PMTurkeyCOLPEm Resource

From: Winfield, Nadine [Nadine.Winfield@fpl.com]
Sent: Wednesday, April 10, 2013 6:55 PM
To: Orthen, Richard; Williamson, Alicia; Matthews, David; Nguyen, John-Chau; Maher, William; Comar, Manny; Hoeg, Tim; McCree, Victor
Subject: RE: FPL Letter L-2013-110 Dated 04-02-2013: Relocation Changes for COLA ER Subsection 3.9
Attachments: L-2013-110 Dated 04-02-2013 ER 3 9 Relocation Changes.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Richard,

This letter has the Track Changes on? Is it supposed to have all the strikethrough's and red??

Please advise,

Thank you,
Nadine

From: Orthen, Richard
Sent: Tuesday, April 02, 2013 10:43 AM
To: 'Alicia Williamson (alicia.williamson@nrc.gov)'; 'David Matthews (david.matthews@nrc.gov)'; 'John-Chau Nguyen (John-Chau.Nguyen@nrc.gov)'; Maher, William; 'Manny M. Comar (manny.comar@nrc.gov)'; 'Tim Hoeg (Tim.Hoeg@nrc.gov)'; 'Victor Mccree (Victor.Mccree@nrc.gov)'
Subject: FPL Letter L-2013-110 Dated 04-02-2013: Relocation Changes for COLA ER Subsection 3.9

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

Re: Florida Power & Light Company
Proposed Turkey Point Units 6 and 7
Docket Nos. 52-040 and 52-041
Relocation Changes for the Combined License Application
Part 3 – Environmental Report, Subsection 3.9
Preconstruction and Construction Activities

Florida Power & Light Company (FPL) provides, as an attachment to this letter, relocation changes for the Turkey Point Units 6 and 7 Combined License Application (COLA) Environmental Report (ER). These changes reflect the relocation of ER Subsection 3.9.1.7 preconstruction power block earthwork activities to ER Subsection 3.9.2.1 as construction activities. The Turkey Point Units 6 and 7 COLA ER will be revised in a future update to reflect the direct and ancillary changes brought about by this relocation.

Richard F. Orthen
Principal Licensing Engineer
New Nuclear Projects NNP/JB B3314

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From: Winfield, Nadine

Created By: Nadine.Winfield@fpl.com

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L-2013-110
10 CFR 52.3

April 2, 2013

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

Re: Florida Power & Light Company
Proposed Turkey Point Units 6 and 7
Docket Nos. 52-040 and 52-041
Relocation Changes for the Combined License Application
Part 3 – Environmental Report, Subsection 3.9
Preconstruction and Construction Activities

Florida Power & Light Company (FPL) provides, as an attachment to this letter, relocation changes for the Turkey Point Units 6 and 7 Combined License Application (COLA) Environmental Report (ER). These changes reflect the relocation of ER Subsection 3.9.1.7 preconstruction power block earthwork activities to ER Subsection 3.9.2.1 as construction activities. The Turkey Point Units 6 and 7 COLA ER will be revised in a future update to reflect the direct and ancillary changes brought about by this relocation.

If you have any questions, or need additional information, please contact me at 561-691-7490.

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

Executed on April 2, 2013.

Sincerely,

William Maher
Senior Licensing Director – New Nuclear Projects

WDM/RFO

Attachment: Relocation Changes for COLA Part 3 – ER Subsection 3.9

cc:
PTN 6 & 7 Project Manager, AP1000 Projects Branch 1, USNRC DNRL/NRO
Regional Administrator, Region II, USNRC
Senior Resident Inspector, USNRC, Turkey Point Plant 3 & 4

ER Subsection 3.9 will be revised as follows in a future revision of the COLA:

Revise ER Subsection 3.9.1.6 as follows:

