken into portions (e.g., cylindrical walls, liner plates, dome, and dome ring areas of the Reactor Containment Building (RCB)) that are defined as critical sections.

Critical sections identified by the qualitative methodology are:

- RCB—liner plate.
- RCB—cylinder wall and buttress.

- RCB—dome and dome ring areas.
- RCB—connection of containment wall to NI basemat.
- RCB—equipment hatch area.
- RBIS—primary shield wall/reactor vessel support area.
- NI basemat, including tendon gallery, and RBIS baseslab.
- Fuel Building (FB) internal structures—spent fuel pool walls and floor slab.
- RCB—airlock and main steam and feedwater (MS/FW) penetrations.
- FB Internal Structures—fuel transfer tube.

Quantitative Methodology

ANSYS, V 11.0 SP1 is used to create a finite element analysis model of the U.S. EPR NI Common Basemat Structures. This model incorporates numerous finite element types to represent the NI geometry.

The quantitative methodology identifies critical sections by analysis of force and moment results extracted from portions of the global static model not already defined as critical sections by the qualitative methodology. Element forces and moments are extracted from the finite element model (FEM) and sorted for each force or moment type using a series of ANSYS macros to identify elements that have maximum and minimum force demand (minimum being the largest negative forces and moments). The quantitative selection methodology identifies critical sections as follows:

- Specific NI Common Basemat Structures to be reviewed are identified.
- Applicable load combinations are identified.
- Element forces and moments per unit length (i.e., T_x , T_y , T_{xy} , M_x , M_y , M_{xy} , N_x , N_y), along with element centroids in the global Cartesian coordinate system, are obtained from the specified load combinations for all elements in the applicable buildings.
- The elements for walls and slabs are sorted in ascending order by force and moment type.
- For each load combination, elements with the maximum and minimum force demands are identified for walls and slabs. This process is repeated for the selected load combinations and results are combined to produce a subset of potential critical elements.

- The subset of potential critical elements is further refined by eliminating duplicate elements for each element type. The final subset contains only unique controlling critical elements.
- Critical element locations are plotted at their respective elevations for each building. XY scatter plots of controlling critical elements are produced for each elevation containing critical elements and are generated at 10 percent intervals from 100 percent of unique critical elements down to 10 percent. As the percentage of the critical elements with highest forces and moments plotted is decreased, limiting critical elements become apparent. Final identification of critical sections is performed based on the maximum value of load type and frequency.

Critical sections identified by the quantitative methodology are:

- Reactor Building Internal Structure (RBIS)—operating floor slab area.
- RBIS—elevation +4 feet, 11 1/16 inches heavy slab and support walls.
- RBIS—steam generator (SG) cubicle area walls and slabs.
- Safeguard Building (SB) 2/3 hardened shell—walls from top of NI basemat to grade.
- SB 2/3 internal structures—exterior walls from top of NI basemat to elevation +15 feet, 5 inches.
- SB 2/3 internal structures—floor slab at elevation -16 feet, 5 inches and 0 feet, 0 inches.
- SBs 1 and 4—main steam and feedwater valve room walls and slabs.
- SBs 1 and 4—exterior walls from top of NI basemat to elevation +15 feet, 5 inches.
- FB hardened shell—walls from top of NI basemat to elevation +12 feet, 0 inches.
- FB internal structures—major walls from top of NI basemat to bottom of spent fuel pool slab.
- FB internal structures—spent fuel pool walls and floor slab.
- Reactor Shield Building (RSB)—wall areas and connection between RSB wall and SB/FB roof slabs.
- RSB—dome-to-wall transition areas.
- FB hardened shell—roof slab areas for material lock room & support walls.
- FB internal structures—floor slab above spent fuel pool area & support walls.
- RSB—lower portion wall areas.

Note that spent fuel pool walls and slab were identified as critical sections by both the qualitative and quantitative methodologies.

Supplementary Methodology

In addition to the critical sections identified by the qualitative and quantitative methodologies, there are other portions or sections of the plant that may be safety-related but are not explicitly modeled and considered in the U.S. EPR static finite element model. Seismic Category I structures that perform safety-related functions are reviewed to determine which structural sections are not otherwise selected by either the quantitative or qualitative method. Once these sections are determined, engineering judgment is applied to assess whether they should be identified as critical sections. Critical sections selected using this method are supplementary critical sections.

Supplementary critical sections also include sections that constitute significant portions of the Seismic Category I structures in terms of their physical dimensions (i.e., wall and slab areas). Although these sections are not subject to the limiting structural demands of quantitatively-defined critical sections and can be considered less critical, they are necessary to represent an essentially complete design of each structure and provide reasonable assurance of U.S. EPR design adequacy. This is a significant consideration because quantitatively-determined critical sections represent only those portions of a structure that experience high loads or stress and may not identify intervening structural elements that are not subject to high stress or loading but are needed for evaluating structural functionality.

Because potential supplementary critical sections exist throughout the U.S. EPR design, spatial distribution and significant structural discontinuities are also important factors in supplementary critical sections selection.

Critical sections identified by the supplementary methodology are:

- NI—typical columns and beams.
- NI—Vent Stack.
- Emergency Power Generating Buildings (EPGB)—basemat foundation at elevation 0 feet, 0 inches.
- EPGB—shear wall on column line 11.
- EPGB—reinforced concrete slab and composite beams at elevation 51 feet, 6 inches.
- EPGB—shear wall on column line C.
- EPGB—shear wall on column line E.

- Essential Service Water Buildings (ESWB)—basemat foundation at elevation -16 feet, 0 inches.
- ESWB—shear wall at column line 4.
- ESWB—fan deck slab at elevation 63 feet, 0 inches.
- ESWB—shear wall on column line D.

Information is presented for the NI Common Basemat Structures (3E.1), EPGB (3E.2), and ESWB (3E.3).

The following information is provided:

- Description of the critical section.
- Applicable loadings and design method.
- Results of structural analysis.

A COL applicant that references the U.S. EPR design certification will address critical sections relevant to site-specific Seismic Category I structures.

3E.1 Nuclear Island Structures

Description of Critical Sections in Nuclear Island Structures

The critical sections presented in this section are structures supported on the NI Common Basemat. This includes the Reactor Containment Building containing the Reactor Building Internal Structure, the Fuel Building, Safeguard Building 1, 2, 3, and 4 and the Reactor Shield Building.

The RCB is located inside of the reinforced concrete RSB, and is separated by an annular space to protect against interaction of the two structures when subjected to postulated design basis loading conditions. Figure 3.8-2, Figure 3.8-3, and Figure 3.8-4 show arrangements of the RCB. Section 3.8.1.1 provides a description of the RCB.

