

3.3 Buildings

Design Description

The nuclear island structures include the containment (the steel containment vessel and the containment internal structure) and the shield and auxiliary buildings. The containment, shield and auxiliary buildings are structurally integrated on a common basemat which is embedded below the finished plant grade level. The containment vessel is a cylindrical welded steel vessel with elliptical upper and lower heads, supported by embedding a lower segment between the containment internal structures concrete and the basemat concrete. The containment internal structure is reinforced concrete with structural modules used for some walls and floors. The shield building is reinforced concrete and, in conjunction with the internal structures of the containment building, provides shielding for the reactor coolant system and the other radioactive systems and components housed in the containment. The shield building roof is a reinforced concrete structure containing an integral, steel lined passive containment cooling water storage tank. The auxiliary building is reinforced concrete and houses the safety-related mechanical and electrical equipment located outside the containment and shield buildings.

The portion of the annex building adjacent to the nuclear island is a structural steel and reinforced concrete seismic Category II structure and houses the control support area, non-1E electrical equipment, and hot machine shop.

The radwaste building is a steel framed structure and houses the low level waste processing and storage.

The turbine building is a non-safety related structure that houses the main turbine generator and the power conversion cycle equipment and auxiliaries. There is no safety-related equipment in the turbine building. The turbine building is located on a separate foundation. The turbine building structure is adjacent to the nuclear island structures.

The diesel generator building is a non-safety related structure that houses the two standby diesel engine powered generators and the power conversion cycle equipment and auxiliaries. There is no safety-related equipment in the diesel generator building. The diesel generator building is located on a separate foundation at a distance from the nuclear island structures.

The plant gas system (PGS) provides hydrogen, carbon dioxide, and nitrogen gases to the plant systems as required. The component locations of the PGS are located in the yard areas.

1. The physical arrangement of the nuclear island structures and the annex building is as described in the Design Description of this Section 3.3, and as shown on Figures 3.3-1 through 3.3-14. The physical arrangement of the radwaste building, the turbine building, and the diesel generator building is as described in the Design Description of this Section 3.3.
2. a) The nuclear island structures, including the critical sections listed in Table 3.3-7, are seismic Category I and are designed and constructed to withstand design basis loads, as specified in the Design Description, without loss of structural integrity and the safety-related functions. The design bases loads are those loads associated with:
 - Normal plant operation (including dead loads, live loads, lateral earth pressure loads, and equipment loads, including hydrodynamic loads, temperature and equipment vibration);

- External events (including rain, snow, flood, tornado, tornado generated missiles and earthquake); and
 - Internal events (including flood, pipe rupture, equipment failure, and equipment failure generated missiles).
- b) Site grade level is located relative to floor elevation 100'-0" per Table 3.3-5. Floor elevation 100'-0" is defined as the elevation of the floor at design plant grade.
- c) The containment and its penetrations are designed and constructed to ASME Code Section III, Class MC.⁽¹⁾
- d) The containment and its penetrations retain their pressure boundary integrity associated with the design pressure.
- e) The containment and its penetrations maintain the containment leakage rate less than the maximum allowable leakage rate associated with the peak containment pressure for the design basis accident.
- f) The key dimensions of the nuclear island structures are as defined on Table 3.3-5.
- g) The containment vessel greater than 7 feet above the operating deck provides a heat transfer surface. A free volume exists inside the containment shell above the operating deck.
- h) The containment free volume below elevation 108' provides containment floodup during a postulated loss-of-coolant accident.
3. Walls and floors of the nuclear island structures as defined on Table 3.3-1, except for designed openings and penetrations, provide shielding during normal operations.
4. a) Walls and floors of the annex building as defined on Table 3.3-1, except for designed openings and penetrations, provide shielding during normal operations.
- b) The walls on the outside of the waste accumulation room in the radwaste building provide shielding from accumulated waste.
- c) The walls on the outside of the packaged waste storage room in the radwaste building provide shielding from stored waste.
5. a) Exterior walls and the basemat of the nuclear island have a water barrier up to site grade.
- b) The boundaries between mechanical equipment rooms and the electrical and instrumentation and control (I&C) equipment rooms of the auxiliary building as identified in Table 3.3-2 are designed to prevent flooding of rooms that contain safety-related equipment up to the maximum flood level for each room defined in Table 3.3-2.

1. Containment isolation devices are addressed in subsection 2.2.1, Containment System.

- c) The boundaries between the following rooms, which contain safety-related equipment – passive core cooling system (PXS) valve/accumulator room A (11205), PXS valve/accumulator room B (11207), and chemical and volume system (CVS) room (11209) – are designed to prevent flooding between these rooms.
- 6.
- a) The radiologically controlled area of the auxiliary building between floor elevations 66'-6" and 82'-6" contains adequate volume to contain the liquid volume of faulted liquid radwaste system (WLS) storage tanks. The available room volumes of the radiologically controlled area of the auxiliary building between floor elevations 66'-6" and 82'-6" exceeds the volume of the liquid radwaste storage tanks (WLS-MT-05A, MT-05B, MT-06A, MT-06B, MT-07A, MT-07B, MT-07C, MT-11).
 - b) The radwaste building packaged waste storage room has a volume greater than or equal to 1293 cubic feet.
- 7.
- a) Class 1E electrical cables, fiber optic cables associated with only one division, and raceways are identified according to applicable color-coded Class 1E divisions.
 - b) Class 1E divisional electrical cables and communication cables associated with only one division are routed in their respective divisional raceways.
 - c) Separation is maintained between Class 1E divisions in accordance with the fire areas as identified in Table 3.3-3.
 - d) Physical separation is maintained between Class 1E divisions and between Class 1E divisions and non-Class 1E cables.
 - e) Class 1E communication cables which interconnect two divisions are routed and separated such that the Protection and Safety Monitoring System voting logic is not defeated by the loss of any single raceway or fire area.
8. Equipment labeled as essential targets in Table 3.3-4 and located in rooms identified in Table 3.3-4 are protected from the dynamic effects of postulated pipe breaks.
9. The reactor cavity sump has a minimum concrete thickness as shown on Table 3.3-5 between the bottom of the sump and the steel containment.
10. The shield building roof and the passive containment cooling system (PCS) storage tank support and retain the PCS water. The passive containment cooling system tank has a stainless steel liner which provides a barrier on the inside surfaces of the tank. Leak chase channels are provided over the tank boundary liner welds.
11. Deleted
12. The extended turbine generator axis intersects the shield building.

13. Separation is provided between the structural elements of the turbine, annex, and radwaste buildings and the nuclear island structure. This separation permits horizontal motion of the buildings in a safe shutdown earthquake without impact between structural elements of the buildings.
14. The walls, doors, ceiling, and floors in the main control room, the central alarm station, and the last access control function for access to the protected area are bullet-resistant.
15. Deleted.
16. Secondary security power supply system for alarm annunciator equipment and non-portable communications equipment is located within a vital area.
17. Vital areas are locked and alarmed with active intrusion detection systems that annunciate in the central and secondary alarm stations upon intrusion into a vital area.
18. Deleted.

Inspections, Tests, Analyses, and Acceptance Criteria

Table 3.3-6 specifies the inspections, tests, analyses, and associated acceptance criteria for the buildings.

3. Non-System Based Design Descriptions & ITAAC

Table 3.3-1 Definition of Wall Thicknesses for Nuclear Island Buildings and Annex Building⁽¹⁾				
Wall or Section Description	Column Lines	Floor Elevation or Elevation Range	Concrete Thickness ⁽²⁾⁽³⁾⁽⁴⁾⁽⁵⁾	Applicable Radiation Shielding Wall (Yes/No)
Containment Building Internal Structure				
Shield Wall between Reactor Vessel Cavity and RCDT Room	E-W wall parallel with column line 7	From 71'-6" to 83'-0"	3'-0"	Yes
West Reactor Vessel Cavity Wall	N-S wall parallel with column line N	From 83'-0" to 98'-0"	7'-6"	Yes
North Reactor Vessel Cavity Wall	E-W wall parallel with column line 7	From 83'-0" to 98'-0"	9'-0"	Yes
East Reactor Vessel Cavity Wall	N-S wall parallel with column line N	From 83'-0" to 98'-0"	7'-6"	Yes
West Refueling Cavity Wall	N-S wall parallel with column line N	From 98'-0" to 135'-3"	4'-0"	Yes
North Refueling Cavity Wall	E-W wall parallel with column line 7	From 98'-0" to 135'-3"	4'-0"	Yes
East Refueling Cavity Wall	N-S wall parallel with column line N	From 98'-0" to 135'-3"	4'-0"	Yes
South Refueling Cavity Wall	E-W wall parallel with column line 7	From 98'-0" to 135'-3"	4'-0"	Yes
South wall of west steam generator compartment	Not Applicable	From 103'-0" to 153'-0"	2'-6"	Yes
West wall of west steam generator compartment	Not Applicable	From 103'-0" to 153'-0"	2'-6"	Yes
North wall of west steam generator compartment	Not Applicable	From 103'-0" to 153'-0"	2'-6"	Yes
South wall of pressurizer compartment	Not Applicable	From 103'-0" to 153'-6"	2'-6"	Yes
West wall of pressurizer compartment	Not Applicable	From 107'-2" to 160'-0"	2'-6"	Yes
North wall of pressurizer compartment	Not Applicable	From 107'-2" to 160'-0"	2'-6"	Yes
East wall of pressurizer compartment	Not Applicable	From 118'-6" to 160'-0"	2'-6"	Yes
North-east wall of in-containment refueling water storage tank	Parallel to column line N	From 103'-0" to 135'-3"	2'-6"	No
West wall of in-containment refueling water storage tank	Not applicable	From 103'-0" to 135'-3"	5/8" steel plate with stiffeners	No
South wall of east steam generator compartment	Not Applicable	From 87'-6" to 153'-0"	2'-6"	Yes