To establish a dry construction working surface at an approximate elevation of 0.0 feet NAVD 88, the remaining portions of the Units 6 & 7 plant area would be de-mucked and backfill placed and compacted in a manner similar to the perimeter. This process would proceed simultaneously in multiple areas across the plant area, sequenced to facilitate subsequent excavation activities, and would continue until the entire layer of muck is excavated and the plant area is backfilled to elevation 0.0 NAVD 88, except for the designated makeup water reservoir area which would not be backfilled. (See Subsection 3.9.1.~~8~~**7** for a description of construction activities for the makeup water reservoir.) Backfill would be obtained from a combination of an FPL-owned fill source located on a 300-acre plot located near Homestead Air Reserve Base approximately 4.5 miles from the plant area or other regional sources. Reused material excavated from the plant area would be used as Category I structural backfill. Figure 3.9-1 (Sheet 4) depicts the location of the FPL-owned fill source.

Delete ER Subsection 3.9.1.7 as follows:

~~3.9.1.7 Earthwork — Units 6 & 7 Power Block~~

~~The power block footprint encompasses the nuclear and turbine island building areas, which include the following major buildings for each unit:~~

- ~~Containment building~~
- ~~Auxiliary building~~
- ~~Annex building~~
- ~~Radwaste building~~
- ~~Turbine building~~

~~Site preparation, excavation and foundation preparation for the Units 6 & 7 power block areas would include the following:~~

- ~~The two excavations for the containment and auxiliary buildings would extend to an approximate elevation of –35.0 feet NAVD 88 or to the top of competent rock in the Fort Thompson Formation. To permit construction of the deep foundations and to hydraulically isolate this excavation from horizontal groundwater flow, a permanent reinforced concrete diaphragm "cutoff" wall would be constructed. It is~~

~~anticipated that the diaphragm wall would be installed into the Key Largo Formation to a depth of approximately -60.0 feet NAVD 88 or just below a semi-confining layer in the Biscayne Aquifer. The top of the diaphragm wall would be at elevation 2.0 feet NAVD 88 or two feet above the construction working surface elevation of 0.0 feet NAVD 88.~~

- ~~The cutoff wall will be constructed sequentially by excavating vertical panels, roughly 3 feet wide, by 12 to 14 feet long, by 60 feet deep to form the outer footprint of each deep nuclear island excavation. During excavation, each slot is kept filed with bentonite-base slurry, which counter balances the hydrostatic forces and lateral earth pressure. When the slot is completed, reinforcement is installed and concrete is placed through tremie pipes, displacing the excavation slurry to the top, where it is pumped to a mud pit for re-use. This installation approach, specifically the use of panels and recirculation of slurry material, will minimize the amount of slurry waste at the completion of wall installation. The remaining slurry will be dewatered and disposed of onsite at the spoils piles, located along the cooling canals of the industrial wastewater facility.~~
- ~~After completion of this diaphragm wall, a horizontal seepage barrier, or grout plug, which prevents vertical seepage, approximately 25 feet thick, will be constructed from elevation -35 feet NAVD 88 to elevation -60 feet NAVD 88 by first drilling from the ground surface, and then grouting. The barrier will be integral with the diaphragm wall so that construction dewatering can be accomplished by use of sump pumps, or similar methodologies, located within the excavation.~~
- ~~To install the grout plug, vertical boreholes will be drilled in a grid pattern and grouted in an iterative process, which is estimated to consist of four rounds of drilling and grouting, prior to excavation. Successive rounds of grouting will be performed by dividing the spacing of the previous round of boreholes used for grouting. The later rounds of grouting will experience lower grout "take" — that is, as formation voids and flow pathways are filled during the initial grouting rounds, the formation will "take" less grout. The use of this testing and remedial grouting phased approach, in addition to both overlapping criteria and a designed program to indicate completeness of the program — based on such factors as grout injection pressure, volume pumped into the formation, and observable seepage, if any — will determine the adequacy and completeness of the horizontal grouting program.~~
- ~~A temporary dewatering system would be installed for the two power block area deep excavations. Drainage sumps would be installed at the bottom of the excavations from which surface drainage and/or accumulated groundwater would be pumped to the cooling canals of the industrial wastewater facility. The~~