Materials

Concrete – conforms to the requirements specified in Sections 3.8.1.6.1, 3.8.3.6.1, 3.8.4.6.1, and 3.8.5.6.1 as summarized below:

	Compressive Strength f_c (psi)	Modulus of Elasticity (ksi)	Shear Modulus (ksi)	Poisson's Ratio
Reactor Building	7000	4769	2038	0.17
RB Internal Structures	6000	4415	1887	0.17
Other Seismic Category I Structures ⁽¹⁾	6000	4415	1887	0.17
Foundations	4000	3605	1541	0.17

Notes:

1. EPGB and ESWB concrete material requirements, except foundations, are included in Appendix 3E.2 and 3E.3, respectively.

Reinforcing Steel – deformed steel bars conforming to ASTM A615 Grade 60 with minimum yield strength of $F_y = 60$ ksi, and minimum tensile strength $F_u = 90$ ksi. Minimum bar elongation in 8 inches is based on ASTM A615: 9 percent for bar No. 3 to 6; 8 percent for bar No. 7 and 8; and 7 percent for bar No. 9, 10, 11, 14, and 18.

Structural Steel – conforms to the requirements specified in Section 3.8.1.6.4, Section 3.8.3.6.3, and Table 3.8-8. Liner plate material conforms to SA-516, Grades 55 to 70, with minimum yield strength $F_y = 30$ -38 ksi, and minimum tensile strength $F_u = 55$ -90 ksi.

Floor Live and Dead Load Distribution

Dead and live floor loads are tabulated for each room in the Nuclear Island Common Basemat Structure. Loads are uniformly distributed and/or point loads with associated load application coordinates. Point loads less than 20 kips are accounted for in the uniformly distributed equipment dead and live loads, and loads over 20 kips are applied as point loads. In cases where equipment point loads less than 20 kips are applied to grating, loads are distributed over the area of the grating. Distributed dead and live loads are determined for each room. Concrete self weight is based on concrete density of 150 pcf. Precipitation loads are given in Table 2.1-1 and are not included in the floor live loads. Pool loads are also determined separately.

The following distributed loads are applied to the floors of the Safeguard Buildings:

- Uniformly distributed slab load (live) = 125 psf.
- Uniformly distributed slab load (dead) = 125 psf.
- Uniformly distributed grating load (live) = 175 psf.
- Uniformly distributed grating load (dead) = 25 psf.
- Uniformly distributed wall load (dead) = 25 psf.

The following distributed loads are applied to the floors of the Fuel Building:

- Uniformly distributed slab load (live) = 500 psf.
- Uniformly distributed slab load (dead) = 250 psf.
- Uniformly distributed grating load (live) = 175 psf.
- Uniformly distributed grating load (dead) = 25 psf.
- Uniformly distributed wall load (dead) = 25 psf.

The following distributed loads are applied to the floors of the Reactor Building:

- Uniformly distributed slab load (live) = 500 psf.
- Uniformly distributed slab load (dead) = 250 psf.
- Uniformly distributed grating load (live) = 175 psf.
- Uniformly distributed grating load (dead) = 25 psf.
- Uniformly distributed wall load (dead) = 50 psf.

Table 3E.1-3 provides the distribution of the dead and live floor loads in each building.

Equipment Loads

The weight of major equipment, switchgears, heat exchanges, pumps, conduits, exhaust, pipes, elevators, fans, tanks, filters, and cranes is accounted for in the floor loads and is applied as point load throughout the buildings based on location. Some of the major equipment loads are as follows:

Equipment	Elevation/Location	Weight (kips)
Crane SMF03	UFA29-090	137
Crane SMF02	UFA10-069	407
Polar crane	UJA40-001	1180
Reactor pressure vessel (RPV)	4'-11"	3768

Steam generator (SG)	4'-11"	1776 each
Reactor coolant pump (RCP)	4'-11"	474 each
Pressurizer (PZR)	UJA23-019	639
Equipment hatch	64'-0"	154
Air lock	4'-11"; 64'-0"	61 each

Foundation Stability

The Nuclear Island Common Basemat Structure is evaluated for stability against overturning, sliding, and floatation for the soil profiles used in establishing the certified plant design. The tendon gallery is used as a shear key. The minimum factors of safety for the Nuclear Island Common Basemat Structure are listed in Table 3E.1-4. The calculated factors of safety against overturning, sliding, and floatation satisfy the acceptance criteria.

The sliding and overturning factors are determined using load combination containing dead load (D), lateral earth pressure (H), SSE (E'), hydrostatic load (F) and buoyant force (Fb). It is conservatively assumed that the E' and Fb occur simultaneously. The floatation factor of safety is determined based on dead load (D) and buoyant force (Fb). The dead load used in the analysis includes 25 percent of the live load, which is consistent with the generation of dynamic soil pressure due to SSE.

The maximum static and dynamic bearing pressure demands are reported in Table 3E.1-5. The static and dynamic bearing pressures were obtained from the SASSI analysis of the NI common basemat structure as described in Section 3.7.2. The maximum static bearing capacity demand corresponds to dead load of structure, equipment load, pool loads, 25% live load, and 75% precipitation load. The maximum static and dynamic bearing pressure demands are reported for the edge and corners of the basemat. The edge pressure was obtained by averaging the bearing pressures over an edge strip consisting of five rows of the finite element model (not including the corners). The corner pressures were obtained by averaging bearing pressures over a corner grid of 6x6 element.

Design Criteria

Sections 3.8.1.2, 3.8.2.2, 3.8.3.2, 3.8.4.2, and 3.8.5.2 describe codes, standards, and specifications applicable to the design of the RCB (Concrete), RCB (Steel), RB internal structures, RSB, and NI foundation basemat, respectively.

A global ANSYS Finite Element Model (FEM) (addressed in Sections 3.8.1.4.1, 3.8.3.4.1, 3.8.4.4.2, and 3.8.5.4.2) is developed and loaded with various independent loads and load combinations per the applicable codes and standards and solved to produce forces and moments throughout the structure. Sections 3.8.1.3, 3.8.2.3, 3.8.3.3, 3.8.4.3, and 3.8.5.3 describe loads and loading combinations applicable to the

design of NI Common Basemat Structures. The design includes the soil cases shown in Table 3.7.1-6.

The independent loads shown in Table 3E.1-1—Independent Loads Considered in the FEM are applied to the NI common basemat global ANSYS FEM to analyze and evaluate the overall structural response of the NI Common Basemat Structures as described in Section 3.8.1.4, 3.8.2.4, 3.8.3.4, 3.8.4.4, and 3.8.5.4. Additional loads shown in Table 3E.1-2—Independent Loads Not Considered in the FEM and addressed in Sections 3.8.1.3, 3.8.2.3, 3.8.3.3, 3.8.4.3, and 3.8.5.3 are not considered by the ANSYS FEM and are independently added and analyzed for in the design process for completeness.