1. The column lines and floor elevations are identified and included on Figures 3.3-1 through 3.3-13.
2. These wall (and floor) thicknesses have a construction tolerance of ± 1 inch, except for exterior walls below grade where the tolerance is +12 inches, - 1 inch.
3. For walls that are part of structural modules, the concrete thickness also includes the steel face plates.
4. For floors with steel surface plates, the concrete thickness also includes the plate thickness.
5. Where a wall (or a floor) has openings, the concrete thickness does not apply at the opening.

**3. Non-System Based Design
Descriptions & ITAAC**

Table 3.3-1 (cont.) Definition of Wall Thicknesses for Nuclear Island Buildings and Annex Building⁽¹⁾				
Wall or Section Description	Column Lines	Floor Elevation or Elevation Range	Concrete Thickness⁽²⁾⁽³⁾	Applicable Radiation Shielding Wall (Yes/No)
East wall of east steam generator compartment	Not Applicable	From 94'-0" to 153'-0"	2'-6"	Yes
North wall of east steam generator compartment	Not Applicable	From 87'-6" to 153'-0"	2'-6"	Yes
Shield Building				
Shield Building Cylinder	Not Applicable	From 100'-0" to 251'-6" From 256'-9" to 266'-6"	3'-0" 4'-6"	Yes Yes
Tension Ring	Not Applicable	From 266'-6" to 271'	3'-0"	Yes
Conical Roof	Not Applicable	From 271'-0" to 293'-9"	3'-0" (including 1/2 inch thick steel plate liner on each face)	Yes
PCS Tank External Cylindrical Wall	Not Applicable	From 293'-9" to 328'-9"	2'-0"	Yes
PCS Tank Internal Cylindrical Wall	Not Applicable	From 309'-4" to 329'-0"	1'-6"	Yes
PCS Tank Roof	Not Applicable	328'-9" (Lowest) 329'-0" (Highest)	1'-3"	No
Nuclear Island Basemat	Below shield building	From 60'-6" to containment vessel or 82'-6"	6'-0" to 22'-0" (varies)	No
Auxiliary Building Walls/Floors Radiologically Controlled				
Column Line 1 wall	From I to N	From 66'-6" to 100'-0"	3'-0"	No
Column Line 1 wall	From I to 5'-6" east of L-2	From 100'-0" to 180'-0"	2'-3"	Yes
Column Line 1 wall	From 5'-6" east of L-2 to N	From 100'-0" to 125'-0"	3'-0"	Yes
Column Line 1 wall	From 5'-6" east of L-2 to N	From 125'-0" to 180'-0"	2'-3"	Yes
Column Line 2 wall	From I to K-2	From 66'-6" to 135'-3"	2'-6"	Yes
Column Line 2 wall	From K-2 to L-2	From 66'-6" to 135'-3"	5'-0"	Yes
Column Line 2 wall	From L-2 to N	From 98'-1" to 135'-3"	2'-6"	Yes
Column Line 2 wall	From I to J-1	From 135'-3" to 153'-0"	2'-0"	Yes
Column Line 3 wall	From J-1 to J-2	From 66'-6" to 82'-6"	2'-6"	Yes

**3. Non-System Based Design
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**Table 3.3-1 (cont.)
Definition of Wall Thicknesses for Nuclear Island Buildings and Annex Building⁽¹⁾**

Wall or Section Description	Column Lines	Floor Elevation or Elevation Range	Concrete Thickness⁽²⁾⁽³⁾	Applicable Radiation Shielding Wall (Yes/No)
Column Line 3 wall	From J-1 to J-2	From 100'-0" to 135'-3"	2'-6"	Yes
Column Line 3 wall	From J-2 to K-2	From 66'-6" to 135'-3"	2'-6"	Yes
Column Line 3 wall	From K-2 to L-2	From 66'-6" to 92'-8 1/2"	2'-6"	Yes
Column Line 4 wall	From I to J-1	From 66'-6" to 153'-0"	2'-6"	Yes
Column Line 4 wall	From J-1 to J-2	From 66'-6" to 92'-6"	2'-6"	Yes
Column Line 4 wall	From J-1 to J-2	From 107'-2" to 135'-3"	2'-6"	Yes
Column Line 4 wall	From J-2 to K-2	From 66'-6" to 135'-3"	2'-6"	Yes
Column Line 4 wall	From I to intersection with shield building wall	From 135'-3" to 180'-0"	2'-0"	Yes
Column Line 5 wall	From I to shield building; with opening east of J-1 (below 107'-2" floor).	From 66'-6" to 160'-6"	2'-0"	Yes
Column Line 7.1 wall	From I to 8' east of J-1	From 66'-6" to 82'-6"	2'-0"	Yes
Column Line 7.2 wall	From I to 5'-6" east of J-1	From 66'-6" to 100'-0"	2'-0"	Yes
Column Line I wall	From 1 to 7.3	From 66'-6" to 100'-0"	3'-0"	No
Column Line I wall	From 1 to 4	From 100'-0" to 180'-0"	2'-0"	Yes
Column Line I wall	From 4 to 5	From 100'-0" to 160'-6"	2'-0"	No
Column Line J-1 wall	From 1 to 2	From 82'-6" to 100'-0"	2'-0"	Yes
Column Line J-1 wall	From 2 to 4	From 66'-6" to 135'-3"	2'-6"	Yes
Column Line J-1 wall	From 2 to 4	From 135'-3" to 153'-0"	2'-0"	Yes
Column Line J-1 wall	From 4 to shield building	From 66'-6" to 107'-2"	2'-0"	Yes
Column Line J-2 wall	From 2 to 4	From 66'-6" to 135'-3"	2'-6"	Yes
Column Line J-2 wall	From 4 to intersection with shield building wall	From 66'-6" to 135'-3"	2'-0"	Yes
Column Line K-2 wall	From 2 to 4	From 66'-6" to 135'-3"	4'-9"	Yes
Column Line L-2 wall	From 2 to 4	From 66'-6" to 135'-3"	4'-0"	Yes
Column Line N wall	From 1 to 2	From 66'-6" to 100'-0"	3'-0"	No

**3. Non-System Based Design
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**Table 3.3-1 (cont.)
Definition of Wall Thicknesses for Nuclear Island Buildings and Annex Building⁽¹⁾**

Wall or Section Description	Column Lines	Floor Elevation or Elevation Range	Concrete Thickness⁽²⁾⁽³⁾	Applicable Radiation Shielding Wall (Yes/No)
Column Line N wall	From 1 to 12'-9" north of 1	From 100'-0" to 125'-0"	3'-9"	No
Column Line N wall	From 1 to 12'-9" north of 1	From 125'-0" to 135'-0"	2'-0"	No
Column Line N wall	From 12'-9" north of 1 to 2	From 100'-0" to 118'-2 1/2"	3'-0"	No
Column Line N wall	From 12'-9" north of 1 to 2	From 118'-2 1/2" to 135'-3"	2'-0"	No
Column Line N wall	From 1 to 2	From 118'-2 1/2" to 135'-3"	2'-0"	Yes
Column Line N wall	From 2 to 4	From 66'-6" to 98'-1"	3'-0"	No
Column Line N wall	From 2 to 4	From 98'-1" to 135'-3"	5'-6"	Yes
Column Line N wall	From 1 to 4	From 135'-3" to 180'-0"	2'-0"	Yes
Labyrinth Wall between Col. Line 3 and 4 and J-1 to 7'-3" from J-2	Not Applicable	From 82'-6" to 92'-6"	2'-6"	Yes
N-S Shield Wall (low wall)	Between K-2 and L-2 extending from column line 1 north	From 100'-0" to 107'-2"	2'-6"	Yes
N-S Shield Wall	Between K-2 and L-2 extending from column line 1 north	From 100'-0" to 125'-0"	2'-3"	Yes
E-W Shield Wall	Between 1 and 2 extending from column line N east	From 100'-0" to 125'-0"	2'-9"	Yes
Auxiliary Area Basemat	From 1-7.3 and I-N, excluding shield building	From 60'-6" to 66'-6"	6'-0"	No
Floor	From 1 to 2 and I to N	82'-6"	2'-0"	Yes
Floor	From 2 to 4 and J-1 to J-2	82'-6"	2'-0"	Yes
Floor	From 4 to 5 and J-1 to J-2	82'-6"	0'-9"	Yes
Pipe Chase Floor	From 2 to 5 and J-1 to J-2	92'-6"	2'-0"	Yes
Floor	From 2 to 3 and J-2 to K-2	90'-3"	3'-0"	Yes
Floor	From 3 to 4 and J-2 to K-2	92'-6"	2'-0"	Yes
Floor	From 4 to 7.3 and I to J-1	82'-6"	2'-0"	Yes
Floor	From 1 to 2 and I to N	100'-0"	3'-0"	Yes
Floor	From 2 to 4 and K-2 to L-2	92'-8 1/2"	3'-2 1/2"	Yes