~~subsequent dewatering phases, known as the excavation phase and foundation construction, are further discussed in Section 4.2.~~

- ~~Once construction of the diaphragm wall is completed around the planned deep foundation area, excavation of the existing material within its interior would commence using conventional methods (use of explosives would not be required). Excavated material not suitable for reuse would be transferred to the designated spoils areas, as depicted on Figure 3.9-1 (Sheet 2). Material removed from the excavation and evaluated as acceptable, would be stored on the plant area and used later as common Category II or Category I structural backfill.~~
- ~~Lean concrete fill would be placed between the excavated surface of the Key Largo Limestone Formation at approximately -35.0 feet NAVD 88 and an approximate elevation of –16.0 feet NAVD 88. At this elevation, additional lean concrete fill, mud mat(s), and a waterproof membrane would provide an interface at –14.0 feet NAVD 88 for construction of the containment and auxiliary building reinforced concrete foundations. Category I structural fill would then be placed to prescribed compaction requirements in the annular space between the power block structures and the diaphragm wall. The Category I structural fill would extend to the top of the wall and additional Category I fill would be placed over Category II fill at a 1.5:1 horizontal to vertical slope past the diaphragm wall perimeter.~~

~~Once the power block area has been backfilled to the top of diaphragm wall, backfill of the remaining plant area would be completed in a sequence defined by the construction schedule. Finished grade of the plant area would slope up from an approximate elevation of 19.0 feet NAVD 88 (adjacent to the perimeter retaining wall) to elevation 25.5 feet NAVD 88 at the power block area near the center of the plant area. The slope of the finished grade would be approximately 0.5 percent from the exterior walls to the power block areas with contours and swales to allow drainage into the surrounding canals.~~

The following subsections numbering will be revised (text of subsections is unchanged):

3.9.1.**7**~~8~~ Makeup Water Reservoir, Cooling Towers, and Makeup Water Supply Pipelines

3.9.1.**8**~~9~~ Reclaimed Water Pipelines and Potable Water Pipelines

3.9.1.**9**~~10~~ Radial Collector Wells

3.9.1.**10**~~11~~ Deep Injection Wells

3.9.1.**11**~~12~~ Module Assembly

ER Subsection 3.9.2.1 will be added as follows:

3.9.2 COL CONSTRUCTION ACTIVITIES

The construction activities that would be performed after receipt of the COL, including the structural construction and completion of structures, systems, and components, are presented in the following subsections.

3.9.2.1 Earthwork — Units 6 & 7 Power Block

The power block footprint encompasses the nuclear and turbine island building areas, which include the following major buildings for each unit:

- **Containment building**
- **Auxiliary building**
- **Annex building**
- **Radwaste building**
- **Turbine building**

Site preparation, excavation and foundation preparation for the Units 6 & 7 power block areas would include the following:

- **The two excavations for the containment and auxiliary buildings would extend to an approximate elevation of –35.0 feet NAVD 88 or to the top of competent rock in the Fort Thompson Formation. To permit construction of the deep foundations and to hydraulically isolate this excavation from horizontal groundwater flow, a permanent reinforced concrete diaphragm "cutoff" wall would be constructed. It is anticipated that the diaphragm wall would be installed into the Key Largo Formation to a depth of approximately -60.0 feet NAVD 88 or just below a semi-confining layer in the Biscayne Aquifer. The top of the diaphragm wall would be at elevation 2.0 feet NAVD 88 or two feet above the construction working surface elevation of 0.0 feet NAVD 88.**
- **The cutoff wall will be constructed sequentially by excavating vertical panels, roughly 3 feet wide, by 12 to 14 feet long, by 60 feet deep to form the outer footprint of each deep nuclear island excavation. During excavation, each slot is kept filed with bentonite-base slurry, which counter balances the hydrostatic forces and lateral earth pressure. When the slot is completed, reinforcement is installed and concrete is placed through tremie pipes, displacing the excavation slurry to the top, where it is**

pumped to a mud pit for re-use. This installation approach, specifically the use of panels and recirculation of slurry material, will minimize the amount of slurry waste at the completion of wall installation. The remaining slurry will be dewatered and disposed of onsite at the spoils piles, located along the cooling canals of the industrial wastewater facility.