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Table 3E.1-1—Independent Loads Considered in the FEM

D	Dead Loads
L	Live Loads
J	Post-tensioning Loads
H	Lateral Earth Pressure Loads
F	Hydrostatic Loads
F _b	Buoyancy Loads
E'	Seismic Loads
R _o	Piping Loads (normal operating conditions)
R _a	Piping Loads (accident conditions)
W	Wind Loads (severe environmental)
W _t	Wind Loads (extreme environmental)
P _t	Pressure Loads (test conditions)
P _a (only for containment)	Pressure Loads (accident conditions)
T _a (only for containment)	Temperature Loads (accidental conditions)

Table 3E.1-2—Independent Loads Not Considered in the FEM

G	Relief Valve Loads
R _r	Pipe Rupture Loads
F _a	Compartment Flood Loads
T _o	Temperature Loads (normal operating)
T _t	Temperature Loads (test conditions)
P _v	Containment Wall Pressure Variant Loads
P _a	Sub-compartment pressurization
CL	Construction Loads

Table 3E.1-3—Floor Dead and Live Loads
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Elevation	Room Number	Magnitude of Load		Load Description	Load Type	Application				Area Dead Load (psf)	Area Live Load (psf)
		Metric (kN)	US (kips)			X-Coordinate Metric (m)	US (ft)	Y-Coordinate Metric (m)	US (ft)		
SAFEGUARD BUILDING DIVISION 1											
-9.60M (-31.5ft)	1UJH01-002	122.33	27.50	point	dead	-31.85	-104.50	11.12	36.50		
	1UJH01-006	110.76	24.90	point	dead	-32.92	-108.00	-2.16	-7.10		
	1UJH01-024	104.53	23.50	point	dead	-45.17	-148.20	3.35	11.00		
	1UJH01-026	141.90	31.90	point	dead	-47.40	-155.50	-9.45	-31.00	150	
	1UJH01-008									200	
	1UJH01-005									125	
	1UJH01-027									150	
-5.00M (-16.4ft)	1UJH05-005	233.98	52.60	point	dead	-36.58	-120.50	7.01	23.00		
	1UJH05-008									250	
	1UJH05-026									175	
0.00	1UJH10-001	160	35.97	point-- free action	live						
		170	38.22	point-- free action	live						
	1UJH10-026	415.02	93.30	point	dead	-47.40	-155.50	-5.79	-19.00	150	
		250	56.21	point-- free action	live						
		250	56.21	point-- free action	live						
	1UJH10-004									175	

Table 3E.1-3—Floor Dead and Live Loads
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Elevation	Room Number	Magnitude of Load		Load Description	Load Type	Application				Area Dead Load (psf)	Area Live Load (psf)
		Metric (kN)	US (kips)			X-Coordinate Metric (m)	X-Coordinate US (ft)	Y-Coordinate Metric (m)	Y-Coordinate US (ft)		
+4.70M (+15.4ft)	1UJK14-025	160	35.97	point-- free action	live						
		120	26.98	point-- free action	live						
		120	26.98	point-- free action	live						
	1UJK14-026	150	33.72	point	live	-44.50	-146.00	-5.75	-18.86		
		100	22.48	point	live	-50.29	-165.00	-5.75	-18.86		
	1UJK14-027	130	29.23	point	live	-51.82	-170.00	-10.15	-33.30		
	1UJK14-029									175	
	1UJK14-028									225	
+8.10M (+26.6ft)	1UJK18-024									175	
	1UJK18-025									175	
	1UJK18-026	129.89	29.20	point	dead	-29.87	-98.00	5.49	18.00	225	
		97.42	21.90	point	dead	-31.70	-104.00	12.50	41.00		
	1UJK18-027	104.53	23.50	point	dead	-48.16	-158.00	5.49	18.00	200	
+12.00M (39.4ft)	1UJK22-028	86.30	19.40	point	dead	-47.40	-155.50	-6.40	-21.00	150	
	1UJK22-030									150	
	1UJK22-039									150	
	1UJK22-047									175	
	1UJK22-057									175	

Table 3E.1-3—Floor Dead and Live Loads
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Elevation	Room Number	Magnitude of Load		Load Description	Load Type	Application				Area Dead Load (psf)	Area Live Load (psf)
		Metric (kN)	US (kips)			X-Coordinate		Y-Coordinate			
						Metric (m)	US (ft)	Metric (m)	US (ft)		
	1UJK22-046									175	
	1UJK22-056									175	
	1UJK22-042									175	
	1UJK22-043									175	
	1UJK22-044									175	
	1UJK22-052									175	
	1UJK22-053									175	
	1UJK22-054									175	
	1UJK22-045									175	
	1UJK22-055									175	
+16.80M (55.1ft)	1UJK26-028	100	22.48	point-- free action	live						
	1UJK26-030	89.45	20.11	point	dead	-35.87	-117.70	11.96	39.25	200	
	2UJE26-001	130.24	29.28	point	dead	-30.97	-101.60	12.34	40.50	150	
+21.00M (68.9ft)	1UJK31-030									150	
	1UJE26-001									175	
	2UJE26-001									150	
	1UJE29-002	207.38	46.62	point	dead	-35.59	-116.75	-3.11	-10.20		
	2UJE29-002	207.38	46.62	point	dead	-35.59	-116.75	3.11	10.20		
+24.70M (+81.0ft)	2UJE34-003									225	

Table 3E.1-3—Floor Dead and Live Loads
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Elevation	Room Number	Magnitude of Load		Load Description	Load Type	Application				Area Dead Load (psf)	Area Live Load (psf)
		Metric (kN)	US (kips)			X-Coordinate		Y-Coordinate			
						Metric (m)	US (ft)	Metric (m)	US (ft)		
	1UJK34-025									175	
	1UJK34-031									225	
	1UJE34-002									125	
	2UJE34-002									125	
	1UJE34-023	160	35.97	point	dead	-48.62	-159.51	9.38	30.77	325	
+29.30M (96.1ft)	1UJE39-001	92.08	20.70	point	dead	-30.11	-98.80	-4.51	-14.80	75	100
	2UJE39-001	92.08	20.70	point	dead	-30.11	-98.80	4.57	15.00	75	100
		100	22.48	point-- free action	live	-43.34	-142.19	10.05	32.97		
SAFEGUARD BUILDING DIVISION 2/3											
-9.60M (-31.5ft)	2UJH01-007	122.33	27.50	point	dead	-17.83	-58.50	27.22	89.30		
	2UJH01-009	110.76	24.90	point	dead	-3.35	-11.00	30.21	99.10		
	2UJH01-020	141.90	31.90	point	dead	-15.09	-49.50	46.02	151.00	150	
	2UJH01-024	118.32	26.60	point	dead	-3.20	-10.50	45.05	147.80		
	3UJH01-007	122.33	27.50	point	dead	17.80	58.40	27.22	89.30		
	3UJH01-009	110.76	24.90	point	dead	3.29	10.80	30.21	99.10		
	3UJH01-020	141.90	31.90	point	dead	14.78	48.50	45.11	148.00	150	
	3UJH01-024	118.32	26.60	point	dead	3.05	10.00	45.05	147.80		
	2UJH01-011									225	
	3UJH01-011									225	