**3. Non-System Based Design
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Table 3.3-1 (cont.) Definition of Wall Thicknesses for Nuclear Island Buildings and Annex Building⁽¹⁾				
Wall or Section Description	Column Lines	Floor Elevation or Elevation Range	Concrete Thickness⁽²⁾⁽³⁾	Applicable Radiation Shielding Wall (Yes/No)
Floor	From I to J-2 and 4 to intersecting vertical wall before column line 5	107'-2"	2'-0"	Yes
Floor	From I to shield building wall and from intersecting vertical wall before column line 5 to column line 5	105'-0"	0'-9"	Yes
Floor	From 1 to 10'-0" north of 1 and L-2 to N	125'-0"	3'-0"	Yes
Floor	From 10'-0" north of 1 to 2 and L-2 to N	118'-2 1/2"	2'-0"	Yes
Floor	From 3 to 4 and J-2 to K-2	117'-6"	2'-0"	Yes
Floor	From 2 to 4 and I to J-1	153'-0"	0'-9"	Yes
Roof	From 1 to 4 and I to N	180'-0"	1'-3"	Yes
Floor	From 4 to short of column line 5 and from I to intersection with shield building wall	135'-5"	0'-9"	Yes
Floor	From short of column line 5 to column line 5 and from I to intersection with shield building wall	133'-0"	0'-9"	Yes
Auxiliary Building Walls/Floors Non-Radiologically Controlled				
Column Line 11 wall	From I to Q	From 66'-6" to 100'-0"	3'-0"	No
Column Line 11 wall	From I to Q	From 100'-0" to 117'-6"	2'-0"	Yes
Column Line 11 wall	From I to L	From 117'-6" to 153'-0"	2'-0"	Yes
Column Line 11 wall	From L to M	From 117'-6" to 135'-3"	4'-0"	Yes
Column Line 11 wall	From M to P	From 117'-6" to 135'-3"	2'-0"	Yes
Column Line 11 wall	From P to Q	From 117'-6" to 135'-3"	4'-0"	Yes
Column Line 11 wall	From L to Q	From 135'-3" to 153'-0"	2'-0"	Yes
Column Line 7.3 wall	From I to shield building	From 66'-6" to 100'-0"	3'-0"	Yes
Column Line 7.3 wall	From I to shield building	From 100'-0" to 160'-6"	2'-0"	No

**3. Non-System Based Design
Descriptions & ITAAC**

Table 3.3-1 (cont.) Definition of Wall Thicknesses for Nuclear Island Buildings and Annex Building⁽¹⁾				
Wall or Section Description	Column Lines	Floor Elevation or Elevation Range	Concrete Thickness⁽²⁾⁽³⁾	Applicable Radiation Shielding Wall (Yes/No)
Column Line I wall	From 7.3 to 11	From 66'-6" to 100'-0"	3'-0"	No
Column Line I wall	From 7.3 to 11	From 100'-0" to 153'-0"	2'-0"	No
Column Line I wall	From 5 to 7.3	From 100'-0" to 160'-6"	2'-0"	No
Column Line J wall	From 7.3 to 11	From 66'-6" to 117'-6"	2'-0"	No
Column Line K wall	From 7.3 to 11	From 60'-6" to 135'-3"	2'-0"	Yes
Column Line L wall	From shield building wall to 11	From 60'-6" to 153'-0"	2'-0"	Yes
Column Line M wall	From shield building wall to 11	From 66'-6" to 153'-0"	2'-0"	Yes
Column Line P wall	From shield building wall to 11	From 66'-6" to 153'-0"	2'-0"	Yes
Column Line Q wall	From shield building wall to 11	From 66'-6" to 100'-0"	3'-0"	No
Column Line Q wall	From shield building wall to 11	From 100'-0" to 153'-0"	2'-0"	Yes
Column Line 9.2 wall	From I to J and K to L	From 117'-6" to 135'-3"	2'-0"	Yes
Labyrinth Wall between Column Line 7.3 and 9.2 and J to K	J to K	From 117'-6" to 135'-3"	2'-0"	Yes
Auxiliary Area Basemat	From 7.3-11 and I-Q, excluding shield building	From 60'-6" to 66'-6"	6'-0"	No
Floor	From 5 to 7.3 and I to shield building wall	100'-0"	2'-0"	Yes
Floor	From K to L and shield building wall to column line 10	100'-0"	0'-9"	Yes
Main Control Room Floor	From 9.2 to 11 and I to L	117'-6"	2'-0"	Yes
Floor	Bounded by shield bldg, 7.3, J, 9.2 and L	117'-6"	2'-0"	Yes
Floor	From 9.2 to 11 and L to Q	117'-6"	2'-0"	Yes
Floor	From 5 to 7.3 and from I to intersection with shield building wall	135'-3"	0'-9"	Yes
Annex Building				
Column line 2 wall	From E to H	From 107'-2" to 135'-3"	19 3/4"	Yes
Column line 4 wall	From E to H	From 107'-2" to 162'-6" & 166'-0"	2'-0"	Yes

**3. Non-System Based Design
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Table 3.3-1 (cont.) Definition of Wall Thicknesses for Nuclear Island Buildings and Annex Building⁽¹⁾				
Wall or Section Description	Column Lines	Floor Elevation or Elevation Range	Concrete Thickness⁽²⁾⁽³⁾	Applicable Radiation Shielding Wall (Yes/No)
N-S Shield Wall between E and F	From 2 to 4	From 107'-2" to 135'-3"	1'-0"	Yes
Column line 4.1 wall	From E to H	From 107'-2" to 135'-3"	2'-0"	Yes
E-W Labyrinth Wall between column line 7.1 and 7.8 and G to H	Not Applicable	From 100'-0" to 112'-0"	2'-0"	
N-S Labyrinth Wall between column line 7.8 and 9 and G to H	Not Applicable	From 100'-0" to 112'-0"	2'-0"	
E-W Labyrinth Wall between column line 7.1 and 7.8 and G to H	Not Applicable	From 100'-0" to 112'-0"	2'-0"	Yes
N-S Shield Wall on Column line. F	From 4.1 North	From 100'-0" to 117'-6"	1'-0"	Yes
Column Line 9 wall	From E to connecting wall between G and H	From 107'-2" to 117'-6"	2'-0"	Yes
Column Line E wall	From 9 to 13	From 100'-0" to 135'-3"	2'-0"	Yes
Column Line 13 wall	From E to I.1	From 100'-0" to 135'-3"	2'-0"	Yes
Column Line I.1 wall	From 11.09 to 13	From 100'-0" to 135'-3"	2'-0"	Yes
Corridor Wall between G and H	From 9 to 13	From 100'-0" to 135'-3"	1'-6"	Yes
Column Line 9 wall	From I to H	From 117'-6" to 158'-0"	2'-0"	Yes
Floor	2 to 4 from shield wall between E and F to column line H	135'-3"	0'-6"	Yes
Floor	From 4 to 4.1 and E to H	135'-3"	1'-0"	Yes
Floor	From 9 to 13 and E to I.1	117'-6"	0'-6"	Yes
Floor	From 9 to 13 and E to I.1	135'-3"	0'-8"	Yes
Containment Filtration Rm A (North Wall)	Between column line E to H	From 135'-3" to 158'-0"	1'-0"	Yes
Containment Filtration Rm A (East wall)	Between column line E to F	From 135'-3" to 158'-0"	1'-0"	Yes
Containment Filtration Rm A (West wall)	Between column line G to H	From 135'-3" to 158'-0"	1'-0"	Yes
Containment Filtration Rm A (Floor)	Between column line E to H	135'-3"	1'-0"	Yes
Containment Filtration Rm B (Floor)	Between column line E to H	146'-3"	0'-6"	Yes
Containment Filtration Rm B (West wall)	Between column line G to H	From 146'-3" to 158'-0"	1'-0"	Yes

