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Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Subject: Duke Energy Carolinas, LLC
William States Lee III Nuclear Station - Docket Nos. 52-018 and 52-019
AP1000 Combined License Application for the
William States Lee III Nuclear Station Units 1 and 2
Supplemental Information Addressing the Potential for Reservoir-Induced Seismicity Associated with Off-Site Water Storage
Ltr# WLG2009.07-05

References: Letter from Jessie M. Muir (NRC) to Bryan J. Dolan (Duke Energy), Request for Additional Information Regarding the Environmental Review of the Combined License Application for William States Lee III Nuclear Station, Units 1 and 2, dated August 21, 2008 (ML082200509)

Letter from Bryan J. Dolan (Duke Energy) to Document Control Desk, U.S. Nuclear Regulatory Commission, Response to Request for Additional Information, Ltr# WLG2009.03-17, dated March 19, 2009 (ML090830501)

This letter provides supplemental information to the Nuclear Regulatory Commission's requests for additional information (RAIs) and the Duke Energy response included in the reference letters. Environmental Report (ER) RAIs 59, 60, and 96 discuss the utilization of off-site water storage for use as supplemental water to support plant operations. The Duke Energy response committed to a future supplement to the ER and updates to the Final Safety Analysis Report (FSAR).

The enclosed supplemental information addresses the potential for reservoir-induced seismicity (RIS) associated with off-site supplemental water storage. The response is addressed in a separate enclosure, which also identifies associated changes, when appropriate, that will be incorporated into a future revision of the Final Safety Analysis Report for the Lee Nuclear Station.

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If you have any questions or need any additional information, please contact Peter S. Hastings, Nuclear Plant Development Licensing Manager, at 980-373-7820.

Bryan J. Dolan
Vice President
Nuclear Plant Development

Enclosure:

1) Supplemental Information Addressing the Potential for Reservoir-Induced Seismicity Associated with Off-Site Water Storage

AFFIDAVIT OF BRYAN J. DOLAN

Bryan J. Dolan, being duly sworn, states that he is Vice President, Nuclear Plant Development, Duke Energy Carolinas, LLC, that he is authorized on the part of said Company to sign and file with the U. S. Nuclear Regulatory Commission this supplement to the combined license application for the William States Lee III Nuclear Station and that all the matter and facts set forth herein are true and correct to the best of his knowledge.

Bryan Dolan

Bryan J. Dolan

Subscribed and sworn to me on July 31, 2009

Phoebe P. Eccisto

Notary Public

My commission expires: June 26, 2011

SEAL

xc (w/o enclosure):

Loren Plisco, Deputy Regional Administrator, Region II
Stephanie Coffin, Branch Chief, DNRL

xc (w/ enclosure):

Brian Hughes, Senior Project Manager, DNRL

Lee Nuclear Station Supplemental Response to Request for Additional Information (RAI)

RAI Letter Dated: August 21, 2008

Reference NRC RAI Number(s): ER RAI 59, ER RAI 60, and ER RAI 96

NRC RAI:

ER RAI 59: Provide information on the expected 'normal' and expected "maximum" extent, frequency, and duration of drawdown of Make-Up Pond B? What periods of record have been analyzed to answer this question? If analysis is limited to the 81 year record, would these values change if a shorter, more recent record was examined (e.g. the last 10, 20, or 30 years)?

ER RAI 60: Provide a discussion on the "normal" and "maximum" time frames for recharge of Make-Up Pond B following water usage during low flow conditions? During the site audit discussions in April/May 2008, Duke representatives were asked to generate a scenario that shows duration and frequency of drawdown.

ER RAI 96: Describe any plans Duke has to develop additional backup water reserves in addition to Make-Up Pond B to lessen the potential for plant shut downs and to avoid water availability in the future. During the site audit (April/May 2008), the Applicant indicated that they were looking at other options to increase water storage capacity beyond Make-Up Pond B. Provide a summary of the other options Duke is considering in addition to Make-Up Pond B as cooling water during low flow conditions.

Duke Energy Response:

Duke Energy plans to construct an additional off-site make-up pond as a source of supplemental water to mitigate the potential loss of generating capacity that could result from an extended drought. The new pond will be formed by impounding London Creek. The resulting pond will be designated "Make-Up Pond C" and will be located to the west of the existing Make-Up Pond B.

