April 25, 2014
L-2014- 116

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D.C. 20555-0001

Re: Turkey Point Units 3 and 4
Docket Nos. 50-250 and 50-251
Revised Response To Request For Additional Information Question Six Regarding Supplemental Response to NRC Request for Information Pursuant to 10 CFR 50.54(f) Regarding the Flooding Aspects of Recommendation 2.1 of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident

References:

1. NRC Letter, Request for Information Pursuant to Title 10 of the Code of Federal Regulations 50.54(f) Regarding Recommendations 2.1, 2.3, and 9.3, of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident, dated March 12, 2012, ML12073A348.

2. FPL Letter, M. Kiley to NRC, L-2013-087, Response to NRC Request for Information Pursuant to 10 CFR 50.54(f) Regarding the Flood Hazard Reevaluation of Recommendation 2.1, dated March 11, 2013, ADAMS Accession No. ML13095A196

3. FPL Letter, M. Kiley to NRC, L-2013-256, Florida Power and Light Company's, Turkey Point Units 3 and 4, Supplemental Response to NRC Request for Information Pursuant to 10 CFR 50.54(f) Regarding the Flooding Aspects of Recommendation 2.1 of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident, dated August 22, 2013 ADAMS Accession No. 13248A312

4. NRC email from Audrey Klett to Bob Tomonto, Request for Additional Information - Turkey Point 3 & 4 - Flood Hazard Reevaluation Report (FHRR) - Recommendation 2.1-Flooding (TACs MF1114/15), dated January 15, 2014 ADAMS Accession No. ML14016A277

5. FPL Letter, M. Kiley to NRC, L-2014-023, Florida Power and Light Company's, Turkey Point Units 3 and 4, Response to NRC Request for Information Pursuant to 10 CFR 50.54(f) Regarding the Flood Hazard Reevaluation Report (FHRR), Recommendation 2.1 –Flooding, dated January 31, 2014 ADAMS Accession No. ML ML14055A365

6. FPL Letter, M. Kiley to NRC, L-2014-043, Florida Power and Light Company's, Turkey Point Units 3 and 4, Response To Request For Additional Information (RAI) 6, 10, and 11 Regarding Supplemental Response to NRC Request for Information Pursuant to 10

A010
NRR

CFR 50.54(f) Regarding the Flooding Aspects of Recommendation 2.1 of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident, dated February 26, 2014 ADAMS Accession No. ML14073A065

On March 12, 2012, the NRC issued Reference 1 to all power reactor licensees and holders of construction permits in active or deferred status. Enclosure 2 of Reference 1 requested that each licensee perform a reevaluation of external flooding sources and report the results in accordance with the NRC's prioritization plan. Florida Power & Light Company (FPL) submitted the Flood Hazard Reevaluation for Turkey Point Units 3 and 4 in Reference 2. FPL provided supplemental information regarding interim actions taken, associated supporting actions, and implementation dates for these supporting actions in Reference 3.

On January 15, 2014, the NRC requested FPL to respond to the request for additional information (RAI) for the Turkey Point Units 3 and 4 Flood Hazard Evaluation Report by January 31, 2014 for RAI questions 1-9 and by February 28, 2014 for questions 10 and 11(Reference 4).

On January 31, 2014, Reference 5 provided the FPL response to RAI questions 1-5 and 7-9. On February 26, 2014 Reference 6 provided the FPL response to RAI questions 6, 10 and 11. FPL noted in Reference 6 that the flood levels provided for RAI 6 were subject to change due to adjustments that were being made to the model. The NRC requested that the revised flooding calculation results and their impact on RAI 6 response be provided. The enclosure to this letter contains the FPL revised response to RAI question 6.

This letter contains new regulatory commitments to implement additional interim flood protection features.

Should you have any questions concerning the content of this letter, please contact Mr. Robert J. Tomonto, Turkey Point Licensing Manager, at 305-246-7327.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on April 25, 2014.