Table 3.3-1 (cont.) Definition of Wall Thicknesses for Nuclear Island Buildings and Annex Building⁽¹⁾				
Wall or Section Description	Column Lines	Floor Elevation or Elevation Range	Concrete Thickness⁽²⁾⁽³⁾	Applicable Radiation Shielding Wall (Yes/No)
Turbine Building				
Wall between I.2 and I.1	From 11.05 to 11.2	From 100'-0" to 161'-0"	2'-0"	No
Column Line 11.2 Wall	From 1'-2" off I.1 to 2'-4" Past R	From 100'-0" to 161'-0"	2'-0"	No
Wall 2'-4" Past R	From 11 to 11.2	From 100'-0" to 161'-0"	2'-0"	No
Wall 11	From 11'-0" off Q to 2'-4" Past R	From 100'-0" to 161'-0"	2'-0"	No

Table 3.3-2 Nuclear Island Building Room Boundaries Required to Have Flood Barrier Floors and Walls		
Boundary/ Maximum Flood Level (inches)	Between Room Number to Room Number	
	Room with Postulated Flooding Source	Adjacent Room
Floor/36	12306	12211
Floor/3	12303	12203/12207
Floor/3	12313	12203/12207
Floor/1	12300	12201/12202/12207 12203/12204/12205
Floor/3	12312	12212
Wall/36	12306	12305
Floor/1	12401	12301/12302/12303 12312/12313
Wall/1	12401	12411/12412
Floor/36	12404	12304
Floor/4	12405	12305
Floor/36	12406	12306
Wall/36	12404	12401
Wall/1	12421	12452
Floor/3	12501	12401/12411/12412
Floor/3	12555	12421/12423/12422
Wall/36	12156/12158	12111/12112

Table 3.3-3 Class 1E Divisions in Nuclear Island Fire Areas				
Fire Area Number	Class 1E Divisions			
	A	C	B	D
Auxiliary Building Radiologically Controlled				
1200 AF 01	Yes	Yes	–	–
1204 AF 01	Yes	–	–	–
Auxiliary Building Non-Radiologically Controlled				
1200 AF 03	–	–	Yes	Yes
1201 AF 02	–	–	Yes	–
1201 AF 03	–	–	–	Yes
1201 AF 04	–	–	Yes	Yes
1201 AF 05	–	–	Yes	Yes
1201 AF 06	–	–	Yes	Yes
1202 AF 03	–	Yes	–	–
1202 AF 04	Yes	–	–	–
1220 AF 01	–	–	Yes	Yes
1220 AF 02	–	–	–	Yes
1230 AF 01	Yes	Yes	–	–
1230 AF 02	–	–	Yes	Yes
1240 AF 01	Yes	Yes	–	–
1242 AF 02	Yes	–	–	–

Note: Dash (–) indicates not applicable.

Table 3.3-4 NI Rooms with Pipe Whip Restraints and Corresponding Hazard Sources and Essential Targets				
Room Number	Room Description	Pipe Whip Restraint	Hazard Source/Room	Essential Target Description/Room
11201	Steam Generator Compartment-01, Below the Lower Manway	PWR-RCS002	Reactor Coolant System (RCS)-Pressurizer Spray Line, 4" L110A: Terminal End Break at RCS Cold Leg L002A.	Raceways and cables. Passive Core Cooling System (PXS) containment level instrumentation. Steam Generator System (SGS) level instrumentation. RCS pressurizer instrumentation. Reactor coolant loop (RCL) (steam generator, pumps, hot leg, and cold legs) and branch line piping/valves.
		PWR-RCS003	RCS-Pressurizer Spray Line, 4" L106: Terminal End Break at RCS Cold Leg L002B.	Raceways and cables. PXS containment level instrumentation. SGS level instrumentation. RCS pressurizer instrumentation. RCL branch line piping/valves.
11204	Steam Generator Access Room	PWR-CVS004	Chemical and Volume Control System (CVS) Letdown Line, 3" L002: Terminal End Break at In-Line Anchor.	SGS blowdown and drain piping. RCS pressurizer level piping. Raceways and cables. PXS containment level instrumentation.
11209 Chase	Pipe Chase to CVS Equipment Room	PWR-SGS004	SGS-Blowdown Line, 4" L009A: Terminal End Break at Containment Penetration P27.	SGS blowdown piping (L009B). CVS makeup piping (L056). CVS letdown piping (L049). CVS hydrogen supply piping (L062). Liquid Radwaste System (WLS) containment sump piping (L072).

Table 3.3-4 (cont.)				
NI Rooms with Pipe Whip Restraints and Corresponding Hazard Sources and Essential Targets				
Room Number	Room Description	Pipe Whip Restraint	Hazard Source/Room	Essential Target Description/Room
		PWR-SGS008	SGS-Blowdown Line, 4" L009B: Terminal End Break at Containment Penetration P28.	CVS makeup piping (L056). CVS letdown piping (L049). CVS hydrogen supply piping (L062).
		PWR-CVS056	CVS-Makeup Line, 3" L056: Terminal End Break at In-Line Anchor.	SGS blowdown piping (L009B). CVS makeup valve (CVS-V091), (Room 11300).
11300	Maintenance Floor	PWR CVS047 A/B	CVS-Letdown Line, 2" L049: Terminal End Break at inlet to Valve V059.	Raceways and cables (Rooms 11300 and 11400). SGS MB01 level instrumentation piping (Room 11400). CVS makeup valves (CVS-V091 and V100). CVS hydrogen supply valves (CVS-V065, V094, V095, and V096). WLS containment sump valve (WLS-V055). RCS pressurizer instrumentation.
11301	Steam Generator Compartment-01, Lower Manway Area	PWR-RCS001 A/B	CVS-Makeup Line, 3" RCS L112, Terminal End Break at Steam Generator MB01.	Steam generator MB01 support. RCS Passive Residual Heat Removal (PRHR) Heat Exchanger (HX) return piping (L113).
		PWR-SGS003	SGS- SG Blowdown 4" SGS-L009A (Room 11401)	Raceways and cables (Room 11201). PXS containment level instrumentation (Room 11201). SGS level instrumentation (Room 11201). RCS pressurizer instrumentation (Room 11201). RCL (steam generator, pumps, hot leg, and cold legs) and branch line piping/valves (Room 11201). Steam generator MB01 support. RCS PRHR return piping (L113).

Table 3.3-4 (cont.)				
NI Rooms with Pipe Whip Restraints and Corresponding Hazard Sources and Essential Targets				
Room Number	Room Description	Pipe Whip Restraint	Hazard Source/Room	Essential Target Description/Room
11302	Steam Generator Compartment-02, Lower Manway Area	PWR-SGS007	SGS- SG Blowdown 4" SGS-L009B (Room 11402).	SGS level instrumentation (Rooms 11202, 11302). RCL and drain line piping/valves (Rooms 11202, 11302). Steam generator MB02 support (Rooms 11202, 11302). Raceways and cables (Rooms 11202, 11302). PXS containment recirculation screen (Room 11202).
11400	Maintenance Floor Mezzanine	PWR-SGS002 A/B/C	SGS-Startup Feedwater Line, 6" L005A: Terminal End Break at Containment Penetration P44.	PXS PRHR HX ME01 upper head. PXS PRHR HX ME01 upper head vent and drain piping and valves (PXS-V102A/B). SGS MB01 level instrumentation piping. Raceways and cables.
11402	Steam Generator Compartment-02, Tube Sheet Area	PWR-SGS006A/B	SGS-Startup Feedwater Line, 6" L005B: Terminal End Break at Containment Penetration P45 (Room 11400).	Steam generator MB02 and supports. Primary Sampling System (PSS) core makeup tank (CMT) (MT02B) sample piping and valves (PSS V005B/C), (Room 11400). PXS CMT MT02B vent piping and valve (PXS-V030B), (Room 11400). PXS CMT MT02B balance line piping and valve (PXS- V002B), (Room 11400). PXS CMT MT02B sample line piping and valve (PXS- V010B), (Room 11400). PXS CMT MT02B makeup line piping (PXS-L012B), (Room 11400). PXS CMT MT02B sample line piping (PXS-L011B), (Room 11400). Raceways and cables, (Rooms 11400 and 11402).