In addition to the changes to Final Safety Analysis Report (FSAR), Section 2.5, "Geology, Seismology, and Geotechnical Engineering," to address reservoir-induced seismicity (RIS) provided in this response, Duke Energy has committed to provide two other supplements to address Make-Up Pond C. Changes addressing the impact to FSAR Section 2.4, "Hydraulic Engineering," will be submitted to the NRC on or about July 31, 2009. Supplemental changes to the Environmental Report (ER), Revision 1, and conforming changes to the FSAR, Revision 1, will be submitted to the NRC on or about September 30, 2009.

Duke Energy evaluated the potential for Make-Up Pond C to initiate RIS in a manner that could adversely affect the ability of safety-related systems, structures, or components to perform their design basis function. This evaluation includes: 1) review of RIS literature and scientific understanding of the potential for RIS based on crustal (e.g., underlying geologic and tectonic) properties and reservoir operations; 2) review of past cases of RIS associated with reservoirs with similar or greater hydraulic heights; 3) analysis of seismicity associated with similar reservoirs operating in the Carolina Piedmont; and 4) analysis of U.S. Bureau of Reclamation dams and reservoirs located in metamorphic terranes with historic hydraulic height and operating configurations comparable to or exceeding those for Make-Up Pond C. Specifically, Make-Up Pond C will have a dam height of approximately 132 ft, with pond level ten feet below the top of the dam. The maximum pool reservoir volume will be approximately 20,000 ac-ft. Maximum reservoir depth changes will be ≤ 45 ft over no less than 120 days.

This evaluation demonstrates that the potential for RIS associated with the Make-Up Pond C impoundment is considered low with a negligible risk to safe operations for Lee Nuclear Station Units 1 and 2. If RIS associated with Make-Up Pond C occurs, it is unlikely the induced magnitudes would exceed **M** > 4, a value well below the short period controlling earthquake for the Lee Nuclear Site. Ground motions associated with RIS events (**M** < 4) typically display high frequency, high peak ground acceleration with low energy. Therefore, the construction of Make-Up Pond C will not have an adverse impact on the ability of any safety-related system, structure, or component in performing its design function.

Based on this analysis, Lee Nuclear Station FSAR Subsections 2.5.1.2.7, 2.5.2.1.3, 2.5.2.8, 2.5.3.8, 2.5.4.1, 2.5.4.1.4, and 2.5.4.1.5, are revised to include the results of the evaluation of the potential for RIS associated with the configuration and operating parameters of Make-Up Pond C. Mark-ups of the FSAR are provided as attachments to this enclosure, and will be incorporated into a future revision of the Final Safety Analysis Report.

Associated Revision to the Lee Nuclear Station Final Safety Analysis Report:

FSAR Subsection 2.5.1.2.7

FSAR Subsection 2.5.2.1.3

FSAR Subsection 2.5.2.8

FSAR Subsection 2.5.3.8

FSAR Subsection 2.5.4.1

FSAR Subsection 2.5.4.1.4

FSAR Subsection 2.5.4.1.5

Attachment:

1) Mark-up of FSAR Subsections 2.5.1.2.7, 2.5.2.1.3, 2.5.2.8, 2.5.3.8, 2.5.4.1, 2.5.4.1.4, and 2.5.4.1.5

Lee Nuclear Station Supplemental Response to Request for Additional Information (RAI)

Attachment 1 to ER RAI 59, ER RAI 60, and ER RAI 96

Mark-up of FSAR Subsections 2.5.1.2.7, 2.5.2.1.3, 2.5.2.8, 2.5.3.8, 2.5.4.1, 2.5.4.1.4, and 2.5.4.1.5

COLA Part 2, FSAR, Chapter 2, Subsection 2.5.1.2.7, is revised by inserting the following paragraph at the end of the subsection as follows:

The potential for reservoir-induced seismicity (RIS) is considered low and it is unlikely the induced magnitudes would exceed **M** > 4, a value well below the short period controlling earthquake as described in Subsection 2.5.2.1.3.

COLA Part 2, FSAR, Chapter 2, Subsection 2.5.2.1.3, is added after Subsection 2.5.2.1.2 as follows:

2.5.2.1.3 Evaluation of the Potential for Reservoir-Induced Seismicity

This subsection presents information on the potential for reservoir-induced seismicity (RIS) at the Lee Nuclear Station associated with the construction and operation of Make-Up Pond C (Figure 1.1-202). No documented RIS is associated with the impoundment of Make-Up Pond B, which was constructed as part of the former Cherokee Nuclear Station.