Table 3E.1-3—Floor Dead and Live Loads
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Elevation	Room Number	Magnitude of Load		Load Description	Load Type	Application				Area Dead Load (psf)	Area Live Load (psf)	
		Metric (kN)	US (kips)			X-Coordinate		Y-Coordinate				
						Metric (m)	US (ft)	Metric (m)	US (ft)			
-5.00M (-16.4ft)	2UJH05-006	233.98	52.60	point	dead	-14.73	-48.50	35.60	116.00	150		
	3UJH05-006	233.98	52.60	point	dead	14.48	47.50	35.60	116.00	150		
	2UJH05-020									175		
	3UJH05-020									175		
0.00	2UJH10-003	250	56.21	point-- free action	live							
	3UJH10-003	250	56.21	point-- free action	live							
	2UJH10-006	250	56.21	point-- free action	live							
	2UJH10-010	260	58.45	point-- free action	live							
											125	
	2UJH10-020	123.66	27.80	point	dead	-15.70	-51.50	45.11		150		
		415.02	93.30	point	dead	-12.04	-39.50	45.72				
		250	56.21	point-- free action	live							
	3UJH10-006	250	56.21	point-- free action	live							
	3UJH10-020	123.66	27.80	point	dead	16.92	55.50	45.11	148.00	150		
		415.02	93.30	point	dead	12.04	39.50	45.72	150.00			

Table 3E.1-3—Floor Dead and Live Loads
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Elevation	Room Number	Magnitude of Load		Load Description	Load Type	Application				Area Dead Load (psf)	Area Live Load (psf)
		Metric (kN)	US (kips)			X-Coordinate		Y-Coordinate			
						Metric (m)	US (ft)	Metric (m)	US (ft)		
		250	56.21	point-- free action	live						
	2UJH10-002									150	
	3UJH10-002									150	
+4.70M (+15.4ft)	2UJK14-002	160	35.97	point-- free action	live						
	3UJK14-002	160	35.97	point-- free action	live						
+8.10M (+26.6ft)	2UJK18-005									175	
	3UJK18-005									175	
	2UJK18-020									200	
	3UJK18-020									200	
	2UJK18-002	104.53	23.50	point	dead	-22.25	-73.00	25.91	85.00	200	
	3UJK18-002	104.53	23.50	point	dead	23.47	77.00	25.91	85.00	200	
	2UJK18-029									150	
	3UJK18-029									150	
+12.00M (+39.4ft)	2UJK22-028									200	
	3UJK22-028									200	
+16.30M (+53.5ft)	2UJK26-002									225	
	3UJK26-002									225	
	2UJK26-020									175	

Table 3E.1-3—Floor Dead and Live Loads
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Elevation	Room Number	Magnitude of Load		Load Description	Load Type	Application				Area Dead Load (psf)	Area Live Load (psf)
		Metric (kN)	US (kips)			X-Coordinate		Y-Coordinate			
						Metric (m)	US (ft)	Metric (m)	US (ft)		
	3UJK26-020									175	
	2UJK26-030									225	
	2UJK26-046									225	
	3UJK26-005									225	
+21.00M (+68.9ft)	2UJK31-007									150	
	3UJK31-007									150	
	2UJK31-026									150	
	3UJK31-026									150	
	2UJK31-035									150	
	3UJK31-035									150	
	2UJK31-034									150	
	3UJK31-034									150	
	2UJK31-003									150	
	3UJK31-003									150	
	2UJK31-032									150	
	3UJK31-032									150	
	2UJK31-029									150	
	3UJK31-029									150	
	2UJK31-021	160	35.97	point	dead	-20.01	-65.65	47.16	154.72		
	3UJK31-021	160	35.97	point	dead	20.01	65.65	47.16	154.72		

Table 3E.1-3—Floor Dead and Live Loads
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Elevation	Room Number	Magnitude of Load		Load Description	Load Type	Application				Area Dead Load (psf)	Area Live Load (psf)
		Metric (kN)	US (kips)			X-Coordinate		Y-Coordinate			
		Metric (kN)	US (kips)			Metric (m)	US (ft)	Metric (m)	US (ft)		
+28.80M (+94.5ft)										75	100
SAFEGUARD BUILDING DIVISION 4											
-9.60M (-31.5ft)	4UJH01-002	122.33	27.50	point	dead	31.49	103.30	11.13	36.50		
	4UJH01-006	110.76	24.90	point	dead	32.61	107.00	-2.16	-7.10		
	4UJH01-024	104.53	23.50	point	dead	45.11	148.00	3.35	11.00		
	4UJH01-026	141.90	31.90	point	dead	46.18	151.50	-9.45	-31.00	150	
	4UJH01-005									125	
	4UJH01-008									200	
	4UJH01-027									150	
-5.00M (-16.4ft)	4UJH05-005	233.98	52.60	point	dead	36.42	119.50	7.01	23.00		
	4UJH05-012	195.71	44.00	point	dead	31.09	102.00	-10.82	-35.50		
	4UJH05-026									175	
0.00	4UJH10-026	415.02	93.30	point	dead	47.09	154.50	-5.79	-19.00	150	
		332.73	74.80	point	dead	48.31	158.50	-10.06	-33.00		
		250	56.21	point--free action	live						
		250	56.21	point--free action	live						
	4UJH10-001	160	35.97	point--free action	live						
		160	35.97	point--free action	live						
	4UJH10-004									175	
+4.70M (+15.4ft)	4UJK14-027	130	29.23	point	live	51.82	170.00	-10.15	-33.30		

Table 3E.1-3—Floor Dead and Live Loads
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Elevation	Room Number	Magnitude of Load		Load Description	Load Type	Application				Area Dead Load (psf)	Area Live Load (psf)
		Metric (kN)	US (kips)			X-Coordinate		Y-Coordinate			
						Metric (m)	US (ft)	Metric (m)	US (ft)		
		100	22.48	point	live	50.27	164.93	-5.75	-18.86		
	4UJK14-026	150	33.72	point	live	44.50	146.00	-5.75	-18.86		
	4UJK14-025	160	35.97	point--free action	live						
	4UJK14-028									225	
	4UJK14-029									175	
+8.10M (+26.6ft)	4UJK18-024									175	
	4UJK18-025									175	
	4UJK18-026	129.89	29.20	point	dead	29.87	98.00	5.49	18.00	225	
		97.42	21.90	point	dead	31.70	104.00	12.19	40.00		
	4UJK18-027	104.53	23.50	point	dead	47.85	157.00	5.79	19.00	200	
+12.00M (+39.4ft)	4UJK22-028	86.30	19.40	point	dead	45.57	149.50	-6.40	-21.00	150	
	4UJK22-030									150	
	4UJK22-039									150	
	4UJK22-042									175	
	4UJK22-043									175	
	4UJK22-044									175	
	4UJK22-045									175	
	4UJK22-046									175	
	4UJK22-052									175	
	4UJK22-053									175	