Sincerely,

Michael Kiley

Enclosure

cc: USNRC Regional Administrator, Region II
USNRC Project Manager, Turkey Point Nuclear Plant
USNRC Senior Resident Inspector, Turkey Point Nuclear Plant

L-2014-116

Enclosure

Florida Power & Light Company's

Turkey Point Units 3 and 4

Revised Response to

NRC Request for Additional Information (RAI)

Question 6

NRC Request for Information Pursuant to 10 CFR 50.54(f)

Regarding the Flood Hazard Reevaluation Report (FHRR)

Recommendation 2.1 –Flooding

NRC RAI No. 6:

Section 3.2 Local Intense Precipitation and Associated Site Drainage

The NRC staff requests additional information to complete its review of the tabulated maximum predicted water elevations, depths, and flow velocities at 33 discrete points of interest, which the licensee identifies as potentially vulnerable areas. The NRC staff requests the licensee to provide a diagram or site plan that identifies/labels the facilities or buildings associated with the 33 locations for which flow depths and elevations are calculated for local intense precipitation Scenario A (see Table 4-2 of the FHRR). The NRC staff also requests the licensee to provide the maximum elevations and heights above local grade at the exterior of safety-related structures associated with these 33 locations. Please also confirm that evaluation of the resulting effects of water that has entered these structures will be evaluated and submitted as part of the integrated assessment.

FPL Response to RAI No. 6:

FPL has revised the flooding calculation which provided the flooding values used in the response to RAI 6 submitted in letter L-2014-043. The below response reflects changes from the revised calculation results.

The 33 discrete points of interest (POI) that were selected are related to potentially vulnerable areas such as openings in the perimeter flood barriers where water could build up and backflow into buildings. As requested, Figures 6.1 and 6.2 identify the facilities or buildings associated with the 33 POI locations. Figure 6.1 shows facilities or buildings associated with POIs 1 through 29 and Figure 6.2 shows facilities or buildings associated with POIs 30 through 33.

Information associated with each POI location is provided in Table 6-1, including the POI location, door entry number, door entry elevation, maximum water surface elevation (WSEL), depth above the door, ground surface elevation, and depth above ground surface (flow depth). The values provided in Table 6-1 have been updated based on the response to RAI 1. The plant floor is at Elevation +15.7 feet-NAVD88 in the power block area, which includes the Turbine Building, Auxiliary Building, and Control Building.

In development of the FLO-2D computational domain, multiple survey/topographic points were averaged to determine the elevation of each element. The actual elevation of selected critical POIs near the Auxiliary and Turbine Buildings were measured instead of using an average value to ensure an accurate translation of the FLO-2D output water depths to critical WSELs (Table 6-1). The adjusted WSEL and water depths above the floor at these POIs have been incorporated into the revised FLO-2D model since the initial response to RAI-6 was provided. The initial response to RAI 6 indicated that FLO-2D output flow depths are insensitive to small topographic changes in the LIP analysis. Therefore, it is appropriate to use adjusted flood values for actual ground depth for subsequent analyses which removes elevation interpolation performed during the FLO-2D evaluation (see Figure 6-3. This adjustment is no longer required since the FLO-2D model has been updated with actual measured ground elevation for critical areas. The discussion and data in Table 6-1 has been retained for continuity between the initial RAI 6 response and this revised response.

After submittal of the responses to RAIs 1 through 5 and 7, FPL was informed by its vendor who prepared the FLO-2D model that a software error notice was received from their supplier of FLO-2D. The error was evaluated and determined not to have an impact on the Turkey Point (PTN) results. While evaluating the impact of the error, it was discovered that the model that was developed treated the building areas as being at the level of the adjacent ground, rather than above the ground. Therefore, depending on the hydraulic gradient away from the structure, flow from roofs could be inhibited, or possibly detained. This has been corrected and the results in this response reflect that correction.