Table 3.3-4 (cont.)				
NI Rooms with Pipe Whip Restraints and Corresponding Hazard Sources and Essential Targets				
Room Number	Room Description	Pipe Whip Restraint	Hazard Source/Room	Essential Target Description/Room
11503	Upper Pressurizer Compartment	PWR-RCS006	RCS-Pressurizer Spray Line, 4" L215: Terminal End Break at Pressurizer Nozzle.	<p>ADS Stage 1, 2, and 3 valves (RCS-V001B, RCS-V002B, RCSV003B, RCS-V011B, RCS-V012B, and RCS-V013B), (Room 11603).</p> <p>ADS Stage 1, 2, and 3 valves (RCS-V001A, RCS-V002A, RCSV003A, RCS-V011A, RCS-V012A, and RCS-V013A), (Room 11703).</p> <p>ADS Stage 1, 2, and 3 support steel (Rooms 11503, 11603, and 11703).</p> <p>RCS pressurizer support steel (Room 11503).</p>
11601	Steam Generator-01, Feedwater Nozzle Area	PWR-SGS001	SGS-Startup Feedwater Line, 6" L005A: Terminal End Break at Steam Generator MB01 Nozzle.	<p>RCS head vent piping/valves.</p> <p>RCS ADS stage 1, 2, 3 discharge header (RCS-L064B).</p> <p>SGS level instrumentation piping (Rooms 11601, 11501, 11401, 11301, and 11201).</p> <p>RCS ADS stage 4 valves (RCS-V004A, RCS-V004C, RCS-V014A, and RCS-V014C), (Room 11401).</p> <p>Raceways and cables (Rooms 11601, 11501, 11401, 11301, 11201, 11603, and 11703).</p> <p>Steam generator MB01 supports (Rooms 11601, 11401, 11301, and 11201).</p> <p>RCL (steam generator, pumps, hot leg, and cold legs) and branch line piping/valves (Rooms 11601, 11501, 11401, 11301, and 11201).</p>

Table 3.3-4 (cont.) NI Rooms with Pipe Whip Restraints and Corresponding Hazard Sources and Essential Targets				
Room Number	Room Description	Pipe Whip Restraint	Hazard Source/Room	Essential Target Description/Room
				RCS ADS Stage 1, 2, and 3 piping, valves and support steel (Rooms 11503, 11603, and 11703). RCS pressurizer support steel (Room 11503). RCS pressurizer spray line (Room 11503). RCS pressurizer level instrumentation (Room 11503).
		PWR-SGS021	SGS-Main Feedwater Line, 16" L003A: Terminal End Break at Steam Generator MB01 Nozzle.	RCS ADS stage 1, 2, 3 discharge header (RCS-L064B). SGS level instrumentation piping (Rooms 11601, 11501, 11401, 11301, and 11201). RCS ADS stage 4 valves (RCS-V004A, RCS-V004C, RCS-V014A, and RCS-V014C), (Room 11401). Raceways and cables (Rooms 11601, 11501, 11401, 11301, 11201, 11603, and 11703). Steam generator MB01 supports (Rooms 11601, 11401, 11301, and 11201). RCL and branch line piping/valves (Rooms 11601, 11501, 11401, 11301, and 11201). RCS ADS Stage 1, 2, and 3 piping, valves and support steel (Rooms 11503, 11603, and 11703). RCS pressurizer support steel (Room 11503). RCS pressurizer spray line (Room 11503). RCS pressurizer level instrumentation (Room 11503).

Table 3.3-4 (cont.)				
NI Rooms with Pipe Whip Restraints and Corresponding Hazard Sources and Essential Targets				
Room Number	Room Description	Pipe Whip Restraint	Hazard Source/Room	Essential Target Description/Room
11602	Steam Generator-02, Feedwater Nozzle Area	PWR-SGS005	SGS-Startup Feedwater Line, 6" L005B: Terminal End Break at Steam Generator MB02 Nozzle.	SGS level instrumentation piping (Rooms 11602, 11502, 11402, 11302, and 11202). RCS ADS stage 4 valves (RCS-V004B, RCS-V004D, RCS-V014B, and RCS-V014D), (Room 11402). Raceways and cables (Rooms 11602, 11502, 11402, 11302, 11202). Steam generator MB02 supports (Rooms 11602, 11402, 11302, and 11202). RCL and branch line piping/valves (Rooms 11602, 11502, 11402, 11302, and 11202). PXS containment recirculation screen (Room 11202).
		PWR-SGS022	SGS-Main Feedwater line, 16" L003B: Terminal End Break at Steam Generator MB02 Nozzle.	SGS level instrumentation piping (Rooms 11602, 11502, 11402, 11302, and 11202). RCS ADS stage 4 valves (RCS-V004B, RCS-V004D, RCS-V014B, and RCS-V014D), (Room 11402). Raceways and cables (Rooms 11602, 11502, and 11402). Steam generator MB02 supports (Rooms 11602, 11402, 11302, 11202). RCL and branch line piping/valves (Rooms 11602, 11502, 11402, 11302, and 11202). PXS containment recirculation screen (Room 11202).

Table 3.3-4 (cont.)				
NI Rooms with Pipe Whip Restraints and Corresponding Hazard Sources and Essential Targets				
Room Number	Room Description	Pipe Whip Restraint	Hazard Source/Room	Essential Target Description/Room
11603	Lower ADS Valve Area	PWR-RCS108 A/B	RCS-Automatic Depressurization System Stage 1 Line, 4" L010B: Terminal End Break at Inlet to Valve RCS V011B.	ADS Stage 2 and 3 valves (RCS-V002B, RCS-V003B, RCS-V012B, and RCS-V013B). ADS Stage 1, 2, and 3 support steel (Rooms 11503, 11603, and 11703). RCS pressurizer support steel (Room 11503). Raceways and cables (Rooms 11603 and 11703).
		PWR-RCS107	RCS-Automatic Depressurization System Stage 1 Line, 4" L010B: Terminal End Break at Outlet of 14x4" Tee.	RCS ADS Stage 3 valve (RCS-V013B). ADS Stage 1, 2, and 3 support steel (Rooms 11503, 11603, and 11703). RCS pressurizer support steel (Room 11503). Raceways and cables (Rooms 11603 and 11703).
11703	Upper ADS Valve Area	PWR-RCS106 A/B	RCS-Automatic Depressurization System Stage 1 Line, 4" L010A: Terminal End Break at Inlet to Valve RCS V011A.	RCS ADS Stage 2 and 3 valves (RCS-V002A, RCS-V003A, RCS-V012A, and RCS-V013A). ADS Stage 1, 2, and 3 support steel (Rooms 11503, 11603, and 11703). RCS pressurizer support steel (Room 11503). Raceways and cables (Rooms 11603, 11703).
		PWR-RCS105	RCS-Automatic Depressurization System Stage 1 Line, 4" L010A: Terminal End Break at Outlet of 14x4" Tee.	ADS Stage 1, 2, and 3 support steel (Rooms 11503, 11603, 11703). RCS ADS Stage 3 valve (RCS-V013A). RCS pressurizer support steel (Room 11503). Raceways and cables (Rooms 11603, 11703).
12244	Lower Annulus Valve Area	PWR-CVS061	CVS-Makeup Line, 3" L131: Terminal End Break at In-Line Anchor.	CVS makeup valve (CVS-V090) and WLS containment isolation valve WLS-V057.

Table 3.3-5 Key Dimensions of Nuclear Island Building Features			
Key Dimension	Reference Dimension (Figure 3.3-14)	Nominal Dimension	Tolerance
Distance between Outside Surface of walls at Column Line I & N when Measured at Column Line 1	X1	91 ft-0 in	+3 ft -1 ft
Distance from Outside Surface of wall at Column Line 1 to Column Line 7 when Measured at Column Line I	X2	138 ft-0 in	+3 ft -1 ft
Distance from Outside Surface of wall at Column Line 11 to Column Line 7 when Measured at Column Line I	X3	118 ft-0 in	+3 ft -1 ft
Distance between Outside Surface of walls at Column Line I & Q when Measured at Column Line 11	X4	117 ft-6 in	+3 ft -1 ft
Distance from Outside Surface of wall at Column Line Q to Column Line N when Measured at Column Line 11	X5	29 ft-0 in	+3 ft -1 ft
Distance between Outside Surface of shield building wall to shield building centerline when Measured on West Edge of Shield Building	X6	72 ft-6 in	+3 ft -1 ft
Distance between shield building centerline to Reactor Vessel centerline when Measured along Column Line N in North-South Direction	X7	7 ft-6 in	± 3 in
Distance from Bottom of Containment Sump to Top Surface of Embedded Containment Shell	–	2 ft-8 in	± 3 in
Distance from top of Basemat to Design Plant Grade	–	33 ft-6 in	± 1 ft
Distance of Design Plant Grade (Floor elevation 100'-0") relative to Site Grade	–	0 ft	± 3 ft-6 in
Distance from Design Plant Grade to Top Surface of Shield Building Roof	–	229 ft-0 in	± 1 ft