Evaluations to assess the potential for RIS associated with the Make-Up Pond C impoundment indicate a low potential for RIS and negligible risk to safe operations for Lee Nuclear Station Units 1 and 2. RIS has sometimes been observed at comparable-sized reservoirs, and is usually confined to earthquake magnitudes of **M** < 4 for this depth of reservoir. Factors controlling the presence or absence of RIS are strongly dependent on local geologic properties, including reservoir rock type, fault and fracture characteristics, local and regional tectonics, and reservoir operation characteristics.

These evaluations consider RIS potential associated with the configuration and operating parameters for Make-Up Pond C, and include an extensive review of RIS literature and scientific understanding of the potential for RIS based on crustal (e.g., underlying geologic and tectonic) properties and reservoir operations. The evaluations also include a review of past world-wide cases of RIS associated with reservoirs with similar or greater hydraulic heights to Make-Up Pond C, an analysis of seismicity associated with similar reservoirs operated in the Carolina Piedmont, and an analysis of U.S. Bureau of Reclamation dams and reservoirs located in metamorphic terranes with historic hydraulic height and operating configurations comparable to or exceeding Make-Up Pond C hydraulic height or hydraulic height variation operating parameters.

NUREG/CR-5503 (Reference 300) notes that almost all the largest magnitude RIS has occurred in areas where there is active Quaternary faulting. NUREG/CR-5503 makes several important distinctions. First, NUREG/CR-5503 distinguishes between a seismogenic fault, defined as being capable of producing a moderate to large earthquake (**M** > 5), and a nonseismogenic fault that is not capable of producing a moderate to large earthquake. Second, NUREG/CR-5503 defines a tectonic fault as produced by deep-seated crustal-scale processes acting at or below seismogenic depths and a nontectonic feature as a feature produced by shallow crustal or surficial processes acting above seismogenic depth (note seismogenic in this context refers to **M** > 5 earthquakes). These distinctions are important because they directly correspond to distinctions made between the most common form of RIS (nontectonic nonseismogenic shallow earthquakes with **M** ≤ 5) and **M** > 5 triggered seismicity that occurs on tectonic seismogenic faults. The operation of Make-Up Pond C represents a surficial process. Based on NUREG/CR-5503, the lack of identified active seismogenic faults in the Make-Up Pond C reservoir area indicates that **M** > 5 triggered seismicity is unlikely.

The analysis considers reservoirs from regions of ongoing tectonic activity, such as California, as well as regions with low rates of tectonic deformation, such as the Carolina Piedmont.

Following NUREG/CR-5503, it is important to make a distinction between triggered seismicity in regions of active faulting that are characterized by **M** > 5 tectonic seismogenic earthquakes in the historical record, such as the region west of the Rocky Mountains, and RIS in regions that are not associated with ongoing seismic activity and generally lack **M** > 4 historical seismicity. Triggered seismicity implies that a tectonic seismogenic earthquake that was likely to occur at a later date is triggered and occurs earlier as a result of perturbations of elastic stresses and/or pore pressures associated with reservoir operations. The most significant example of triggered seismicity appears to be the 2008 **M** 7.9 Wenchuan, China, earthquake (Klose, 2008) (Reference 301). This earthquake occurred in a tectonically active region of China on a large pre-existing active fault with a recurrence interval of large-magnitude (**M** ~ 8) surface rupturing earthquakes in the late Holocene of ~1000-1200 yr (Lin et al., 2009) (Reference 302). The reservoir did not influence the maximum size or the long-term likelihood that the earthquake would occur; it may have caused the earthquake to occur earlier than if the reservoir had not been impounded (Reference 301). The 2008 **M** 7.9 Wenchuan, China, earthquake was inevitable in the geologic timeframe of seismic source characterization (Reference 302), and is the type of tectonic seismogenic source that would be accounted for in a probabilistic seismic hazard analysis and related ground motion analyses.

Analysis of documented cases of RIS for reservoirs located in metamorphic terranes, including reservoirs in the Carolina Piedmont, suggests that for low seismicity rate regions, maximum RIS magnitudes for reservoirs with hydraulic heights < 60 m are less than **M** 4. Considering all U.S. Bureau of Reclamation reservoirs located in metamorphic terranes and all earthquakes located within 30 km of the reservoirs, post-impoundment maximum magnitudes have been less than **M** 4 for reservoirs located in regions of low historical seismicity, and have been less than or equal to **M** 5 for reservoirs located in regions where historical pre-impoundment maximum magnitudes were ≥ **M** 5.5.