FPL has begun the Integrated Assessment and revised the FLO-2D model by providing roof elevation above grade as noted. The response to RAI 5 indicated that the CCW and Condenser pits were conservatively not included in the FLO-2D model. The revised model now includes the Condenser Pits, CCW pits, flood walls, roof drainage features, and interior building structures. These details redirect runoff flow in some areas which have affected the previously calculated maximum water depths adjacent to exterior of buildings. As predicted

have affected the previously calculated maximum water depths adjacent to exterior of buildings. As predicted in the initial RAI 6 response, the revised model results show mostly decreases in flood levels around the Turbine Building and increases around the Auxiliary Building.

For the non-hurricane LIP-A scenario (stop logs not installed), the increase in peak flood levels outside the Auxiliary Building did not increase water levels within the Auxiliary Building previously reported in RAI-7. While the peak water level increased, the duration of time that high levels exists outside the Auxiliary Building was reduced compared to the previous results. This results in less water entering the Auxiliary Building through the external doors. The hurricane LIP-B scenario results reported in FHRR section 4.1.3.3 and 5.1.2 have also increased for the CCW areas due to redirected Auxiliary Building roof run-off through stairwells and the adjacent CVCS holdup tank roof. The Unit 3 peak CCW area water depth increased from 0.9 ft to 5.0 ft. and the Unit 4 increased from 1.0 ft to 1.3ft. The increased Unit 3 CCW flood depth was found to challenge SSCs in the CCW areas. The Unit 4 peak depth is still bounded by the previously reported Unit 4 LIP B peak depth in the FHRR. FPL will implement interim actions to block run-off to the CCW areas and redirect it to other areas prior to the hurricane season. An analysis has been completed for the interim measures that demonstrate they will be effective. FPL has entered the revised flooding results for the CCW area and the need for interim actions into the corrective action program.