Table 3E.1-3—Floor Dead and Live Loads
Sheet 10 of 27

Elevation	Room Number	Magnitude of Load		Load Description	Load Type	Application				Area Dead Load (psf)	Area Live Load (psf)
		Metric (kN)	US (kips)			X-Coordinate Metric (m)	X-Coordinate US (ft)	Y-Coordinate Metric (m)	Y-Coordinate US (ft)		
	4UJK22-054									175	
	4UJK22-055									175	
	4UJK22-056									175	
+16.80M (+55.1ft)	4UJK26-028	100	22.48	point--free action	live						
	4UJK26-030	89.45	20.11	point	dead	35.87	117.70	11.96	39.25	200	
	3UJE26-001	130.24	29.28	point	dead	30.97	101.60	12.34	40.50	150	
+21.00M (+68.9ft)	4UJK29-030									150	
	4UJE26-001									175	
	3UJE26-001									150	
	4UJE29-002	207.38	46.62	point	dead	-35.59	-116.75	-3.11	-10.20		
	3UJE29-002	207.38	46.62	point	dead	-35.59	-116.75	3.11	10.20		
+24.70M (+81.0ft)	4UJK34-025									175	
	4UJK34-030									225	
	4UJK34-031									225	
	3UJE33-002									125	
	4UJE33-002									125	
	4UJE34-023	160	35.97	point	dead	48.62	159.51	9.38	30.77		
+29.30M (+96.1ft)	4UJE39-001	92.08	20.70	point	dead	30.08	98.70	-4.51	-14.80	75	100
	3UJE39-001	92.08	20.70	point	dead	30.08	98.70	4.57	15.00	75	100
		100	22.48	point--free action	live	43.34	142.19	10.05	32.97		

Table 3E.1-3—Floor Dead and Live Loads
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Elevation	Room Number	Magnitude of Load		Load Description	Load Type	Application				Area Dead Load (psf)	Area Live Load (psf)
		Metric (kN)	US (kips)			X-Coordinate		Y-Coordinate			
						Metric (m)	US (ft)	Metric (m)	US (ft)		
FUEL BUILDING											
-9.60M (-31.5ft)	UFA01-078	160.14	36.00	point	live	9.60	31.50	-44.55	-146.12		
	UFA01-010	160.14	36.00	point	live	-22.28	-73.08	-25.76	-84.50		
	UFA01-004									125	
	UFA01-033									125	
	UFA01-085									125	
	UFA01-083									125	
	UFA01-035									125	
	UFA01-095									125	
	UFA01-061									125	
	UFA01-054									125	
	UFA01-082									125	
	UFA01-075									125	
	UFA01-026									325	
	UFA01-038									300	
	UFA01-072									275	
	UFA01-073									275	
	UFA01-088									300	
	UFA01-042									375	
	UFA01-048									325	

Table 3E.1-3—Floor Dead and Live Loads
Sheet 12 of 27

Elevation	Room Number	Magnitude of Load		Load Description	Load Type	Application				Area Dead Load (psf)	Area Live Load (psf)
		Metric (kN)	US (kips)			X-Coordinate		Y-Coordinate			
						Metric (m)	US (ft)	Metric (m)	US (ft)		
	UFA01-049									325	
	UFA01-076									300	
	UFA01-077									300	
	UFA01-097									375	
	UFA01-098									350	
	UFA01-099									350	
	UFA01-024										750
	UFA01-001										125
	UFA01-017										100
	UFA01-051										125
	UFA01-079										100
-6.20M (-20.3ft)	UFA05-026	482.19i	108.40	point	dead	-17.53	-57.50	-43.89	-144.00		
	UFA05-076	482.19	108.40	point	dead	19.05	62.08	-44.32	--145.42		
	UFA05-004									125	
	UFA03-001									125	125
	UFA03-002									125	
	UFA03-007									125	
	UFA03-006									125	
	UFA03-056									125	
	UFA03-051									125	125

Table 3E.1-3—Floor Dead and Live Loads
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Elevation	Room Number	Magnitude of Load		Load Description	Load Type	Application				Area Dead Load (psf)	Area Live Load (psf)
		Metric (kN)	US (kips)			X-Coordinate		Y-Coordinate			
						Metric (m)	US (ft)	Metric (m)	US (ft)		
	UFA03-058									125	
	UFA03-057									125	
	UFA05-054									125	
	UFA03-017										100
	UFA03-051										125
	UFA03-079										100
	UFA05-077										2600
-3.40M (-11.2ft)	UFA06-035	98.75	22.20	point	dead	-2.59	-8.50	-35.02	-115.00	125	
										300	
	UFA06-085	98.75	22.20	point	dead	-6.55	-21.50	-35.02	-115.00	125	
										300	
	UFA06-038									1220	
	UFA06-088									1220	
	UFA06-001									125	125
	UFA06-023									125	
	UFA06-024									125	
	UFA06-045									125	
	UFA06-095									125	
	UFA06-082									125	525
	UFA06-083									125	525

Table 3E.1-3—Floor Dead and Live Loads
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Elevation	Room Number	Magnitude of Load		Load Description	Load Type	Application				Area Dead Load (psf)	Area Live Load (psf)
		Metric (kN)	US (kips)			X-Coordinate		Y-Coordinate			
						Metric (m)	US (ft)	Metric (m)	US (ft)		
	UFA06-075									125	
	UFA06-074									125	
	UFA06-051									125	125
	UFA06-094									125	
	UFA06-084									125	
	UFA05-051										125
	UFA06-017										100
	UFA06-079										100
	UFA06-096										125
0.00	UFA10-084	259.78	58.40	point	dead	7.16	23.50	-33.83	-111.00		
	UFA10-057	230	51.71	point-- free action	live						
	UFA10-015	285	64.07	point--free action	live	-16.17	-53.05	-33.98	-111.48		200
		285	64.07	point--free action	live	-16.17	-53.05	-34.75	-114.01		
		285	64.07	point--free action	live	-16.17	-53.05	-35.52	-116.54		
		285	64.07	point--free action	live	-16.17	-53.05	-36.29	-119.06		
		285	64.07	point--free action	live	-16.17	-53.05	-37.06	-121.59		
		285	64.07	point--free action	live	-16.17	-53.05	-37.83	-124.11		
		285	64.07	point--free action	live	-16.17	-53.05	-38.60	-126.64		
		285	64.07	point--free action	live	-16.17	-53.05	-39.37	-129.17		