Table 3.3-6 Inspections, Tests, Analyses, and Acceptance Criteria		
Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
<p>1. The physical arrangement of the nuclear island structures and the annex building is as described in the Design Description of this Section 3.3 and Figures 3.3-1 through 3.3-14. The physical arrangement of the radwaste building, the turbine building, and the diesel generator building is as described in the Design Description of this Section 3.3.</p>	<p>An inspection of the nuclear island structures, the annex building, the radwaste building, the turbine building, and the diesel generator building will be performed.</p>	<p>The as-built nuclear island structures, the annex building, the radwaste building, the turbine building, and the diesel generator building conform with the physical arrangement as described in the Design Description of this Section 3.3 and Figures 3.3-1 through 3.3-14.</p>
<p>2.a) The nuclear island structures, including the critical sections listed in Table 3.3-7, are seismic Category I and are designed and constructed to withstand design basis loads as specified in the Design Description, without loss of structural integrity and the safety-related functions.</p>	<p>i) An inspection of the nuclear island structures will be performed. Deviations from the design due to as-built conditions will be analyzed for the design basis loads.</p>	<p>i.a) A report exists which reconciles deviations during construction and concludes that the as-built containment internal structures, including the critical sections, conform to the approved design and will withstand the design basis loads specified in the Design Description without loss of structural integrity or the safety-related functions.</p> <p>i.b) A report exists which reconciles deviations during construction and concludes that the as-built shield building structures, including the critical sections, conform to the approved design and will withstand the design basis loads specified in the Design Description without loss of structural integrity or the safety-related functions.</p> <p>i.c) A report exists which reconciles deviations during construction and concludes that the as-built structures in the non-radiologically controlled area of the auxiliary building, including the critical sections, conform to the approved design and will withstand the design basis loads specified in the Design Description without loss of structural integrity or the safety-related functions.</p>

Table 3.3-6 (cont.) Inspections, Tests, Analyses, and Acceptance Criteria		
Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
		i.d) A report exists which reconciles deviations during construction and concludes that the as-built structures in the radiologically controlled area of the auxiliary building, including the critical sections, conform to the approved design and will withstand the design basis loads specified in the Design Description without loss of structural integrity or the safety-related functions.
	ii) An inspection of the as-built concrete thickness will be performed.	ii.a) A report exists that concludes that the containment internal structures as-built concrete thicknesses conform to the building sections defined in Table 3.3-1. ii.b) A report exists that concludes that the as-built concrete thicknesses of the shield building sections conform to the building sections defined in Table 3.3-1. ii.c) A report exists that concludes that as-built concrete thicknesses of the non-radiologically controlled area of the auxiliary building sections conform to the building sections defined in Table 3.3-1. ii.d) A report exists that concludes that the as-built concrete thicknesses of the radiologically controlled area of the auxiliary building sections conform to the building sections defined in Table 3.3-1. ii.e) A report exists that concludes that the as-built concrete thicknesses of the annex building sections conform with the building sections defined in Table 3.3-1.

Table 3.3-6 (cont.) Inspections, Tests, Analyses, and Acceptance Criteria		
Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
		ii.f) A report exists that concludes that the as-built concrete thicknesses of the turbine building sections conform to the building sections defined in Table 3.3-1.
2.b) Site grade level is located relative to floor elevation 100'-0" per Table 3.3-5.	Inspection of the as-built site grade will be conducted.	Site grade is consistent with design plant grade within the dimension defined on Table 3.3-5.
2.c) The containment and its penetrations are designed and constructed to ASME Code Section III, Class MC. ⁽¹⁾	See Tier 1 Material, Subsection 2.2.1, Containment System.	See Tier 1 Material, Subsection 2.2.1, Containment System.
2.d) The containment and its penetrations retain their pressure boundary integrity associated with the design pressure.	See Tier 1 Material, Subsection 2.2.1, Containment System.	See Tier 1 Material, Subsection 2.2.1, Containment System.
2.e) The containment and its penetrations maintain the containment leakage rate less than the maximum allowable leakage rate associated with the peak containment pressure for the design basis accident.	See Tier 1 Material, Subsection 2.2.1, Containment System.	See Tier 1 Material, Subsection 2.2.1, Containment System.
2.f) The key dimensions of nuclear island structures are defined on Table 3.3-5.	An inspection will be performed of the as-built configuration of the nuclear island structures.	A report exists and concludes that the key dimensions of the as-built nuclear island structures are consistent with the dimensions defined on Table 3.3-5.
2.g) The containment vessel greater than 7 feet above the operating deck provides a heat transfer surface. A free volume exists inside the containment shell above the operating deck.	The maximum containment vessel inside height from the operating deck is measured and the inner radius below the spring line is measured at two orthogonal radial directions at one elevation.	The containment vessel maximum inside height from the operating deck is 146'-7" (with tolerance of +12", -6"), and the inside diameter is 130 feet nominal (with tolerance of +12", -6").

1. Containment isolation devices are addressed in subsection 2.2.1, Containment System.

Table 3.3-6 (cont.) Inspections, Tests, Analyses, and Acceptance Criteria		
Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
2.h) The free volume in the containment allows for floodup to support long-term core cooling for postulated loss-of-coolant accidents.	An inspection will be performed of the as-built containment structures and equipment. The portions of the containment included in this inspection are the volumes that flood with a loss-of-coolant accident in passive core cooling system valve/equipment room B (11207). The in-containment refueling water storage tank volume is excluded from this inspection.	A report exists and concludes that the floodup volume of this portion of the containment is less than 73,500 ft ³ to an elevation of 108'.
3. Walls and floors of the nuclear island structures as defined on Table 3.3-1 except for designed openings or penetrations provide shielding during normal operations.	Inspection of the as-built nuclear island structures wall and floor thicknesses will be performed.	<p>a) A report exists and concludes that the shield walls and floors of the containment internal structures as defined in Table 3.3-1, except for designed openings or penetrations, are consistent with the concrete wall thicknesses provided in Table 3.3-1.</p> <p>b) A report exists and concludes that the shield walls of the shield building structures as defined in Table 3.3-1 except for designed openings or penetrations are consistent with the concrete wall thicknesses provided in Table 3.3-1.</p> <p>c) A report exists and concludes that the shield walls and floors of the non-radiologically controlled area of the auxiliary building as defined in Table 3.3-1 except for designed openings or penetrations are consistent with the concrete wall thicknesses provided in Table 3.3-1.</p> <p>d) A report exists and concludes that the shield walls and floors of the radiologically controlled area of the auxiliary building as defined in Table 3.3-1 except for designed openings or penetrations are consistent with the concrete wall thicknesses provided in Table 3.3-1.</p>

Table 3.3-6 (cont.) Inspections, Tests, Analyses, and Acceptance Criteria		
Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
4.a) Walls and floors of the annex building as defined on Table 3.3-1 except for designed openings or penetrations provide shielding during normal operations.	Inspection of the as-built annex building wall and floor thicknesses will be performed.	A report exists and concludes that the shield walls and floors of the annex building as defined on Table 3.3-1 except for designed openings or penetrations are consistent with the minimum concrete wall thicknesses provided in Table 3.3-1.
4.b) Walls of the waste accumulation room in the radwaste building except for designed openings or penetrations provide shielding during normal operations.	Inspection of the as-built radwaste building wall thicknesses will be performed.	A report exists and concludes that the shield walls of the waste accumulation room in the radwaste building except for designed openings or penetrations are consistent with the minimum concrete wall thicknesses of 1'-4".
4.c) Walls of the packaged waste storage room in the radwaste building except for designed openings or penetrations provide shielding during normal operations.	Inspection of the as-built radwaste building wall thicknesses will be performed.	A report exists and concludes that the shield walls of the packaged waste storage room in the radwaste building except for the wall shared with the waste accumulation room and designed openings or penetrations are consistent with the minimum concrete wall thicknesses of 2'.
5.a) Exterior walls and the basemat of the nuclear island have a water barrier up to site grade.	An inspection of the as-built water barrier will be performed during construction.	A report exists that confirms that a water barrier exists on the nuclear island exterior walls up to site grade.
5.b) The boundaries between rooms identified in Table 3.3-2 of the auxiliary building are designed to prevent flooding of rooms that contain safety-related equipment.	An inspection of the auxiliary building rooms will be performed.	A report exists that confirms floors and walls as identified on Table 3.3-2 have provisions to prevent flooding between rooms up to the maximum flood levels for each room defined in Table 3.3-2.