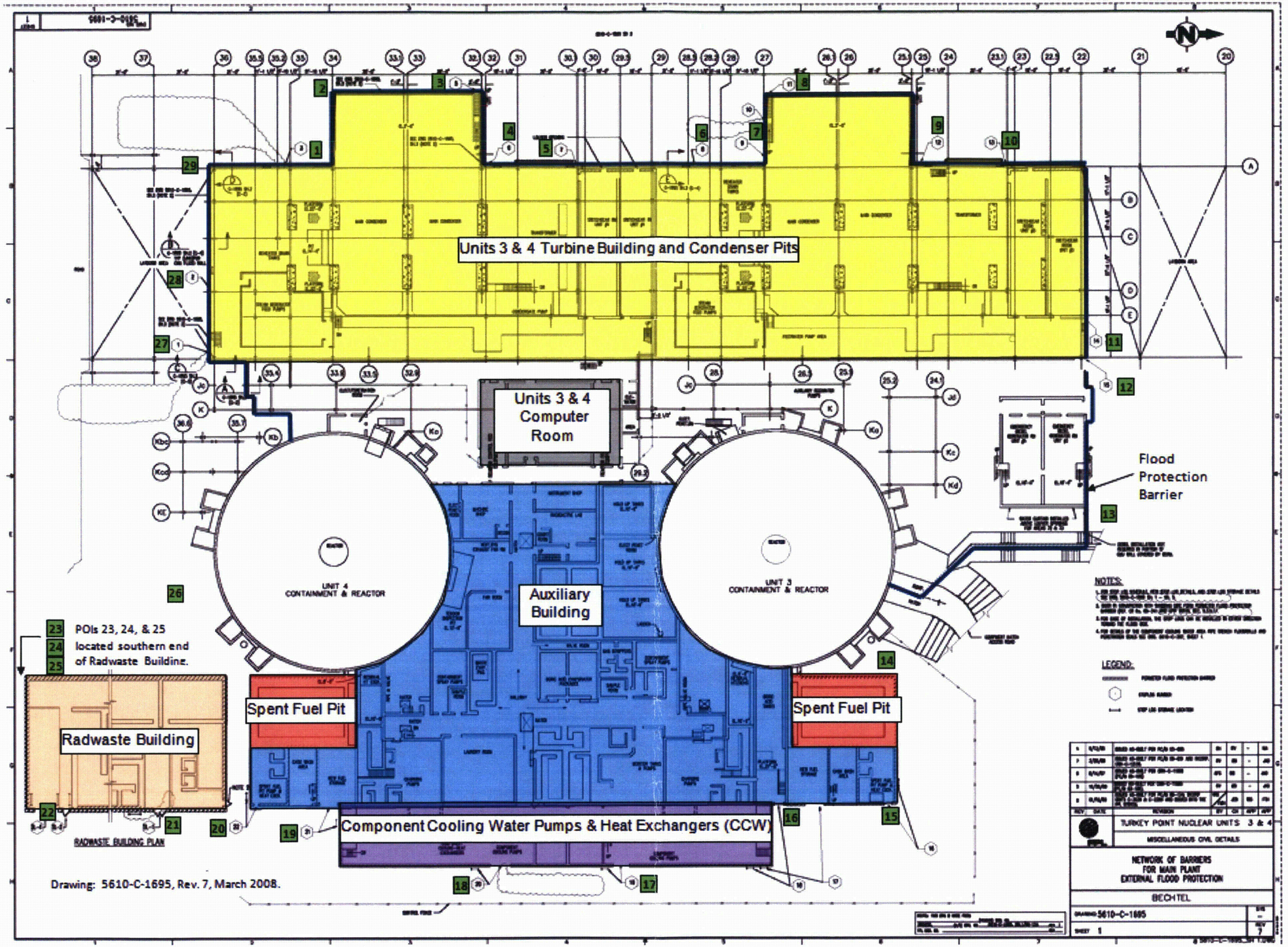

Figure 6-1 – Points of Interest Overlaid with Site Drawing

Figure 6-2 - Points of Interest Located Near Intake Canal and ISFSI Pad

Table 6-1 - Flow Depths, Peak Water Surface Elevations at Each Point of Interest Location