Table 3E.1-3—Floor Dead and Live Loads
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Elevation	Room Number	Magnitude of Load		Load Description	Load Type	Application				Area Dead Load (psf)	Area Live Load (psf)
		Metric (kN)	US (kips)			X-Coordinate		Y-Coordinate			
						Metric (m)	US (ft)	Metric (m)	US (ft)		
		1401.19	315.00	point-- free action	live						
	UFA10-002									125	
	UFA10-001									125	125
	UFA10-045									125	
	UFA10-021									125	
	UFA10-022									125	
	UFA10-035									125	
	UFA10-085									125	
	UFA10-007									125	
	UFA10-082									125	
	UFA10-070									125	
	UFA10-071									125	
	UFA10-095									125	
	UFA10-051									125	125
	UFA10-017										100
	UFA10-079										100
+3.70M (+12.1ft)	UFA10-015	100	22.48	point-- free action	live						
		100	22.48	point-- free action	live						

Table 3E.1-3—Floor Dead and Live Loads
Sheet 16 of 27

Elevation	Room Number	Magnitude of Load		Load Description	Load Type	Application				Area Dead Load (psf)	Area Live Load (psf)
		Metric (kN)	US (kips)			X-Coordinate		Y-Coordinate			
						Metric (m)	US (ft)	Metric (m)	US (ft)		
	UFA13-070	1252.17	281.50	point	dead	20.27	66.50	-34.14	-112.00		
	UFA13-071	1252.17	281.50	point	dead	20.27	66.50	-39.62	-130.00		
	UFA15-022									1920	
	UFA13-004									125	
	UFA15-001									125	125
	UFA15-045									125	
	UFA13-057										200
	UFA13-075									125	
	UFA13-056										200
	UFA13-083									125	
	UFA13-082									125	
	UFA13-085									125	
	UFA13-080									125	
	UFA15-096									125	
	UFA13-095									125	
	UFA13-051									125	125
	UFA13-054									125	
	UFA13-072										200
	UFA15-016									125	
	UFA15-002									125	

Table 3E.1-3—Floor Dead and Live Loads
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Elevation	Room Number	Magnitude of Load		Load Description	Load Type	Application				Area Dead Load (psf)	Area Live Load (psf)
		Metric (kN)	US (kips)			X-Coordinate		Y-Coordinate			
						Metric (m)	US (ft)	Metric (m)	US (ft)		
	UFA13-017										100
	UFA13-079										100
+7.40M (+24.3ft)	UFA18-015	125	28.10	point-- free action	live					125	
		125	28.10	point-- free action	live						
	UFA18-004									125	
	UFA18-045									125	
	UFA17-025									125	
	UFA17-053									125	
	UFA17-057										200
	UFA17-017										100
	UFA17-051										125
	UFA17-079										100
	UFA18-001										125
	UFA19-021										1960
+11.10M (+36.4ft)	UFA21-081										200
	UFA21-082										200
	UFA21-083										200
	UFA21-084										200
		300	67.45	point	dead	-12.65	-41.50	-34.15	-112.04		

Table 3E.1-3—Floor Dead and Live Loads
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Elevation	Room Number	Magnitude of Load		Load Description	Load Type	Application				Area Dead Load (psf)	Area Live Load (psf)
		Metric (kN)	US (kips)			X-Coordinate		Y-Coordinate			
						Metric (m)	US (ft)	Metric (m)	US (ft)		
		300	67.45	point	dead	0.29	0.95	-33.39	-109.55		
	UFA21-004									125	
	UFA21-002									125	
	UFA21-001									125	125
	UFA21-045									125	
	UFA21-015									125	
	UFA21-095									125	
	UFA21-051									125	125
	UFA21-053									125	
	UFA21-057										200
	UFA21-056									125	
	UFA21-097	158.35	35.60	point	dead	13.52	44.50	-44.81	-147.00		
	UFA21-017										100
	UFA21-079										100
+14.80M (+48.5ft)	UFA23-014									2450	
	UFA23-018									2600	
	UFA24-004									125	
	UFA24-001									125	125
	UFA24-045									125	
	UFA24-002									125	

Table 3E.1-3—Floor Dead and Live Loads
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Elevation	Room Number	Magnitude of Load		Load Description	Load Type	Application				Area Dead Load (psf)	Area Live Load (psf)
		Metric (kN)	US (kips)			X-Coordinate		Y-Coordinate			
						Metric (m)	US (ft)	Metric (m)	US (ft)		
	UFA23-015									125	
	UFA24-057										200
	UFA24-071									125	
	UFA24-086									125	
	UFA24-085									125	
	UFA24-070									125	
	UFA24-051									125	125
	UFA24-053									125	
	UFA24-017										100
	UFA24-079										100
	UFA15-022										
+19.5M (+64.0ft)	UFA29-015	200	44.96	point	live	-9.03	-29.63	-47.36	-155.38	125	225
		222.76	50.08	Point	Dead	1.83	6.00	-31.91	-104.70		
		222.76	50.08	Point	Dead	1.83	6.00	-41.51	-136.20		
	UFA29-001									125	125
	UFA29-005									125	
	UFA29-045									125	
	UFA29-090									125	225
	UFA29-054									125	
	UFA29-051									125	125

Table 3E.1-3—Floor Dead and Live Loads
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Elevation	Room Number	Magnitude of Load		Load Description	Load Type	Application				Area Dead Load (psf)	Area Live Load (psf)
		Metric (kN)	US (kips)			X-Coordinate		Y-Coordinate			
						Metric (m)	US (ft)	Metric (m)	US (ft)		
+24.20M (+79.4ft)	UFA10-069	470	105.67	point-- free action	live						
		470	105.67	point-- free action	live						
		120	26.98	point-- free action	dead	15.70	51.51	-51.05	-167.49		
		120	26.98	point-- free action	dead	23.95	78.58	-51.05	-167.49		
	UFA29-015	120	26.98	point-- free action	live-max						
		120	26.98	point-- free action	live-min						
	UFA34-010	180	40.47	point	dead	-22.03	-72.26	-27.13	-88.99		
	UFA35-078	180	40.47	point	dead	11.41	37.43	-44.76	-146.85		
	UFA34-001									125	125
	UFA34-045									125	
+34.00M (+111.5ft)	UKA	120	26.98	point-- free action	live	15.80	51.84	-28.95	-94.98	150	100
		120	26.98	point-- free action	live	15.80	51.84	-41.20	-135.17		