- **After completion of this diaphragm wall, a horizontal seepage barrier, or grout plug, which prevents vertical seepage, approximately 25 feet thick, will be constructed from elevation -35 feet NAVD 88 to elevation -60 feet NAVD 88 by first drilling from the ground surface, and then grouting. The barrier will be integral with the diaphragm wall so that construction dewatering can be accomplished by use of sump pumps, or similar methodologies, located within the excavation.**
- **To install the grout plug, vertical boreholes will be drilled in a grid pattern and grouted in an iterative process, which is estimated to consist of four rounds of drilling and grouting, prior to excavation. Successive rounds of grouting will be performed by dividing the spacing of the previous round of boreholes used for grouting. The later rounds of grouting will experience lower grout "take" — that is, as formation voids and flow pathways are filled during the initial grouting rounds, the formation will "take" less grout. The use of this testing and remedial grouting phased approach, in addition to both overlapping criteria and a designed program to indicate completeness of the program — based on such factors as grout injection pressure, volume pumped into the formation, and observable seepage, if any — will determine the adequacy and completeness of the horizontal grouting program.**
- **A temporary dewatering system would be installed for the two power block area deep excavations. Drainage sumps would be installed at the bottom of the excavations from which surface drainage and/or accumulated groundwater would be pumped to the cooling canals of the industrial wastewater facility. The subsequent dewatering phases, known as the excavation phase and foundation construction, are further discussed in Section 4.2.**
- **Once construction of the diaphragm wall is completed around the planned deep foundation area, excavation of the existing material within its interior would commence using conventional methods (use of explosives would not be required). Excavated material not suitable for reuse would be transferred to the designated spoils areas, as depicted on Figure 3.9-1 (Sheet 2). Material removed from the excavation and evaluated as**

acceptable, would be stored on the plant area and used later as common Category II or Category I structural backfill.

- **Lean concrete fill would be placed between the excavated surface of the Key Largo Limestone Formation at approximately -35.0 feet NAVD 88 and an approximate elevation of –16.0 feet NAVD 88. At this elevation, additional lean concrete fill, mud mat(s), and a waterproof membrane would provide an interface at –14.0 feet NAVD 88 for construction of the containment and auxiliary building reinforced concrete foundations. Category I structural fill would then be placed to prescribed compaction requirements in the annular space between the power block structures and the diaphragm wall. The Category I structural fill would extend to the top of the wall and additional Category I fill would be placed over Category II fill at a 1.5:1 horizontal to vertical slope past the diaphragm wall perimeter.**

Once the power block area has been backfilled to the top of diaphragm wall, backfill of the remaining plant area would be completed in a sequence defined by the construction schedule. Finished grade of the plant area would slope up from an approximate elevation of 19.0 feet NAVD 88 (adjacent to the perimeter retaining wall) to elevation 25.5 feet NAVD 88 at the power block area near the center of the plant area. The slope of the finished grade would be approximately 0.5 percent from the exterior walls to the power block areas with contours and swales to allow drainage into the surrounding canals.

The following Subsection numbering text will be revised:

3.9.2.**2**~~1~~ Structural Construction

As described in Subsection 3.9.~~1.8~~ **2.1**, the power block is an AP1000 consisting of the following
steel and concrete buildings:

ER Subsection 4.2.1.1 will be revised as follows:

The testing and remedial grouting phase, as discussed in Subsection 3.9.~~1.7~~**2.1**, would consist of up to four separate grouting injection events, based on observations made during each grouting injection phase. The estimated duration for this phase is 13 weeks per excavation, with an estimated maximum dewatering pumping rate of 1000 gallons per minute (gpm).