Point of Interest	Location	Door Entry No.[1]	Floor Elevation (ft-NAVD88) (a)	Maximum Resulting WSEL (ft-NAVD 88)[2] Original/Revised (b)	Resulting Depth Above Floor (ft)[8] Original/Revised (c)	Modeled Ground Surface Elevation (ft-NAVD88) Original/Revised (d)	Resulting Depth Above Ground Surface (ft)[2] Original/Revised (e)	Measured Ground Surface Elevation (ft-NAVD88)[5] (f)	Corrected WSEL (ft-NAVD88)[6] Original/Revised (g)	Corrected Depth Above Floor (ft)[6] Original/Revised (h)
1	Unit 4 Instrument Air Equipment Area	3	15.70	15.97/16.18	0.27/0.48	15.05/15.70	0.92/0.48	15.70	16.62/16.18	0.92/0.48
2	Unit 4 Lube Oil Reservoir Area	N/A	N/A	15.97/15.7	N/A	14.65/15.20	1.32/0.5	15.20	16.52/15.7	N/A
3	Unit 4 Main Condenser Area	5	15.70	15.93/15.62	0.23/-0.08	14.95/15.30	0.98/0.32	15.30	16.28/15.62	0.58/-0.08
4	Unit 4 Auxiliary Area	6	15.70	15.98/15.73	0.28/0.03	15.30/15.53	0.68/0.20	15.53	16.21/15.73	0.51/0.03
5	Unit 4 Auxiliary Area	7	15.70	15.98/15.81	0.28/0.11	15.30/15.62	0.68/0.19	15.62	16.30/15.81	0.60/0.11
6	Unit 3 Instrument Air equipment Area	8	15.70	16.27/15.84	0.57/0.14	15.67/15.70	0.60/0.14	15.70	16.30/15.84	0.60/0.14
7	Unit 3 Main Condenser Area	9 and 10	15.70	18.03/15.73	2.33/0.03	17.42/15.37	0.61/0.36	15.37	15.98/15.73	0.28/0.03
8	Unit 3 Main Condenser Area	11	15.70	15.8915.60	0.19/-0.10	15.20/15.37	0.69/0.23	15.37	16.06/15.60	0.36/-0.10
9	Unit 3 Auxiliary Area	12	15.70	18.03/15.82	2.33/0.12	17.42/15.62	0.61/0.20	15.62	16.23/15.82	0.53/0.12
10	Unit 3 Auxiliary Area	13	15.70	15.78/15.81	0.08/0.11	15.05/15.53	0.73/0.28	15.53	16.26/15.81	0.56/0.11
11	Units 3 and 4 Auxiliary Feedwater Pump Area	14	15.70	16.14/16.18	0.44/0.48	15.49/15.45	0.65/0.73	15.45	16.10/16.18	0.40/0.48
12	Unit 3 Switchgear/D.G. Building Vestibule	15	15.70	16.18/16.18	0.48/0.48	15.49/15.45	0.69/0.73	15.45	16.14/16.18	0.44/0.48
13	Outside building near Emergency Diesel Generator Rooms	N/A	N/A	18.97/16.20	3.27/N/A	17.80/15.38	1.17/0.16	15.38	16.54/16.20	N/A
14	Outside Unit 3 Containment Building	N/A	N/A	20.43/21.15	4.73/N/A	19.83	0.60/1.32	(7)	(7)	(7)
15	Unit 3 Spent Fuel Pit Heat Exchanger Room	16	15.70	17.11/17.25	1.41/1.55	15.67	1.44/1.58	(7)	(7)	(7)
16	Units 3 and 4 Boric Acid Tanks and Pump Room Unit 3 New Fuel Storage Room	17 and 18	15.70	17.04/17.24	1.34/1.54	15.77	1.27/1.47	(7)	(7)	(7)
17	Unit 3 Component Cooling Pump and Heat Exchanger Area	19	15.70	16.76/17.24	1.06/1.54	15.52	1.24/1.72	(7)	(7)	(7)
18	Unit 4 Component Cooling Pump and Heat Exchanger Area	20	15.70	16.59/17.09	0.89/1.39	15.38	1.22/1.71	(7)	(7)	(7)
19	Unit 4 New Fuel Storage Room	21	15.70	16.41/16.20	0.71/0.50	15.79/15.75	0.62/0.45	(7)	(7)	(7)
20	Unit 4 Spent Fuel and Heat Exchanger Area	22	15.70	16.30/16.25	0.60/0.55	15.47/15.51	0.83/0.74	(7)	(7)	(7)
21	Radwaste Building	SL-1[4]	15.70	16.28/16.33	0.58/0.63	15.60	0.68/0.73	(7)	(7)	(7)
22	Radwaste Building	SL-2 and SL-4[4]	15.70	16.34/16.30	0.64/0.60	15.50	0.84/0.80	(7)	(7)	(7)
23	Radwaste Building	N/A	N/A	16.25/16.23	0.55/N/A	15.65	0.60/0.58	(7)	(7)	(7)
24	Radwaste Building	N/A	N/A	16.11/16.19	N/A	15.50	0.61/0.69	(7)	(7)	(7)
25	Radwaste Building	N/A	N/A	19.23/18.75	N/A	18.61	0.62/0.14	(7)	(7)	(7)
26	Outside Unit 4 Containment Building	N/A	N/A	28.61/28.09	N/A	28.01	0.60/0.08	(7)	(7)	(7)