Consequently, available information indicates that any RIS that might be associated with Make-Up Pond C operating parameters would likely have a maximum RIS magnitude of **M** < 4, and is unlikely to have a maximum magnitude of **M** ≥ 5. The current short-period design is controlled by a local **M** 5-5.5 as described in Subsection 2.5.2.4.5. There is no observed precedent for **M** > 5 RIS associated with reservoirs located in low seismicity rate metamorphic terranes.

In metamorphic terranes comparable to the Make-Up Pond C site, if through-going fault(s) and/or fractures that intersect the reservoir exist, increasing fluid pore pressure is likely to be the dominant mechanism that would induce earthquakes (Talwani et al., 2007) (Reference 303). Talwani et al., 2007 shows that earthquakes are only induced over a specific range of fault and fracture hydraulic diffusivities. Outside the range of hydraulic diffusivity of 0.1 m^2/s to 10 m^2/s, induced seismicity rarely occurs and is mostly associated with injection-induced seismicity (Reference 303). The largest observed Carolina Piedmont RIS magnitude of **M** 4.3 occurred as a delayed response at Clark Hill (Strom Thurmond) Reservoir (Talwani, 1976 (Reference 304) and Secor, 1987 (Reference 305)). Assuming the Talwani et al., 2007 evaluation of hydraulic diffusivities is correct (Reference 303), it follows that steeply-dipping faults and/or fractures with hydraulic diffusivity of 0.1 m^2/s to 10 m^2/s exist at Clark Hill (Strom Thurmond) Reservoir to produce the observed delayed RIS. The nearly universal observation of metamorphic RIS maximum magnitudes being less than **M** 4 documented in the Carolina Piedmont, the western U.S., and the Brazilian craton strongly suggests that metamorphic terranes rarely contain steep faults and/or fractures with sufficient hydraulic diffusivities to allow pore pressure perturbations to propagate to sufficient depths to create enough fault area for maximum RIS magnitudes to exceed **M** > 4. Thus, metamorphic site RIS is typically caused by nontectonic nonseismogenic processes (NUREG/CR-5503) associated with initial elastic/pore pressure responses at shallow depths, such as observed at Monticello Reservoir (Chen and Talwani, 2001a and 2001b (References 306 and 307) and Secor et al., 1982 (Reference 310)), relatively tight faults/fractures that confine RIS to relatively shallow depths, or where more permeable faults/fractures exist, as observed at Jocassee Reservoir (Rajendran, 1995) (Reference 308), Keowee Reservoir (Schaeffer, 1991) (Reference 309), and Clark Hill (Strom Thurmond) Reservoir (References 304 and 305).

By analogy, there is no documented RIS associated with Make-Up Pond B, located approximately 2.5 miles to the southeast and constructed over 30 years ago as part of the former Cherokee Nuclear Station project. It is likely that no significant steeply dipping faults or fractures exist beneath the Make-Up Pond C location that are oriented nearly orthogonal to the local direction of minimum compressive stress. Therefore, it would appear unlikely that RIS with maximum magnitudes exceeding **M** > 4 are probable at Make-Up Pond C, if at all. This is because of 1) the likely confinement of RIS responses to the top several km of the crust by low effective hydraulic diffusivity, and 2) the limited maximum magnitudes associated with coupled elastic/pore pressure initial loading and shallow confinement of fault/fracture-related RIS responses (Reference 307), and the nearly instantaneous poroelastic response (Reference 303).

Based on the review of the Carolina Reservoirs, it appears that three conditions are needed for RIS to occur:

(1) Rock stressed close to failure conditions (a situation more likely to occur in felsic-crystalline rock rather than felsic to intermediate meta-volcanic and meta-sedimentary crystalline rock underlying Make-Up Pond C),

(2) Through-going fractures favorably oriented relative to the maximum horizontal stress direction, and

(3) Hydraulic diffusivity in the range of 0.1 m^2/s to 10 m^2/s as determined by Talwani et al., 2007 (Reference 303).