Table 3.3-6 (cont.) Inspections, Tests, Analyses, and Acceptance Criteria		
Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
5.c) The boundaries between the following rooms, which contain safety-related equipment – PXS valve/accumulator room A (11205), PXS valve/accumulator room B (11207), and CVS room (11209) – are designed to prevent flooding between these rooms.	An inspection of the boundaries between the following rooms which contain safety-related equipment – PXS Valve/ Accumulator Room A (11205), PXS Valve/Accumulator Room B (11207), and CVS Room (11209) – will be performed.	A report exists that confirms that flooding of the PXS Valve/ Accumulator Room A (11205), and the PXS/Accumulator Room B (11207) is prevented to a maximum flood level as follows: PXS A 110'-2", PXS B 110'-1"; and of the CVS room (11209) to a maximum flood level of 110'-0".
6.a) The available room volumes of the radiologically controlled area of the auxiliary building between floor elevations 66'-6" and 82'-6" exceed the volume of the liquid radwaste storage tanks (WLS-MT-05A, MT-05B, MT-06A, MT-06B, MT-07A, MT-07B, MT-07C, MT-11).	An inspection will be performed of the as-built radiologically controlled area of the auxiliary building between floor elevations 66'-6" and 82'-6" to define volume.	A report exists and concludes that the as-built available room volumes of the radiologically controlled area of the auxiliary building between floor elevations 66'-6" and 82'-6" exceed the volume of the liquid radwaste storage tanks (WLS-MT-05A, MT-05B, MT-06A, MT-06B, MT-07A, MT-07B, MT-07C, MT-11).
6.b) The radwaste building package waste storage room has a volume greater than or equal to 1293 cubic feet.	An inspection of the radwaste building packaged waste storage room (50352) is performed.	The volume of the radwaste building packaged waste storage room (50352) is greater than or equal to 1293 cubic feet.
7.a) Class 1E electrical cables, communication cables associated with only one division, and raceways are identified according to applicable color-coded Class 1E divisions.	Inspections of the as-built Class 1E cables and raceways will be conducted.	<p>a) Class 1E electrical cables, and communication cables inside containment associated with only one division, and raceways are identified by the appropriate color code.</p> <p>b) Class 1E electrical cables, and communication cables in the non-radiologically controlled area of the auxiliary building associated with only one division, and raceways are identified by the appropriate color code.</p>

Table 3.3-6 (cont.) Inspections, Tests, Analyses, and Acceptance Criteria		
Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
		c) Class 1E electrical cables, and communication cables in the radiologically controlled area of the auxiliary building associated with only one division, and raceways are identified by the appropriate color code.
7.b) Class 1E divisional electrical cables and communication cables associated with only one division are routed in their respective divisional raceways.	Inspections of the as-built Class 1E divisional cables and raceways will be conducted.	<p>a) Class 1E electrical cables and communication cables inside containment associated with only one division are routed in raceways assigned to the same division. There are no other safety division electrical cables in a raceway assigned to a different division.</p> <p>b) Class 1E electrical cables and communication cables in the non-radiologically controlled area of the auxiliary building associated with only one division are routed in raceways assigned to the same division. There are no other safety division electrical cables in a raceway assigned to a different division.</p> <p>c) Class 1E electrical cables and communication cables in the radiologically controlled area of the auxiliary building associated with only one division are routed in raceways assigned to the same division. There are no other safety division electrical cables in a raceway assigned to a different division.</p>

Table 3.3-6 (cont.) Inspections, Tests, Analyses, and Acceptance Criteria		
Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
7.c) Separation is maintained between Class 1E divisions in accordance with the fire areas as identified in Table 3.3-3.	i) Inspections of the as-built Class 1E division electrical cables, communication cables associated with only one division, and raceways located in the fire areas identified in Table 3.3-3 will be conducted.	i.a) Results of the inspection will confirm that the separation between Class 1E divisions in the non-radiologically controlled area of the auxiliary building is consistent with Table 3.3-3. i.b) Results of the inspection will confirm that the separation between Class 1E divisions in the radiologically controlled area of the auxiliary building is consistent with Table 3.3-3.
	ii) Inspections of the as-built fire barriers between the fire areas identified in Table 3.3-3 will be conducted.	ii.a) Results of the inspection will confirm that fire barriers exist between fire areas identified in Table 3.3-3 inside the non-radiologically controlled area of the auxiliary building. ii.b) Results of the inspection will confirm that fire barriers exist between fire areas identified in Table 3.3-3 inside the radiologically controlled area of the auxiliary building.
7.d) Physical separation is maintained between Class 1E divisions and between Class 1E divisions and non-Class 1E cables.	Inspections of the as-built Class 1E raceways will be performed to confirm that the separation between Class 1E raceways of different divisions and between Class 1E raceways and non-Class 1E raceways is consistent with the following: i) Within the main control room and remote shutdown room, the minimum vertical separation is 3 inches and the minimum horizontal separation is 1 inch.	Results of the inspection will confirm that the separation between Class 1E raceways of different divisions and between Class 1E raceways and non-Class 1E raceways is consistent with the following: i) Within the main control room and remote shutdown room, the vertical separation is 3 inches or more and the horizontal separation is 1 inch or more.

Table 3.3-6 (cont.) Inspections, Tests, Analyses, and Acceptance Criteria		
Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
	ii) Within other plant areas (limited hazard areas), the minimum separation is defined by one of the following: <ol style="list-style-type: none"> 1) The minimum vertical separation is 5 feet and the minimum horizontal separation is 3 feet. 2) The minimum vertical separation is 12 inches and the minimum horizontal separation is 6 inches for raceways containing only instrumentation and control and low-voltage power cables <2/0 AWG. 3) For configurations that involve exclusively limited energy content cables (instrumentation and control), the minimum vertical separation is 3 inches and the minimum horizontal separation is 1 inch. 4) For configurations involving an enclosed raceway and an open raceway, the minimum vertical separation is 1 inch if the enclosed raceway is below the open raceway. 5) For configuration involving enclosed raceways, the minimum separation is 1 inch in both horizontal and vertical directions. 	ii.a) Within other plant areas inside containment (limited hazard areas), the separation meets one of the following: <ol style="list-style-type: none"> 1) The vertical separation is 5 feet or more and the horizontal separation is 3 feet or more except. 2) The minimum vertical separation is 12 inches and the minimum horizontal separation is 6 inches for raceways containing only instrumentation and control and low-voltage power cables <2/0 AWG. 3) For configurations that involve exclusively limited energy content cables (instrumentation and control), the minimum vertical separation is 3 inches and the minimum horizontal separation is 1 inch. 4) For configurations that involve an enclosed raceway and an open raceway, the minimum vertical separation is 1 inch if the enclosed raceway is below the raceway. 5) For configurations that involve enclosed raceways, the minimum vertical and horizontal separation is 1 inch.

Table 3.3-6 (cont.) Inspections, Tests, Analyses, and Acceptance Criteria		
Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
		ii.b) Within other plant areas inside the non-radiologically controlled area of the auxiliary building (limited hazard areas), the separation meets one of the following: <ol style="list-style-type: none"> 1) The vertical separation is 5 feet or more and the horizontal separation is 3 feet or more except. 2) The minimum vertical separation is 12 inches and the minimum horizontal separation is 6 inches for raceways containing only instrumentation and control and low-voltage power cables < 2/0 AWG. 3) For configurations that involve exclusively limited energy content cables (instrumentation and control), the minimum vertical separation is 3 inches and the minimum horizontal separation is 1 inch. 4) For configurations that involve an enclosed raceway, the minimum vertical separation is 1 inch if the enclosed raceway is below the raceway. 5) For configurations that involve enclosed raceways, the minimum vertical and horizontal separation is 1 inch.

Table 3.3-6 (cont.) Inspections, Tests, Analyses, and Acceptance Criteria		
Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
		ii.c) Within other plant areas inside the radiologically controlled area of the auxiliary building (limited hazard areas), the separation meets one of the following: <ol style="list-style-type: none"> 1) The vertical separation is 5 feet or more and the horizontal separation is 3 feet or more except. 2) The minimum vertical separation is 12 inches and the minimum horizontal separation is 6 inches for raceways containing only instrumentation and control and low-voltage power cables < 2/0 AWG. 3) For configurations that involve exclusively limited energy content cables (instrumentation and control), the minimum vertical separation is 3 inches and the minimum horizontal separation is 1 inch. 4) For configurations that involve an enclosed raceway and an open raceway, the minimum vertical separation is 1 inch if the enclosed raceway is below the raceway. 5) For configurations that involve enclosed raceways, the minimum vertical and horizontal separation is 1 inch.

Table 3.3-6 (cont.) Inspections, Tests, Analyses, and Acceptance Criteria		
Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
	<p>iii) Where minimum separation distances are not maintained, the circuits are run in enclosed raceways or barriers are provided.</p>	<p>iii.a) Where minimum separation distances are not met inside containment, the circuits are run in enclosed raceways or barriers are provided.</p> <p>iii.b) Where minimum separation distances are not met inside the non-radiologically controlled area of the auxiliary building, the circuits are run in enclosed raceways or barriers are provided.</p> <p>iii.c) Where minimum separation distances are not met inside the radiologically controlled area of the auxiliary building, the circuits are run in enclosed raceways or barriers are provided.</p>
	<p>iv) Separation distances less than those specified above and not run in enclosed raceways or provided with barriers are based on analysis</p>	<p>iv.a) For areas inside containment, a report exists and concludes that separation distances less than those specified above and not provided with enclosed raceways or barriers have been analyzed.</p> <p>iv.b) For areas inside the non-radiologically controlled area of the auxiliary building, a report exists and concludes that separation distances less than those specified above and not provided with enclosed raceways or barriers have been analyzed.</p> <p>iv.c) For areas inside the radiologically controlled area of the auxiliary building, a report exists and concludes that separation distances less than those specified above and not provided with enclosed raceways or barriers have been analyzed.</p>