Point of Interest	Location	Door Entry No.[1]	Floor Elevation (ft-NAVD88) (a)	Maximum Resulting WSEL (ft-NAVD 88)[2] Original/Revised (b)	Resulting Depth Above Floor (ft)[8] Original/Revised (c)	Modeled Ground Surface Elevation (ft-NAVD88) Original/Revised (d)	Resulting Depth Above Ground Surface (ft)[2] Original/Revised (e)	Measured Ground Surface Elevation (ft-NAVD88)[5] (f)	Corrected WSEL (ft-NAVD83)[6] Original/Revised (g)	Corrected Depth Above Floor (ft)[6] Original/Revised (h)
27	Unit 4 Steam Generator Feed Pump Area	1	15.70	16.01/15.95	N/A/0.25	15.29/15.20	0.72/0.75	(7)	(7)	(7)
28	Unit 4 Instrument Air Equipment Area	2	15.70	16.01/15.87	0.31/0.17	15.30/15.20	0.71/0.67	15.20	15.92/15.87	0.22/0.17
29	Unit 4 Compressors and Condensate Storage Area	N/A	N/A	15.95/15.74	0.25/N/A	15.29/15.20	0.66/0.54	15.20	15.91/15.74	0.21/N/A
30	ISFSI Pad	N/A	N/A	4.48/4.02	N/A	3.88/3.89	0.60/0.13	3.89	15.86/4.02	N/A
31	ISFSI Pad	N/A	N/A	3.02/3.60	N/A	2.13/3.12	0.89/1.48	(7)	(7)	(7)
32	South of ISFSI Pad	N/A	N/A	3.20/3.60	N/A	2.45	0.75/1.15	(7)	(7)	(7)
33	East Heavy Haul Route – inside nuclear parameter fence near Water Treatment Area	N/A	N/A	15.01/14.90	N/A	14.41	0.60/0.49	(7)	(7)	(7)

1. Stop Log locations and numbers obtained from Drawing number 5610-C-1695, Revision 7, March 2008.
2. Maximum WSEL and depth above ground surface are based on values in revised calculation FPL062-CALC-004 Rev 2.
3. Area of high ground surface elevation.
4. 'SL' designates Stop Log location.
5. Measured elevations of POIs (Figure 6-1).
6. Corrected WSEL and water depths at doors were determined by using the measured ground elevations with the modeled water depths for initial response to RAI-6. Model ground elevations have been updated with measured elevations.
7. Measure elevations are not available at building wall
8. Depth above floor only applies where there is an nearby door opening in wall

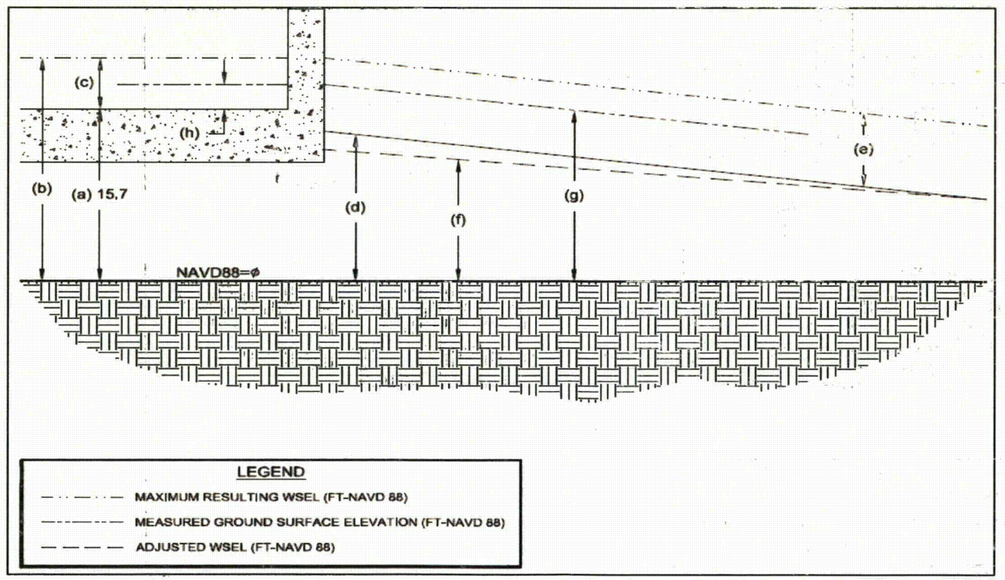

Figure 6-3 – Adjusted Ground Elevation