Table 3E.1-3—Floor Dead and Live Loads
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Elevation	Room Number	Magnitude of Load		Load Description	Load Type	Application				Area Dead Load (psf)	Area Live Load (psf)
		Metric (kN)	US (kips)			X-Coordinate Metric (m)	X-Coordinate US (ft)	Y-Coordinate Metric (m)	Y-Coordinate US (ft)		
REACTOR BUILDING											
-6.15M (-20.2ft)	UJA04-003	152.50	34.29	point	dead	10.77	35.32	-6.64	-21.77		
		152.50	34.29	point	dead	-10.77	-35.32	-6.64	-21.77		
		127.66	28.70	point	dead	13.66	44.80	-3.40	-11.16		
		127.66	28.70	point	dead	-13.66	-44.80	-3.40	-11.16		
		108.89	24.48	point	dead	12.18	39.97	2.20	7.21		
		108.89	24.48	point	dead	-12.18	-39.97	2.20	7.21		
		108.89	24.48	point	dead	5.11	16.75	12.19	40.00		
		108.89	24.48	point	dead	-5.11	-16.75	12.19	40.00		
		114.14	25.66	point	dead	-10.86	-35.63	7.51	24.64		
		114.14	25.66	point	dead	10.86	35.63	7.51	24.64		
	UJA04-002	1979.36	445.00	pint	dead	4.05	13.29	-9.34	-30.63		
		1979.36	445.00	pint	dead	-5.51	-18.08	-9.78	-32.08		
		1979.36	445.00	pint	dead	-0.63	-2.08	-14.67	-48.13		
-2.30M (-7.5ft)	UJA07-013	110	24.73	point--free action	live						
	UJA07-015	110	24.73	point--free action	live						
	UJA07-016	125	28.10	point--free action	live						
	UJA07-018	234.42	52.70	point	dead	-0.15	-0.50	10.36	34.00		
			195.28	43.90	point	dead	-0.46	-1.50	14.02	46.00	

Table 3E.1-3—Floor Dead and Live Loads
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Elevation	Room Number	Magnitude of Load		Load Description	Load Type	Application				Area Dead Load (psf)	Area Live Load (psf)
		Metric (kN)	US (kips)			X-Coordinate		Y-Coordinate			
						Metric (m)	US (ft)	Metric (m)	US (ft)		
		195.28	43.90	point	dead	-0.46	-1.50	15.55	51.00		
	UJA07-021	226	50.81	point	dead	-5.82	-19.09	-18.25	-59.86	300	
	UJA07-024									400	
	UJA07-026	328	73.74	point	dead	5.82	19.09	-18.25	-59.86	350	
	UJA07-027	328	73.74	point	dead	-2.89	-9.48	-18.25	-59.86	350	
	UJA07-020									325	
	UJA07-023									350	
+1.50M (+4.9ft)	UJA11-016	170	38.22	point--free action	live					175	125
	UJA11-019	636.10	143.00	point	dead	-0.15	-0.50	14.94	49.00		
	UJA11-024	127.66	28.70	point	dead	4.42	14.50	-14.63	-48.00		
		362	81.38	point	dead	9.81	32.18	-14.65	-48.05		
	UJA11-032	155	34.85	point	dead	17.94	58.84	0.26	0.85		
	UJA11-031	155	34.85	point	dead	-17.94	-58.84	0.26	0.85		
	Airlock	300	67.45	point	dead	0.00	0.00	24.24	79.51		
	UJA11-025									175	125
	UJA11-026									175	125
	UJA11-027									175	125
	UJA11-028									175	125
	UJA11-015									175	125
	UJA11-013									175	125

Table 3E.1-3—Floor Dead and Live Loads
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Elevation	Room Number	Magnitude of Load		Load Description	Load Type	Application				Area Dead Load (psf)	Area Live Load (psf)
		Metric (kN)	US (kips)			X-Coordinate Metric (m)	X-Coordinate US (ft)	Y-Coordinate Metric (m)	Y-Coordinate US (ft)		
	UJA11-014									175	125
	UJA11-020									175	125
+5.15M (+16.9ft)	UJA15-013	1098.71	247.00	point	dead	-17.83	-58.50	-8.23	-27.00		
		135	30.35	point	dead	-17.29	-56.71	-1.16	-3.80		
	UJA15-014	1098.71	247.00	point	dead	-16.31	-53.50	10.97	36.00		
		135	30.35	point	dead	-17.29	-56.71	1.16	3.80		
	UJA15-015	1098.71	247.00	point	dead	16.31	53.50	10.97	36.00		
		135	30.35	point	dead	17.29	56.71	1.16	3.80		
	UJA15-016	1098.71	247.00	point	dead	17.53	57.50	-8.23	-27.00		
		135	30.35	point	dead	17.29	56.71	-1.16	-3.80		
	UJA15-002	115.5	25.97	point	dead	-5.70	-18.70	-12.75	-41.82		
	UJA15-005	150	33.72	point	dead	-10.24	-33.59	14.18	46.51		
	UJA15-006	150	33.72	point	dead	10.24	33.59	14.18	46.51		
	UJA15-023	110	24.73	point	live	-2.64	-8.66	-14.34	-47.04		
	UJA15-001	1860	418.17	point	dead	-3.81	-12.50	-5.23	-17.15		
		1860	418.17	point	dead	3.81	12.50	-5.23	-17.15		
	UJA15-021									350	
+8.70M (+28.5ft)	UJA18-015	161	36.20	point	dead	11.12	36.47	14.11	46.28	100	
	UJA18-014	161	36.20	point	dead	-10.75	-35.26	14.35	47.07	100	
	UJA18-020	150	33.72	point	dead	-5.56	-18.24	-13.34	-43.76		

Table 3E.1-3—Floor Dead and Live Loads
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Elevation	Room Number	Magnitude of Load		Load Description	Load Type	Application				Area Dead Load (psf)	Area Live Load (psf)
		Metric (kN)	US (kips)			X-Coordinate		Y-Coordinate			
						Metric (m)	US (ft)	Metric (m)	US (ft)		
	UJA15-021	130	29.23	point	live	2.31	7.58	-12.99	-42.61		
		130	29.23	point	live	3.50	11.48	-14.94	-49.00		
	UJA15-023	130	29.23	point	live	-1.60	-5.25	-12.57	-41.23		
	UJA15-001	410	92.18	point	live	2.25	7.38	-12.33	-40.44		
		130	29.23	point	live	3.50	11.48	-10.38	-34.05		
	UJA18-013									100	
	UJA18-016									100	
+13.80M (+45.3ft)	UJA23-041									300	
	UJA23-013									50	
	UJA23-014									75	
	UJA23-015									75	
	UJA23-016									50	
+19.50M (+64.0ft)	UJA	200	44.96	point	dead	-3.82	-12.53	1.26	4.13		
		200	44.96	point	dead	-3.82	-12.53	-0.15	-0.49		
		200	44.96	point	dead	-3.82	-12.53	-1.71	-5.61		
		200	44.96	point	dead	-3.82	-12.53	-3.14	-10.30		
		200	44.96	point	dead	-3.82	-12.53	-4.68	-15.35		
		200	44.96	point	dead	-3.82	-12.53	-6.24	-20.47		
		200	44.96	point	dead	-3.82	-12.53	-7.75	-25.43		
		200	44.96	point	dead	-3.82	-12.53	-9.15	-30.02		