Table 3.3-6 (cont.) Inspections, Tests, Analyses, and Acceptance Criteria		
Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
	v) Non-Class 1E wiring that is not separated from Class 1E or associated wiring by the minimum separation distance or by a barrier or analyzed is considered as associated circuits and subject to Class 1E requirements.	v.a) For areas inside containment, non-Class 1E wiring that is not separated from Class 1E or associated wiring by the minimum separation distance or by a barrier or analyzed is treated as Class 1E wiring. v.b) For areas inside the non-radiologically controlled area of the auxiliary building, non-Class 1E wiring that is not separated from Class 1E or associated wiring by the minimum separation distance or by a barrier or analyzed is treated as Class 1E wiring. v.c) For areas inside the radiologically controlled area of the auxiliary building, non-Class 1E wiring that is not separated from Class 1E or associated wiring by the minimum separation distance or by a barrier or analyzed is treated as Class 1E wiring.
7.e) Class 1E communication cables which interconnect two divisions are routed and separated such that the Protection and Safety Monitoring System voting logic is not defeated by the loss of any single raceway or fire area.	Inspections of the as-built Class 1E communication cables will be conducted.	Class 1E communication cables which interconnect two divisions are routed and separated such that the Protection and Safety Monitoring System voting logic is not defeated by the loss of any single raceway or fire area.
8. Equipment labeled as essential targets in Table 3.3-4 and located in rooms identified in Table 3.3-4 are protected from the dynamic effects of postulated pipe breaks.	An inspection will be performed of the as-built high energy pipe break pipe whip restraints features for systems located in rooms identified in Table 3.3-4.	An as-built Pipe Rupture Hazard Analysis Report exists and concludes that equipment labeled as essential targets in Table 3.3-4 and located in rooms identified in Table 3.3-4 can withstand the effects of postulated pipe rupture without loss of required safety function.
9. The reactor cavity sump has a minimum concrete thickness as shown in Table 3.3-5 between the bottom of the sump and the steel containment.	An inspection of the as-built containment building internal structures will be performed.	A report exists and concludes that the reactor cavity sump has a minimum concrete thickness as shown on Table 3.3-5 between the bottom of the sump and the steel containment.

Table 3.3-6 (cont.) Inspections, Tests, Analyses, and Acceptance Criteria		
Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
10. The shield building roof and PCS storage tank support and retain the PCS water sources. The PCS storage tank has a stainless steel liner which provides a barrier on the inside surfaces of the tank. Leak chase channels are provided on the tank boundary liner welds.	<p>i) A test will be performed to measure the leakage from the PCS storage tank based on measuring the water flow out of the leak chase collection system.</p> <p>ii) An inspection of the PCS storage tank exterior tank boundary and shield building tension ring will be performed before and after filling of the PCS storage tank to the overflow level. The vertical elevation of the shield building roof will be measured at a location at the outer radius of the roof (tension ring) and at a location on the same azimuth at the outer radius of the PCS water storage tank before and after filling the PCS storage tank.</p>	<p>i) A report exists and concludes that total water flow from the leak chase collection system does not exceed 10 gal/hr.</p> <p>ii) A report exists and concludes that there is no visible water leakage from the PCS storage tank and that inspection and measurement of the structure before and after filling of the tank shows structural behavior under normal loads to be acceptable.</p>
11. Deleted		
12. The extended turbine generator axis intersects the shield building.	An inspection of the as-built turbine generator will be performed.	The extended axis of the turbine generator intersects the shield building.
13. Separation is provided between the structural elements of the turbine, annex and radwaste buildings and the nuclear island structure. This separation permits horizontal motion of the buildings in the safe shutdown earthquake without impact between structural elements of the buildings.	An inspection of the separation of the nuclear island from the annex, radwaste and turbine building structures will be performed. The inspection will verify the specified horizontal clearance between structural elements of the adjacent buildings, consisting of the reinforced concrete walls and slabs, structural steel columns and floor beams.	The minimum horizontal clearance above floor elevation 100'-0" between the structural elements of the annex and radwaste buildings and the nuclear island is 4 inches. The minimum horizontal clearance above floor elevation 100'-0" between the structural elements of the turbine building and the nuclear island is 12 inches.
14. The walls, doors, ceiling, and floors in the main control room, the central alarm station, and the last access control function for access to the protected area are bullet-resistant.	Type test, analysis, or a combination of type test and analysis will be performed for the walls, doors, ceilings, and floors in the main control room, the central alarm station, and the last access control function for access to the protected area.	A report exists and concludes that the walls, doors, ceilings, and floors in the main control room, central alarm station, and the last access control function for access to the protected area are bullet-resistant.

Table 3.3-6 (cont.) Inspections, Tests, Analyses, and Acceptance Criteria		
Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
15. Deleted.		
16. Secondary security power supply system for alarm annunciator equipment and non-portable communications equipment is located within a vital area.	An inspection will be performed to ensure that the location of the secondary security power supply equipment for alarm annunciator equipment and non-portable communications equipment is within a vital area.	Secondary security power supply equipment for alarm annunciator equipment and non-portable communication equipment is located within a vital area.
17. Vital areas are locked and alarmed with active intrusion detection systems that annunciate in the central and secondary alarm stations upon intrusion into a vital area.	An inspection of the as-built vital areas, and central and secondary alarm stations are performed.	Vital areas are locked and alarmed with active and intrusion is detected and annunciated in both the central and secondary alarm stations.
18. Deleted.		

Table 3.3-7 Nuclear Island Critical Structural Sections
<p><u>Containment Internal Structures</u></p> <p>South west wall of the refueling cavity South wall of the west steam generator cavity North east wall of the in-containment refueling water storage tank In-containment refueling water storage tank steel wall Column supporting the operating floor</p>
<p><u>Auxiliary and Shield Building</u></p> <p>South wall of auxiliary building (column line 1), elevation 66'-6" to elevation 180'-0" Interior wall of auxiliary building (column line 7.3), elevation 66'-6" to elevation 160'-6" West wall of main control room in auxiliary building (column line L), elevation 117'-6" to elevation 153'-0" North wall of MSIV east compartment (column line 11 between lines P and Q), elevation 117'-6" to elevation 153'-0" Shield building cylinder, elevation 160'-6" to elevation 200'-0" Roof slab at elevation 180'-0" adjacent to shield building cylinder Floor slab on metal decking at elevation 135'-3" 2'-0" slab in auxiliary building (tagging room ceiling) at elevation 135'-3" Finned floor in the main control room at elevation 135'-3" Shield building roof, exterior wall of the PCS water storage tank Shield building roof, tension ring and columns between air inlets Divider wall between the spent fuel pool and the fuel transfer canal</p>
<p><u>Nuclear Island Basemat Below Auxiliary Building</u></p> <p>Bay between reference column lines 9.1 and 11, and K and L Bay between reference column lines 1 and 2 and K-2 and N</p>

Security-Related Information, Withhold Under 10 CFR 2.390d

**Figure 3.3-1
Nuclear Island Section A-A**

Security-Related Information, Withhold Under 10 CFR 2.390d

**Figure 3.3-2
Nuclear Island Section B-B**

Security-Related Information, Withhold Under 10 CFR 2.390d

**Figure 3.3-3
Nuclear Island Plan View at Elevation 66'-6"**

Security-Related Information, Withhold Under 10 CFR 2.390d

**Figure 3.3-4
Nuclear Island Plan View at Elevation 82'-6"**

Security-Related Information, Withhold Under 10 CFR 2.390d

**Figure 3.3-5
Nuclear Island Plan View at Elevation 96'-6"**

Security-Related Information, Withhold Under 10 CFR 2.390d

**Figure 3.3-6
Nuclear Island Plan View at Elevation 100'-0"**

Security-Related Information, Withhold Under 10 CFR 2.390d

**Figure 3.3-7
Nuclear Island Plan View at Elevation 117'-6"**

Security-Related Information, Withhold Under 10 CFR 2.390d

**Figure 3.3-8
Nuclear Island Plan View at Elevation 135'-3"**

Security-Related Information, Withhold Under 10 CFR 2.390d

**Figure 3.3-9
Nuclear Island Plan View at Elevation
153'-3" and 160'-6"**

Security-Related Information, Withhold Under 10 CFR 2.390d

**Figure 3.3-10
Nuclear Island Plan View at Shield Building Roof**

Security-Related Information, Withhold Under 10 CFR 2.390d

**Figure 3.3-11
Annex Building Plan View at Elevation 100'-0"**

Security-Related Information, Withhold Under 10 CFR 2.390d

**Figure 3.3-12
Annex Building Plan View at Elevation 117'-6"**

Security-Related Information, Withhold Under 10 CFR 2.390d

**Figure 3.3-13
Annex Building Plan View at Elevation 135'-3"**

Security-Related Information, Withhold Under 10 CFR 2.390d

**Figure 3.3-14
Nuclear Island Dimensions at
Elevation 66'-6"**