RIS has been shown to not occur when one of these conditions does not exist (e.g., Bad Creek Reservoir) (Schaeffer et al., 1991; Talwani et al., 1990a and 1990b; and Widdowson et al., 1991) (References 309, 311, 312, and 313). For a large region that contains Make-Up Pond C, the dominant joint orientation is N47°E-vertical (Schaeffer, 1981) (Reference 314), and the predominant large-scale shear zone strike northeast (Horton and Dicken, 2001) (Reference 315). Zoback and Zoback, 1980 (Reference 316) find that the Atlantic coastal plain that encompasses Make-Up Pond C is dominated by NW-SE oriented compressive stress. Thus, the dominant joint and fault orientations are orthogonal to the maximum compressive stress, which would minimize fracture hydraulic diffusivities on these dominant through-going structures. Secondary joints are oriented nearly vertical and normal to the minimum compressive stress direction of Zoback and Zoback, 1980 (Reference 316) based on Schaeffer, 1981 (Reference 314) and would be optimally oriented to maximize fracture hydraulic diffusivities. Consequently, RIS on large through-going faults and fractures is inhibited in the current stress regime and the second condition above is not satisfied if the regional fracture results of Schaeffer, 1981 apply to the Make-Up Pond C site. Instead, it appears that any RIS that may occur in Make-Up Pond C would be associated with secondary, nonthrough-going joints, which are likely to place strong limits on maximum RIS magnitude of **M** < 5 and possibly **M** < 3.

Review of the Lee Nuclear Station site conditions indicates that all three conditions are not present. Specifically, it is concluded that the first condition is not met and that **M** > 3 RIS is not expected to be associated with the Make-Up Pond C impoundment, and the second condition is not likely to be satisfied based on regional and site geologic evaluations described in this Subsection. This conclusion is further supported by the fact that no known recorded RIS is associated with Make-Up Pond B impoundment or other Carolina Piedmont reservoirs with similar geologic conditions. Furthermore, there are no documented instances of RIS for reservoirs of similar size in rocks of similar lithologies (e.g., felsic to intermediate meta-volcanic and meta-sedimentary rock types).

In the event that RIS associated with Make-Up Pond C occurs, it is unlikely the induced magnitudes would exceed **M** > 4, a value well below the short period controlling earthquake. Ground motions associated with RIS events (**M** < 4) typically display high frequency, high peak ground acceleration with low energy. The potential for RIS associated with the Make-Up Pond C impoundment is considered low with a negligible risk to safe operations for Lee Nuclear Station Units 1 and 2.

COLA Part 2, FSAR, Chapter 2, Subsection 2.5.2.8, is revised to add the following new references:

300. NUREG/CR-5503, 1999, Techniques for identifying faults and determining their origins, authored by K. L. Hansen, K. I. Kelson, M. A. Angell, and W. R. Lettis, Office of Nuclear Regulatory Research, U. S. Nuclear Regulatory Commission, Washington, DC.

301. Klose, C.D., 2008, The 2008 M7.9 Wenchuan earthquake - Result of Local and Abnormal Mass Imbalances?, Eos Transactions. AGU, 89(53), Fall Meeting Supplement, Abstract U21C-08.

302. Lin, A., Ren, Z., Jia, D., and X. Wu, 2009, Co-seismic thrusting rupture and slip distribution produced by the 2008 Mw 7.9 Wenchuan earthquake, China, Tectonophysics, vol. 471, p. 203–215.

303. Talwani, P., L. Chen, and K. Gahalaut, 2007, Seismogenic permeability, ks, Journal of Geophysical Research, v. 112, B07309, doi:10.1029/2006JB004665.

304. Talwani, P., 1976, Earthquakes associated with the Clark Hill Reservoir, South Carolina—A case of induced seismicity, Engineering. Geology., 10, 239–253.

305. Secor, D.T., Jr., 1987, Regional overview, p. 1-18, in, Secor, D.T, Jr., ed., Anatomy of the Alleghanian orogeny as seen from the Piedmont of South Carolina and Georgia: Carolina Geological Society Field Trip Guidebook, November 14-15, 1987, 97p.

306. Chen, L., and P. Talwani, 2001a, Renewed seismicity near Monticello Reservoir, South Carolina, 1996–1999, Bulletin of the Seismological Society of America, 91, 94-101.

307. Chen, L., and P. Talwani, 2001b, Mechanism of Initial Seismicity following Impoundment of the Monticello Reservoir, South Carolina, Bulletin of the Seismological Society of America, 91, 1582–1594.

308. Rajendran, K., 1995, Sensitivity of a seismically active reservoir to low-amplitude fluctuations: Observations from Lake Jocassee, S. Carolina, Pure and Applied Geophysics, v. 145, 87-95.

309. Schaeffer, M.F., 1991, A relationship between joint intensity and induced seismicity at Lake Keowee, northwestern South Carolina, Bulletin of the Association of Engineering Geologists, v. 28, no. 1, p. 7-30.