Table 3E.1-3—Floor Dead and Live Loads
Sheet 25 of 27

Elevation	Room Number	Magnitude of Load		Load Description	Load Type	Application				Area Dead Load (psf)	Area Live Load (psf)
		Metric (kN)	US (kips)			X-Coordinate		Y-Coordinate			
						Metric (m)	US (ft)	Metric (m)	US (ft)		
		200	44.96	point	dead	-3.82	-12.53	-10.51	-34.48		
		200	44.96	point	dead	-3.82	-12.53	-11.62	-38.12		
		200	44.96	point	dead	-3.46	-11.35	3.42	11.22		
		200	44.96	point	dead	-2.59	-8.50	4.63	15.19		
		200	44.96	point	dead	3.82	12.53	1.26	4.13		
		200	44.96	point	dead	3.82	12.53	-0.15	-0.49		
		200	44.96	point	dead	3.82	12.53	-1.71	-5.61		
		200	44.96	point	dead	3.82	12.53	-3.14	-10.30		
		200	44.96	point	dead	3.82	12.53	-4.68	-15.35		
		200	44.96	point	dead	3.82	12.53	-6.24	-20.47		
		200	44.96	point	dead	3.82	12.53	-7.75	-25.43		
		200	44.96	point	dead	3.82	12.53	-9.15	-30.02		
		200	44.96	point	dead	3.82	12.53	-10.51	-34.48		
		200	44.96	point	dead	3.82	12.53	-11.62	-38.12		
		200	44.96	point	dead	3.46	11.35	3.42	11.22		
		200	44.96	point	dead	2.59	8.50	4.63	15.19		
	UJA29-016	685	154.00	point	dead	12.07	39.60	-20.91	-68.60		835
		1125	252.92	point	dead	14.08	46.19	-13.88	-45.54		
		640	143.88	point	dead	8.58	28.15	-9.80	-32.15		
	UJA29-013										835

Table 3E.1-3—Floor Dead and Live Loads
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Elevation	Room Number	Magnitude of Load		Load Description	Load Type	Application				Area Dead Load (psf)	Area Live Load (psf)
		Metric (kN)	US (kips)			X-Coordinate Metric (m)	X-Coordinate US (ft)	Y-Coordinate Metric (m)	Y-Coordinate US (ft)		
		640	143.88	point	dead	-8.58	-28.15	-9.80	-32.15		
		171.87	38.64	point	dead	-7.83	-25.70	-15.78	-51.78		
		171.87	38.64	point	dead	-8.42	-27.62	-14.37	-47.14		
		171.87	38.64	point	dead	-9.83	-32.26	-13.78	-45.22		
		171.87	38.64	point	dead	-11.25	-36.90	-14.37	-47.14		
		171.87	38.64	point	dead	-11.83	-38.82	-15.78	-51.78		
		171.87	38.64	point	dead	-11.25	-36.90	-17.20	-56.42		
		171.87	38.64	point	dead	-9.83	-32.26	-17.78	-58.34		
		171.87	38.64	point	dead	-8.42	-27.62	-17.20	-56.42		
		228.14	51.29	point	dead	4.18	13.70	-16.98	-55.70		
		228.14	51.29	point	dead	-4.8	-13.70	-16.98	-55.70		
	UJA29-023	270	60.70	point	dead	-19.35	-63.48	-16.15	-52.99		
+24.10M (+79.0ft)	UJA34-018	130	29.23	point	dead	-3.98	-13.06	10.53	34.55		
		130	29.23	point	dead	-1.84	-6.04	15.10	49.54		
		130	29.23	point	dead	-6.10	-20.01	13.86	45.47		
	UJA34-014	120	26.98	point	dead	-16.68	-54.72	-12.92	-42.39	275	
		445	100.04	point	dead	-11.97	-39.27	13.81	45.31		
	UJA34-015									275	
+28.50M (+93.5ft)	UJA	300	67.45	point	dead	12.70	41.67	13.86	45.47		835
		150	33.72	point	dead	6.05	19.85	19.10	62.66		

Table 3E.1-3—Floor Dead and Live Loads
Sheet 27 of 27

Elevation	Room Number	Magnitude of Load		Load Description	Load Type	Application				Area Dead Load (psf)	Area Live Load (psf)
		Metric (kN)	US (kips)			X-Coordinate		Y-Coordinate			
						Metric (m)	US (ft)	Metric (m)	US (ft)		
		200	44.96	point	dead	-4.79	-15.72	19.53	64.07		
		230	51.71	point	dead	-9.20	-30.18	9.79	32.12		
		230	51.71	point	dead	9.20	30.18	9.79	32.12		
		650	146.13	point	dead	4.29	14.07	13.56	44.49		
	UJA41-003	128	28.78	point	dead	-10.33	-33.89	-7.43	-24.38		
	UJA41-004	128	28.78	point	dead	-10.33	-33.89	7.43	24.38		
	UJA41-008	128	28.78	point	dead	10.33	33.89	-7.43	-24.38		
	UJA41-007	128	28.78	point	dead	10.33	33.89	7.43	24.38		
+34.45M (+113ft)	SG Platform										1253

Table 3E.1-4—Minimum Factors of Safety for the Nuclear Island Common Basemat Structure

Analysis Case	Sliding			Overturning			Flotation	
	Required	Calculated X-DIR	Calculated Y-DIR	Required	Calculated X-DIR	Calculated Y-DIR	Required	Calculated
5ae-h	1.1	1.1	1.1	1.1	1.7	2.0		
4ue-m	1.1	1.1	1.1	1.1	1.7	1.9		
1n2ue-s	1.1	1.9	1.9	1.1	2.6	2.9		
1n5ae-h	1.1	1.2	1.1	1.1	1.7	2.0		
hfub	1.1	3.8	3.7	1.1	5.6	5.3		
hflb	1.1	4.1	4.0	1.1	6.7	7.7		
hfbe	1.1	3.6	3.8	1.1	6.0	6.7		

Table 3E.1-5—Maximum Static and Dynamic Bearing Pressures for the NI Common Basemat Structure

Analysis Case	Static [ksf] (Dead Load) Edge	Dynamic [ksf] (Seismic + Dead Load)	
		Corner	Edge
1n2ues-cr	23.1	38.0	30.2
1n5aeh-cr	18.9	58.1	27.1
2sn4uem-cr	21.9	46.0	30.5
4uem-cr	22.9	56.2	30.0
5aeh-cr	21.1	58.5	26.8
hfbe-cr	18.8	32.0	22.2
hflb-cr	18.9	31.0	23.6
hfub-cr	18.4	32.2	22.5

Notes:

1. Analysis cases indicated with “-cr” represent the cracked case.