310. Secor, D.T., Jr., L.S. Peck, D.M. Pitcher, D.C. Prowell, D.H. Simpson, W.A. Smith, and A.W. Snoke, 1982, Geology of the area of induced seismicity activity at Monticello

Reservoir, South Carolina: Journal of Geophysical Research, vol. 87, no. B8, p. 6945-6957.

311. Talwani, P., A Onwby, K. Rajendran, and M. F. Schaeffer, 1990a, A field study of reservoir induced seismicity at Bad Creek, South Carolina; the preimpoundment phase, Seismological Research Letters, v. 61, No. 3-4, p. 162.

312. Talwani, P., A Onwby, K. Rajendran, and M. F. Schaeffer, 1990b, Bad Creek project: A progress report, EOS, Transactions, American Geophysical Union, v. 71, No. 43, p. 1453.

313. Widdowson, M.A., Meadows, M.E., Dickerson, J.R., Talwani, P., Schaffer, M., Orne, W.H., 1991, Hydrologic impact of reservoir filling on a fractured crystalline rock aquifer, Proc. of the 1991 National Conf. on Irrigation and Drainage Engineering, Ed. Ritter, W.F., American Society Of Civil Engineers, New York, pp.161-167.

314. Schaeffer, M.F., 1981, Polyphase Folding in a Portion of the Kings Mountain Belt, North-Central South Carolina, in Geological Investigations of the Kings Mountain Belt and Adjacent Areas in the Carolinas, Carolina Geological Society Field Trip Guidebook.

315. Horton, J.W. Jr. and Dicken, C.L.,2001, Preliminary Digital Geologic Map of the Appalachian Piedmont and Blue Ridge, South Carolina Segment, U.S. Geological Survey Open-File Report 01-298, 1:500,000 scale.

316. Zoback, M.L., and M. Zoback, 1980, State of stress in the conterminous United States, Journal of Geophysical Research, vol. 85, p. 6113-6156.

COLA Part 2, FSAR, Chapter 2, Subsection 2.5.3.8, is revised as follows:

2.5.3.8 Potential for Surface Tectonic Deformation at the Site

The potential for tectonic deformation at the site is negligible. Detailed geologic mapping and inspection of excavations during construction of the former Duke Cherokee nuclear site reveal no evidence of geologically recent or active faulting (References 201, 202, and 203). Based on reviews of updated geologic, seismic, and geophysical data from published literature, interviews with expert earth scientists, and the COL investigations, there are no Quaternary faults or capable tectonic sources within the site vicinity. The potential for non-tectonic surface deformation, including reservoir-induced seismicity (RIS), within the site area is negligible. There is no information suggesting the potential for non-tectonic surface deformation within the site area. Rocks within the site area are igneous and metamorphic crystalline rocks (References 205 and 206) that are neither susceptible to karst-type dissolution collapse nor to subsidence due to fluid withdrawal. Evaluations related to the potential of RIS associated with Make-Up Pond C are described in Subsection 2.5.2.1.3.

COLA Part 2, FSAR, Chapter 2, Subsection 2.5.4.1, second paragraph, fourth bullet, is revised as follows:

- Subsection 2.5.4.1.4, Effects of Human Activities, evaluates the effects of human activities such as mineral, or, water, oil, and gas extraction on the potential for subsidence and collapse at the Lee Nuclear Station Site. These activities are found to have not affected the site. The potential for reservoir-induced seismicity (RIS) associated with Make-Up Pond C is also evaluated. This activity is not expected to affect the site.

COLA Part 2, FSAR, Chapter 2, Subsection 2.5.4.1.4, is revised by inserting the following new paragraph as follows:

Reservoir-induced seismicity (RIS) associated with the filling and operation of Make-Up Pond C is considered negligible, and it is unlikely the induced magnitudes would exceed **M** > 4, a value well below the short period controlling earthquake. Evaluations related to the potential of RIS associated with Make-Up Pond C are described in Subsection 2.5.2.1.3.

COLA Part 2, FSAR, Chapter 2, Subsection 2.5.4.1.5, fifth paragraph, is revised as follows:

As noted in Subsection 2.5.3, earthquake activity with its resulting ground motion effects is judged to be the primary geologic hazard to the Lee Nuclear Station Site. The potential for tectonic surface deformation within the site area is judged to be negligible. The potential for non-tectonic surface deformation within the site area, including surface deformation associated with potential Make-Up Pond C RIS, is negligible. A detailed discussion of vibratory ground motion and potential for surface faulting at the Lee Nuclear Station Site is presented in Subsection 2.5.2 and 2.5.3, respectively.